Appendix A:
Air Quality and Greenhouse Gas Emissions Supporting Information

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A.1 - CalEEMod Output Files

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CalEEMod Output Files

Table of Contents

CalEEMod Notes **A.1-1**

Phase 1 Construction—Annual **A.1-4**

Phase 1 Construction—Summer **A.1-18**

Phase 1 Construction—Winter **A.1-35**

Phase 2 Construction—Annual **A.1-49**

Phase 2 Construction—Summer **A.1-58**

Phase 2 Construction—Winter **A.1-67**

Project 2022 Operations—Annual **A.1-76**

Project 2022 Operations—Summer **A.1-85**

Project 2022 Operations—Winter **A.1-90**

Project 2030 Operations—Annual **A.1-95**

Existing 2022 Operations—Annual **A.1-102**

Existing 2022 Operations—Summer **A.1-110**

Existing 2022 Operations—Winter **A.1-116**

Existing 2030 Operations—Annual **A.1-122**

CalEEMod Notes

Note 1. CO2 Intensity Factor adjusted to match PG&E 2017 emissions rates.

Source: Pacific Gas & Electric. 2018. Corporate Responsibility and Sustainability Report 2018. Website: http://www.pgecorp.com/corp_responsibility/reports/2018/assets/PGE_CRSR_2018.pdf. Accessed June 18, 2020.

Note 2. Land uses and sizes are drawn from March 2020 site plans for proposed development. Land uses represent the following (Residential applies to both Phase 1 and Phase 2 Construction):

Parking > Other Asphalt Surfaces > 162x1000sqft = Internal road network.

Parking > Other Asphalt Surfaces > 63x1000sqft = All Weather Emergency Vehicle Access Road.

Parking > Other Non-Asphalt Surfaces > 7.49xAcre = Landscaping not included in each residential lot. Acreage accounted for and square footage reduced to 0 to prevent pavement estimated while including grading estimates.

Parking > Other Non-Asphalt Surfaces > 23.88x1000sqft = V-Ditch improvements.

Parking > Other Non-Asphalt Surfaces > 7.95x1000sqft = Off-site improvements for sewer and water connections.

Residential > Single Family Housing > 51xDwelling Units = 51 proposed dwelling units to be constructed. Half of the total proposed 102 dwelling units are assumed to be constructed during phase 1 of project and the other half constructed during phase 2 of project.

Operational model includes 102 dwelling units. Lot acreage and square footage are adjusted to match client-provided information, dated 12/11/2019.

Note 3. Building construction phase adjusted to accommodate an overall project phase 1 construction timeline of 14 months. Project phase 2 is assumed to occur over an 8-month period. In total, project construction will occur from October 2021 through October 2023. Architectural coating assumed to be 115 days or occur over second half of construction and paving phases, whichever is shorter.

Note 4. 40,000 cubic yards of cut material during grading phase and 46,100 square feet of softscape anticipated to be exported during project phase 1, as per client-provided information dated 12/11/2019. 46,100 square feet of softscape is assumed to be total canopy of trees planned for removal and was converted to cubic yards based on an average height of 80 feet and an estimated 0.2 empty space factor for tree material volume, resulting in 27,966 cubic yards.

Note 5. 5,300 square feet of building space to be demolished, as per client-provided information dated 12/11/2019. According to the Federal Emergency Management Administration (FEMA) (2010), an empty space factor of 0.33 should be applied to the general building demolition debris formula to account for empty space in buildings, resulting in the following formula. (Length x Width x Height x 0.33)/27 = Cubic Yards. Therefore, the 5,300 square feet

of building space to be demolished would produce an estimated 648 cubic yards of demolition debris. According to the California Department of Resource Recycling and Recovery (CalRecycle), wooden construction debris, uncompacted, is estimated at 400 pounds per cubic yard. Therefore, construction of project phase 1 is anticipated to generate an estimated 259 tons of debris to be removed during demolition.

Sources of factors:

Federal Emergency Management Agency (FEMA). 2010. Debris Estimating Field Guide. September. Website: https://www.fema.gov/pdf/government/grant/pa/fema_329_debris_estimating.pdf. Accessed June 12, 2020.

CalRecycle. 2018. "Calculations: Solid Waste Cleanup Program Weights and Volumes for Project Estimates." Last updated August 20, 2018. Website: https://www.calrecycle.ca.gov/swfacilities/cdi/tools/calculations. Accessed June 12, 2020.

Note 6. BAAQMD *Basic Construction Mitigation Measures Recommended For All Proposed Projects* was applied to this project. This includes watering exposed areas at minimum twice per day and limiting construction vehicle speeds to 15 miles per hour on unpaved roads.

Note 7. Building construction phase adjusted to accommodate an overall project phase 2 construction timeline of 10 months. Architectural coating assumed to be 115 days or occur over second half of construction and paving phases, whichever is shorter.

Note 8. The Draft Report Transportation Impact Analysis produced by W-Trans, dated May 6, 2020, was used to determine vehicle trips and vehicle miles traveled by the project. The average daily trip generation rate per dwelling unit of 9.44 was used in the Transportation Impact Analysis as well as Phase 1 and Phase 2 of project operation modeling.

Note 9. The proposed project would be required to comply with BAAQMD District Regulation 6, Rule 3, which prohibits any person or builder from installing a wood-burning device in new building construction.

Note 10. The annual waste generation rate per dwelling unit was adjusted to match the 2006 residential sector generation rate found on the California Department of Resources Recycling and Recovery's (CalRecycle) website. The waste generation rate found therein is 12.23 pounds per household per day. This equals 4,463.95 pounds per household per year, or 2.23 tons per household per year.

Source: California Department of Resources Recycling and Recovery (CalRecycle). 2006. Estimated Solid Waste Generation Rates, Residential Sector Generation Rates. Website: https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates. Accessed June 8, 2020.

Note 11. The project site plans, dated March 2020, show that each floor plan employed for the project would not include any hearth. Therefore, no hearth features were included in the model.

Note 12. According to project information provided by the project applicant, dated 12/11/2019, each dwelling unit would include solar panel electricity generation capacity of 3.10 kW. Each project phase includes the construction and subsequent operation of 51 dwelling units, each with a 3.10 kWh generation capacity. Therefore, when fully operational, the project would have a total generation capacity of 3.10 x 102 = 316.2 kW.

According to EnergySage.com, a 3.5 kW PV system has an average annual production rate of 4,954 kWh/year. The below equation proportionally applies the same average annual production rate to the proposed 3.10 kW system for each residence.

(3.10/3.50) * 4,954 kWh/year = 4,387.83 kWh/year

Therefore, the proposed project is expected to result in an average on-site electricity generation rate of 4,387.83 kWh per residence per year. The following equation converts this to total annual on-site electricity generation.

4,387.83 kWh/year * 102 Residences = 447,558.51 kWh/year

Source: EnergySage. 2020. "How many solar panels do I need for my home?" Website: https://news.energysage.com/how-many-solar-panels-do-i-need/. Accessed June 16, 2020.

Note 13. The project would be required to comply with the Green Building Code Standards and Water Efficient Land Use Ordinance, resulting in a reduction in indoor and outdoor water consumption rate by 20 percent compared to the 2016 California Building Code.

Note 14. For the 2030 operational model, the CO2 intensity factor was calculated by taking the following steps:

Step 1: Identify PG&E's 2017 CO2 intensity factor of 210 lbs/MWh (from PG&E's 2019 Corporate Responsibility and Sustainability Report) and PG&E's 2017 Renewables Portfolio Standards (RPS) power mix of 33 percent of retail electricity generation from renewable sources (from PG&E's 2018 Corporate Responsibility and Sustainability Report).

Step 2: Identify the Statewide 2030 RPS goal: 50 percent of retail electricity generation from renewable sources.

Step 3: Extrapolate the RPS power mix to CO2 intensity factor from 2017 to 2030.

First, (210/0.67 = 313.4328) Then, (313.4328*0.5 = 156.7164)

Therefore, PG&E's anticipated 2030 CO2 intensity factor would be 156.72 lbs/MWh.

Please note, this is only meant as a relative estimate of PG&E's 2030 CO2 intensity factor as it relies on PG&E's 2030 non-renewable energy generation mix to stay proportionally equal to its non-renewable energy generation mix in 2017. This is not probable as market availability and cost of resources such as natural gas and diesel are likely to change; however, it is reasonable to assume that overall reductions in PG&E's CO2 intensity factor would occur by 2030 when compared to 2017.

Richmond Country Club Phase 1 - Construction

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	162.00	1000sqft	3.72	162,000.00	0
Other Asphalt Surfaces	63.00	1000sqft	1.45	63,000.00	0
Other Non-Asphalt Surfaces	7.49	Acre	7.49	0.00	0
Other Non-Asphalt Surfaces	23.88	1000sqft	0.55	23,878.00	0
Other Non-Asphalt Surfaces	7.95	1000sqft	0.18	7,950.00	0
Single Family Housing	51.00	Dwelling Unit	5.85	94,645.00	146

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1.

Land Use - Please see CalEEMod Note 2.

Construction Phase - Please see CalEEMod Note 3.

Demolition - Please see CalEEMod Note 5.

Grading - Please see CalEEMod Note 4.

Construction Off-road Equipment Mitigation - Please see CalEEMod Note 6.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	300.00	225.00
tblConstructionPhase	NumDays	20.00	115.00
tblConstructionPhase	PhaseEndDate	2/16/2023	11/3/2022
tblConstructionPhase	PhaseEndDate	4/13/2023	12/1/2022
tblConstructionPhase	PhaseEndDate	3/16/2023	12/1/2022
tblConstructionPhase	PhaseStartDate	3/17/2023	6/24/2022
tblConstructionPhase	PhaseStartDate	2/17/2023	11/4/2022
tblGrading	MaterialExported	0.00	40,000.00
tblGrading	MaterialExported	0.00	27,966.00
tblLandUse	LandUseSquareFeet	23,880.00	23,878.00
tblLandUse	LandUseSquareFeet	326,264.40	0.00
tblLandUse	LandUseSquareFeet	91,800.00	94,645.00
tblLandUse	LotAcreage	16.56	5.85
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1561	2.4229	1.0852	5.0000e-003	0.3075	0.0621	0.3695	0.1267	0.0574	0.1841	0.0000	468.4109	468.4109	0.0574	0.0000	469.8458
2022	0.9965	2.4452	2.4950	5.8500e-003	0.1566	0.1008	0.2574	0.0424	0.0950	0.1374	0.0000	522.4461	522.4461	0.0763	0.0000	524.3537
Maximum	**0.9965**	**2.4452**	**2.4950**	**5.8500e-003**	**0.3075**	**0.1008**	**0.3695**	**0.1267**	**0.0950**	**0.1841**	**0.0000**	**522.4461**	**522.4461**	**0.0763**	**0.0000**	**524.3537**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1561	2.4229	1.0852	5.0000e-003	0.1826	0.0621	0.2447	0.0691	0.0574	0.1266	0.0000	468.4107	468.4107	0.0574	0.0000	469.8457
2022	0.9965	2.4452	2.4950	5.8500e-003	0.1566	0.1008	0.2574	0.0424	0.0950	0.1374	0.0000	522.4457	522.4457	0.0763	0.0000	524.3534
Maximum	**0.9965**	**2.4452**	**2.4950**	**5.8500e-003**	**0.1826**	**0.1008**	**0.2574**	**0.0691**	**0.0950**	**0.1374**	**0.0000**	**522.4457**	**522.4457**	**0.0763**	**0.0000**	**524.3534**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**26.91**	**0.00**	**19.92**	**34.02**	**0.00**	**17.89**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	10-1-2021	12-31-2021	2.5799	2.5799
2	1-1-2022	3-31-2022	0.7334	0.7334
3	4-1-2022	6-30-2022	0.7740	0.7740
4	7-1-2022	9-30-2022	1.2148	1.2148
		Highest	2.5799	2.5799

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2021	10/28/2021	5	20	
2	Site Preparation	Site Preparation	10/29/2021	11/11/2021	5	10	
3	Grading	Grading	11/12/2021	12/23/2021	5	30	
4	Building Construction	Building Construction	12/24/2021	11/3/2022	5	225	
5	Architectural Coating	Architectural Coating	6/24/2022	12/1/2022	5	115	
6	Paving	Paving	11/4/2022	12/1/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 13.39

Residential Indoor: 191,656; Residential Outdoor: 63,885; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	26.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	3,496.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	5,000.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	126.00	48.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7700e-003	0.0000	2.7700e-003	4.2000e-004	0.0000	4.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**2.7700e-003**	**0.0155**	**0.0183**	**4.2000e-004**	**0.0144**	**0.0148**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	3.4800e-003	6.9000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.9736	0.9736	4.0000e-005	0.0000	0.9747
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.2000e-004	3.4400e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0067	1.0067	2.0000e-005	0.0000	1.0073
Total	**5.6000e-004**	**3.8000e-003**	**4.1300e-003**	**2.0000e-005**	**1.4100e-003**	**2.0000e-005**	**1.4300e-003**	**3.8000e-004**	**2.0000e-005**	**3.9000e-004**	**0.0000**	**1.9803**	**1.9803**	**6.0000e-005**	**0.0000**	**1.9819**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2500e-003	0.0000	1.2500e-003	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**1.2500e-003**	**0.0155**	**0.0168**	**1.9000e-004**	**0.0144**	**0.0146**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	3.4800e-003	6.9000e-004	1.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.9736	0.9736	4.0000e-005	0.0000	0.9747
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.2000e-004	3.4400e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0067	1.0067	2.0000e-005	0.0000	1.0073
Total	**5.6000e-004**	**3.8000e-003**	**4.1300e-003**	**2.0000e-005**	**1.4100e-003**	**2.0000e-005**	**1.4300e-003**	**3.8000e-004**	**2.0000e-005**	**3.9000e-004**	**0.0000**	**1.9803**	**1.9803**	**6.0000e-005**	**0.0000**	**1.9819**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0919	0.0000	0.0919	0.0499	0.0000	0.0499	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7179	16.7179	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0919**	**0.0102**	**0.1021**	**0.0499**	**9.4000e-003**	**0.0593**	**0.0000**	**16.7179**	**16.7179**	**5.4100e-003**	**0.0000**	**16.8530**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0136	0.4680	0.0928	1.3600e-003	0.0296	1.4800e-003	0.0311	8.1400e-003	1.4100e-003	9.5600e-003	0.0000	130.9122	130.9122	5.7400e-003	0.0000	131.0558
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	2.0600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6040	0.6040	1.0000e-005	0.0000	0.6044
Total	**0.0139**	**0.4682**	**0.0948**	**1.3700e-003**	**0.0303**	**1.4800e-003**	**0.0318**	**8.3300e-003**	**1.4100e-003**	**9.7500e-003**	**0.0000**	**131.5162**	**131.5162**	**5.7500e-003**	**0.0000**	**131.6601**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0414	0.0000	0.0414	0.0225	0.0000	0.0225	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0414**	**0.0102**	**0.0516**	**0.0225**	**9.4000e-003**	**0.0319**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0136	0.4680	0.0928	1.3600e-003	0.0296	1.4800e-003	0.0311	8.1400e-003	1.4100e-003	9.5600e-003	0.0000	130.9122	130.9122	5.7400e-003	0.0000	131.0558
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	2.0600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6040	0.6040	1.0000e-005	0.0000	0.6044
Total	**0.0139**	**0.4682**	**0.0948**	**1.3700e-003**	**0.0303**	**1.4800e-003**	**0.0318**	**8.3300e-003**	**1.4100e-003**	**9.7500e-003**	**0.0000**	**131.5162**	**131.5162**	**5.7500e-003**	**0.0000**	**131.6601**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1324	0.0000	0.1324	0.0543	0.0000	0.0543	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7425	81.7425	0.0264	0.0000	82.4034
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.1324**	**0.0298**	**0.1621**	**0.0543**	**0.0274**	**0.0817**	**0.0000**	**81.7425**	**81.7425**	**0.0264**	**0.0000**	**82.4034**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0194	0.6693	0.1327	1.9400e-003	0.0424	2.1100e-003	0.0445	0.0116	2.0200e-003	0.0137	0.0000	187.2314	187.2314	8.2100e-003	0.0000	187.4367
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	6.5000e-004	6.8700e-003	2.0000e-005	2.3800e-003	2.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	2.0134	2.0134	5.0000e-005	0.0000	2.0145
Total	**0.0204**	**0.6700**	**0.1395**	**1.9600e-003**	**0.0447**	**2.1300e-003**	**0.0469**	**0.0123**	**2.0300e-003**	**0.0143**	**0.0000**	**189.2448**	**189.2448**	**8.2600e-003**	**0.0000**	**189.4512**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0596	0.0000	0.0596	0.0244	0.0000	0.0244	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7424	81.7424	0.0264	0.0000	82.4033
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.0596**	**0.0298**	**0.0893**	**0.0244**	**0.0274**	**0.0518**	**0.0000**	**81.7424**	**81.7424**	**0.0264**	**0.0000**	**82.4033**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0194	0.6693	0.1327	1.9400e-003	0.0424	2.1100e-003	0.0445	0.0116	2.0200e-003	0.0137	0.0000	187.2314	187.2314	8.2100e-003	0.0000	187.4367
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	6.5000e-004	6.8700e-003	2.0000e-005	2.3800e-003	2.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.5000e-004	0.0000	2.0134	2.0134	5.0000e-005	0.0000	2.0145
Total	**0.0204**	**0.6700**	**0.1395**	**1.9600e-003**	**0.0447**	**2.1300e-003**	**0.0469**	**0.0123**	**2.0300e-003**	**0.0143**	**0.0000**	**189.2448**	**189.2448**	**8.2600e-003**	**0.0000**	**189.4512**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7000e-003	0.0523	0.0497	8.0000e-005		2.8800e-003	2.8800e-003		2.7000e-003	2.7000e-003	0.0000	6.9491	6.9491	1.6800e-003	0.0000	6.9910
Total	**5.7000e-003**	**0.0523**	**0.0497**	**8.0000e-005**		**2.8800e-003**	**2.8800e-003**		**2.7000e-003**	**2.7000e-003**	**0.0000**	**6.9491**	**6.9491**	**1.6800e-003**	**0.0000**	**6.9910**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7000e-004	0.0149	3.7800e-003	4.0000e-005	9.5000e-004	3.0000e-005	9.8000e-004	2.7000e-004	3.0000e-005	3.1000e-004	0.0000	3.7225	3.7225	1.7000e-004	0.0000	3.7268
Worker	1.1700e-003	8.2000e-004	8.6600e-003	3.0000e-005	3.0000e-003	2.0000e-005	3.0200e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.5369	2.5369	6.0000e-005	0.0000	2.5383
Total	**1.6400e-003**	**0.0157**	**0.0124**	**7.0000e-005**	**3.9500e-003**	**5.0000e-005**	**4.0000e-003**	**1.0700e-003**	**5.0000e-005**	**1.1300e-003**	**0.0000**	**6.2593**	**6.2593**	**2.3000e-004**	**0.0000**	**6.2651**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7000e-003	0.0523	0.0497	8.0000e-005		2.8800e-003	2.8800e-003		2.7000e-003	2.7000e-003	0.0000	6.9491	6.9491	1.6800e-003	0.0000	6.9910
Total	**5.7000e-003**	**0.0523**	**0.0497**	**8.0000e-005**		**2.8800e-003**	**2.8800e-003**		**2.7000e-003**	**2.7000e-003**	**0.0000**	**6.9491**	**6.9491**	**1.6800e-003**	**0.0000**	**6.9910**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7000e-004	0.0149	3.7800e-003	4.0000e-005	9.5000e-004	3.0000e-005	9.8000e-004	2.7000e-004	3.0000e-005	3.1000e-004	0.0000	3.7225	3.7225	1.7000e-004	0.0000	3.7268
Worker	1.1700e-003	8.2000e-004	8.6600e-003	3.0000e-005	3.0000e-003	2.0000e-005	3.0200e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.5369	2.5369	6.0000e-005	0.0000	2.5383
Total	**1.6400e-003**	**0.0157**	**0.0124**	**7.0000e-005**	**3.9500e-003**	**5.0000e-005**	**4.0000e-003**	**1.0700e-003**	**5.0000e-005**	**1.1300e-003**	**0.0000**	**6.2593**	**6.2593**	**2.3000e-004**	**0.0000**	**6.2651**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1868	1.7099	1.7918	2.9500e-003		0.0886	0.0886		0.0834	0.0834	0.0000	253.7391	253.7391	0.0608	0.0000	255.2589
Total	**0.1868**	**1.7099**	**1.7918**	**2.9500e-003**		**0.0886**	**0.0886**		**0.0834**	**0.0834**	**0.0000**	**253.7391**	**253.7391**	**0.0608**	**0.0000**	**255.2589**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0160	0.5132	0.1294	1.4100e-003	0.0346	1.0600e-003	0.0356	9.9900e-003	1.0100e-003	0.0110	0.0000	134.5826	134.5826	5.9800e-003	0.0000	134.7321
Worker	0.0397	0.0268	0.2903	9.9000e-004	0.1094	6.9000e-004	0.1101	0.0291	6.4000e-004	0.0297	0.0000	89.1570	89.1570	1.8900e-003	0.0000	89.2042
Total	**0.0558**	**0.5399**	**0.4197**	**2.4000e-003**	**0.1440**	**1.7500e-003**	**0.1458**	**0.0391**	**1.6500e-003**	**0.0407**	**0.0000**	**223.7396**	**223.7396**	**7.8700e-003**	**0.0000**	**223.9363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1868	1.7099	1.7918	2.9500e-003		0.0886	0.0886		0.0834	0.0834	0.0000	253.7388	253.7388	0.0608	0.0000	255.2586
Total	**0.1868**	**1.7099**	**1.7918**	**2.9500e-003**		**0.0886**	**0.0886**		**0.0834**	**0.0834**	**0.0000**	**253.7388**	**253.7388**	**0.0608**	**0.0000**	**255.2586**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0160	0.5132	0.1294	1.4100e-003	0.0346	1.0600e-003	0.0356	9.9900e-003	1.0100e-003	0.0110	0.0000	134.5826	134.5826	5.9800e-003	0.0000	134.7321
Worker	0.0397	0.0268	0.2903	9.9000e-004	0.1094	6.9000e-004	0.1101	0.0291	6.4000e-004	0.0297	0.0000	89.1570	89.1570	1.8900e-003	0.0000	89.2042
Total	**0.0558**	**0.5399**	**0.4197**	**2.4000e-003**	**0.1440**	**1.7500e-003**	**0.1458**	**0.0391**	**1.6500e-003**	**0.0407**	**0.0000**	**223.7396**	**223.7396**	**7.8700e-003**	**0.0000**	**223.9363**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7198					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0118	0.0810	0.1043	1.7000e-004		4.7000e-003	4.7000e-003		4.7000e-003	4.7000e-003	0.0000	14.6812	14.6812	9.6000e-004	0.0000	14.7051
Total	**0.7316**	**0.0810**	**0.1043**	**1.7000e-004**		**4.7000e-003**	**4.7000e-003**		**4.7000e-003**	**4.7000e-003**	**0.0000**	**14.6812**	**14.6812**	**9.6000e-004**	**0.0000**	**14.7051**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1400e-003	2.7900e-003	0.0302	1.0000e-004	0.0114	7.0000e-005	0.0115	3.0300e-003	7.0000e-005	3.1000e-003	0.0000	9.2892	9.2892	2.0000e-004	0.0000	9.2941
Total	**4.1400e-003**	**2.7900e-003**	**0.0302**	**1.0000e-004**	**0.0114**	**7.0000e-005**	**0.0115**	**3.0300e-003**	**7.0000e-005**	**3.1000e-003**	**0.0000**	**9.2892**	**9.2892**	**2.0000e-004**	**0.0000**	**9.2941**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7198					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0118	0.0810	0.1043	1.7000e-004		4.7000e-003	4.7000e-003		4.7000e-003	4.7000e-003	0.0000	14.6812	14.6812	9.6000e-004	0.0000	14.7051
Total	**0.7316**	**0.0810**	**0.1043**	**1.7000e-004**		**4.7000e-003**	**4.7000e-003**		**4.7000e-003**	**4.7000e-003**	**0.0000**	**14.6812**	**14.6812**	**9.6000e-004**	**0.0000**	**14.7051**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1400e-003	2.7900e-003	0.0302	1.0000e-004	0.0114	7.0000e-005	0.0115	3.0300e-003	7.0000e-005	3.1000e-003	0.0000	9.2892	9.2892	2.0000e-004	0.0000	9.2941
Total	**4.1400e-003**	**2.7900e-003**	**0.0302**	**1.0000e-004**	**0.0114**	**7.0000e-005**	**0.0115**	**3.0300e-003**	**7.0000e-005**	**3.1000e-003**	**0.0000**	**9.2892**	**9.2892**	**2.0000e-004**	**0.0000**	**9.2941**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	6.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0178**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0276**	**20.0276**	**6.4800e-003**	**0.0000**	**20.1895**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	2.9000e-004	3.1600e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9693	0.9693	2.0000e-005	0.0000	0.9698
Total	**4.3000e-004**	**2.9000e-004**	**3.1600e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9693**	**0.9693**	**2.0000e-005**	**0.0000**	**0.9698**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	6.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0178**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0275**	**20.0275**	**6.4800e-003**	**0.0000**	**20.1895**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	2.9000e-004	3.1600e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9693	0.9693	2.0000e-005	0.0000	0.9698
Total	**4.3000e-004**	**2.9000e-004**	**3.1600e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9693**	**0.9693**	**2.0000e-005**	**0.0000**	**0.9698**

Richmond Country Club Phase 1 - Construction

Contra Costa County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	162.00	1000sqft	3.72	162,000.00	0
Other Asphalt Surfaces	63.00	1000sqft	1.45	63,000.00	0
Other Non-Asphalt Surfaces	7.49	Acre	7.49	0.00	0
Other Non-Asphalt Surfaces	23.88	1000sqft	0.55	23,878.00	0
Other Non-Asphalt Surfaces	7.95	1000sqft	0.18	7,950.00	0
Single Family Housing	51.00	Dwelling Unit	5.85	94,645.00	146

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1.

Land Use - Please see CalEEMod Note 2.

Construction Phase - Please see CalEEMod Note 3.

Demolition - Please see CalEEMod Note 5.

Grading - Please see CalEEMod Note 4.

Construction Off-road Equipment Mitigation - Please see CalEEMod Note 6.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	300.00	225.00
tblConstructionPhase	NumDays	20.00	115.00
tblConstructionPhase	PhaseEndDate	2/16/2023	11/3/2022
tblConstructionPhase	PhaseEndDate	4/13/2023	12/1/2022
tblConstructionPhase	PhaseEndDate	3/16/2023	12/1/2022
tblConstructionPhase	PhaseStartDate	3/17/2023	6/24/2022
tblConstructionPhase	PhaseStartDate	2/17/2023	11/4/2022
tblGrading	MaterialExported	0.00	40,000.00
tblGrading	MaterialExported	0.00	27,966.00
tblLandUse	LandUseSquareFeet	23,880.00	23,878.00
tblLandUse	LandUseSquareFeet	326,264.40	0.00
tblLandUse	LandUseSquareFeet	91,800.00	94,645.00
tblLandUse	LotAcreage	16.56	5.85
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	6.6334	132.3767	39.9460	0.3128	24.6371	2.3390	26.9760	11.6911	2.1626	13.8538	0.0000	32,902.3203	32,902.3203	2.5343	0.0000	32,963.0300
2022	15.0434	21.9276	22.8524	0.0546	1.5653	0.9078	2.4732	0.4226	0.8590	1.2815	0.0000	5,377.8818	5,377.8818	0.7389	0.0000	5,395.7053
Maximum	**15.0434**	**132.3767**	**39.9460**	**0.3128**	**24.6371**	**2.3390**	**26.9760**	**11.6911**	**2.1626**	**13.8538**	**0.0000**	**32,902.3203**	**32,902.3203**	**2.5343**	**0.0000**	**32,963.0300**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	6.6334	132.3767	39.9460	0.3128	14.5267	2.3390	16.8656	6.2029	2.1626	8.3655	0.0000	32,902.3203	32,902.3203	2.5343	0.0000	32,963.0300
2022	15.0434	21.9276	22.8524	0.0546	1.5653	0.9078	2.4732	0.4226	0.8590	1.2815	0.0000	5,377.8818	5,377.8818	0.7389	0.0000	5,395.7053
Maximum	**15.0434**	**132.3767**	**39.9460**	**0.3128**	**14.5267**	**2.3390**	**16.8656**	**6.2029**	**2.1626**	**8.3655**	**0.0000**	**32,902.3203**	**32,902.3203**	**2.5343**	**0.0000**	**32,963.0300**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**38.59**	**0.00**	**34.33**	**45.31**	**0.00**	**36.26**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2021	10/28/2021	5	20	
2	Site Preparation	Site Preparation	10/29/2021	11/11/2021	5	10	
3	Grading	Grading	11/12/2021	12/23/2021	5	30	
4	Building Construction	Building Construction	12/24/2021	11/3/2022	5	225	
5	Architectural Coating	Architectural Coating	6/24/2022	12/1/2022	5	115	
6	Paving	Paving	11/4/2022	12/1/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 13.39

Residential Indoor: 191,656; Residential Outdoor: 63,885; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	26.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	3,496.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	5,000.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	126.00	48.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2771	0.0000	0.2771	0.0420	0.0000	0.0420			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.2771**	**1.5513**	**1.8285**	**0.0420**	**1.4411**	**1.4831**		**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9800e-003	0.3415	0.0667	1.0200e-003	0.0227	1.0900e-003	0.0238	6.2200e-003	1.0400e-003	7.2700e-003		108.1034	108.1034	4.5900e-003		108.2181
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0291	0.3853	1.2100e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		120.9656	120.9656	2.7400e-003		121.0342
Total	**0.0604**	**0.3706**	**0.4521**	**2.2300e-003**	**0.1459**	**1.8600e-003**	**0.1478**	**0.0389**	**1.7500e-003**	**0.0407**		**229.0690**	**229.0690**	**7.3300e-003**		**229.2522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1247	0.0000	0.1247	0.0189	0.0000	0.0189			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.1247**	**1.5513**	**1.6760**	**0.0189**	**1.4411**	**1.4600**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9800e-003	0.3415	0.0667	1.0200e-003	0.0227	1.0900e-003	0.0238	6.2200e-003	1.0400e-003	7.2700e-003		108.1034	108.1034	4.5900e-003		108.2181
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0504	0.0291	0.3853	1.2100e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		120.9656	120.9656	2.7400e-003		121.0342
Total	**0.0604**	**0.3706**	**0.4521**	**2.2300e-003**	**0.1459**	**1.8600e-003**	**0.1478**	**0.0389**	**1.7500e-003**	**0.0407**		**229.0690**	**229.0690**	**7.3300e-003**		**229.2522**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.3825	0.0000	18.3825	9.9786	0.0000	9.9786			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.3825**	**2.0445**	**20.4270**	**9.9786**	**1.8809**	**11.8595**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.6848	91.8447	17.9425	0.2733	6.1067	0.2936	6.4002	1.6733	0.2809	1.9542		29,071.5048	29,071.5048	1.2331		29,102.3318
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0604	0.0349	0.4624	1.4600e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		145.1587	145.1587	3.2900e-003		145.2410
Total	**2.7452**	**91.8796**	**18.4049**	**0.2748**	**6.2546**	**0.2945**	**6.5490**	**1.7126**	**0.2817**	**1.9943**		**29,216.6635**	**29,216.6635**	**1.2364**		**29,247.5727**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.2721	0.0000	8.2721	4.4904	0.0000	4.4904			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**8.2721**	**2.0445**	**10.3166**	**4.4904**	**1.8809**	**6.3713**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.6848	91.8447	17.9425	0.2733	6.1067	0.2936	6.4002	1.6733	0.2809	1.9542		29,071.5048	29,071.5048	1.2331		29,102.3318
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0604	0.0349	0.4624	1.4600e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		145.1587	145.1587	3.2900e-003		145.2410
Total	**2.7452**	**91.8796**	**18.4049**	**0.2748**	**6.2546**	**0.2945**	**6.5490**	**1.7126**	**0.2817**	**1.9943**		**29,216.6635**	**29,216.6635**	**1.2364**		**29,247.5727**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8241	0.0000	8.8241	3.6193	0.0000	3.6193			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.8241**	**1.9853**	**10.8095**	**3.6193**	**1.8265**	**5.4458**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2799	43.7856	8.5538	0.1303	2.9113	0.1400	3.0512	0.7977	0.1339	0.9316		13,859.4130	13,859.4130	0.5879		13,874.1093
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0388	0.5138	1.6200e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		161.2874	161.2874	3.6600e-003		161.3789
Total	**1.3471**	**43.8244**	**9.0676**	**0.1319**	**3.0756**	**0.1410**	**3.2166**	**0.8413**	**0.1348**	**0.9762**		**14,020.7004**	**14,020.7004**	**0.5915**		**14,035.4882**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9709	0.0000	3.9709	1.6287	0.0000	1.6287			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.9709**	**1.9853**	**5.9562**	**1.6287**	**1.8265**	**3.4552**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2799	43.7856	8.5538	0.1303	2.9113	0.1400	3.0512	0.7977	0.1339	0.9316		13,859.4130	13,859.4130	0.5879		13,874.1093
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0388	0.5138	1.6200e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		161.2874	161.2874	3.6600e-003		161.3789
Total	**1.3471**	**43.8244**	**9.0676**	**0.1319**	**3.0756**	**0.1410**	**3.2166**	**0.8413**	**0.1348**	**0.9762**		**14,020.7004**	**14,020.7004**	**0.5915**		**14,035.4882**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1536	4.9099	1.1757	0.0131	0.3249	0.0110	0.3359	0.0935	0.0105	0.1040		1,382.6478	1,382.6478	0.0610		1,384.1734
Worker	0.4231	0.2442	3.2368	0.0102	1.0351	6.4900e-003	1.0416	0.2746	5.9800e-003	0.2805		1,016.1106	1,016.1106	0.0231		1,016.6869
Total	**0.5767**	**5.1541**	**4.4125**	**0.0233**	**1.3600**	**0.0175**	**1.3774**	**0.3681**	**0.0165**	**0.3845**		**2,398.7584**	**2,398.7584**	**0.0841**		**2,400.8602**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1536	4.9099	1.1757	0.0131	0.3249	0.0110	0.3359	0.0935	0.0105	0.1040		1,382.6478	1,382.6478	0.0610		1,384.1734
Worker	0.4231	0.2442	3.2368	0.0102	1.0351	6.4900e-003	1.0416	0.2746	5.9800e-003	0.2805		1,016.1106	1,016.1106	0.0231		1,016.6869
Total	**0.5767**	**5.1541**	**4.4125**	**0.0233**	**1.3600**	**0.0175**	**1.3774**	**0.3681**	**0.0165**	**0.3845**		**2,398.7584**	**2,398.7584**	**0.0841**		**2,400.8602**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1433	4.6411	1.1024	0.0130	0.3249	9.5100e-003	0.3344	0.0935	9.1000e-003	0.1026		1,369.6359	1,369.6359	0.0579		1,371.0827
Worker	0.3929	0.2190	2.9814	9.8100e-003	1.0351	6.3400e-003	1.0414	0.2746	5.8400e-003	0.2804		978.3477	978.3477	0.0207		978.8650
Total	**0.5362**	**4.8600**	**4.0839**	**0.0228**	**1.3600**	**0.0159**	**1.3758**	**0.3681**	**0.0149**	**0.3830**		**2,347.9836**	**2,347.9836**	**0.0786**		**2,349.9477**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1433	4.6411	1.1024	0.0130	0.3249	9.5100e-003	0.3344	0.0935	9.1000e-003	0.1026		1,369.6359	1,369.6359	0.0579		1,371.0827
Worker	0.3929	0.2190	2.9814	9.8100e-003	1.0351	6.3400e-003	1.0414	0.2746	5.8400e-003	0.2804		978.3477	978.3477	0.0207		978.8650
Total	**0.5362**	**4.8600**	**4.0839**	**0.0228**	**1.3600**	**0.0159**	**1.3758**	**0.3681**	**0.0149**	**0.3830**		**2,347.9836**	**2,347.9836**	**0.0786**		**2,349.9477**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.5185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**12.7230**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0780	0.0434	0.5916	1.9500e-003	0.2054	1.2600e-003	0.2066	0.0545	1.1600e-003	0.0556		194.1166	194.1166	4.1100e-003		194.2193
Total	**0.0780**	**0.0434**	**0.5916**	**1.9500e-003**	**0.2054**	**1.2600e-003**	**0.2066**	**0.0545**	**1.1600e-003**	**0.0556**		**194.1166**	**194.1166**	**4.1100e-003**		**194.2193**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.5185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**12.7230**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0780	0.0434	0.5916	1.9500e-003	0.2054	1.2600e-003	0.2066	0.0545	1.1600e-003	0.0556		194.1166	194.1166	4.1100e-003		194.2193
Total	**0.0780**	**0.0434**	**0.5916**	**1.9500e-003**	**0.2054**	**1.2600e-003**	**0.2066**	**0.0545**	**1.1600e-003**	**0.0556**		**194.1166**	**194.1166**	**4.1100e-003**		**194.2193**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.6773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7801**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0468	0.0261	0.3549	1.1700e-003	0.1232	7.5000e-004	0.1240	0.0327	7.0000e-004	0.0334		116.4700	116.4700	2.4600e-003		116.5316
Total	**0.0468**	**0.0261**	**0.3549**	**1.1700e-003**	**0.1232**	**7.5000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**116.4700**	**116.4700**	**2.4600e-003**		**116.5316**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.6773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7801**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0468	0.0261	0.3549	1.1700e-003	0.1232	7.5000e-004	0.1240	0.0327	7.0000e-004	0.0334		116.4700	116.4700	2.4600e-003		116.5316
Total	**0.0468**	**0.0261**	**0.3549**	**1.1700e-003**	**0.1232**	**7.5000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**116.4700**	**116.4700**	**2.4600e-003**		**116.5316**

Richmond Country Club Phase 1 - Construction

Contra Costa County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	162.00	1000sqft	3.72	162,000.00	0
Other Asphalt Surfaces	63.00	1000sqft	1.45	63,000.00	0
Other Non-Asphalt Surfaces	7.49	Acre	7.49	0.00	0
Other Non-Asphalt Surfaces	23.88	1000sqft	0.55	23,878.00	0
Other Non-Asphalt Surfaces	7.95	1000sqft	0.18	7,950.00	0
Single Family Housing	51.00	Dwelling Unit	5.85	94,645.00	146

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1.

Land Use - Please see CalEEMod Note 2.

Construction Phase - Please see CalEEMod Note 3.

Demolition - Please see CalEEMod Note 5.

Grading - Please see CalEEMod Note 4.

Construction Off-road Equipment Mitigation - Please see CalEEMod Note 6.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	300.00	225.00
tblConstructionPhase	NumDays	20.00	115.00
tblConstructionPhase	PhaseEndDate	2/16/2023	11/3/2022
tblConstructionPhase	PhaseEndDate	4/13/2023	12/1/2022
tblConstructionPhase	PhaseEndDate	3/16/2023	12/1/2022
tblConstructionPhase	PhaseStartDate	3/17/2023	6/24/2022
tblConstructionPhase	PhaseStartDate	2/17/2023	11/4/2022
tblGrading	MaterialExported	0.00	40,000.00
tblGrading	MaterialExported	0.00	27,966.00
tblLandUse	LandUseSquareFeet	23,880.00	23,878.00
tblLandUse	LandUseSquareFeet	326,264.40	0.00
tblLandUse	LandUseSquareFeet	91,800.00	94,645.00
tblLandUse	LotAcreage	16.56	5.85
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	6.7095	134.4277	40.9667	0.3079	24.6371	2.3441	26.9812	11.6911	2.1675	13.8587	0.0000	32,387.9634	32,387.9634	2.5699	0.0000	32,450.5476
2022	15.0594	22.0229	22.6997	0.0532	1.5653	0.9082	2.4735	0.4226	0.8593	1.2818	0.0000	5,232.4740	5,232.4740	0.7383	0.0000	5,250.3770
Maximum	**15.0594**	**134.4277**	**40.9667**	**0.3079**	**24.6371**	**2.3441**	**26.9812**	**11.6911**	**2.1675**	**13.8587**	**0.0000**	**32,387.9634**	**32,387.9634**	**2.5699**	**0.0000**	**32,450.5476**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	6.7095	134.4277	40.9667	0.3079	14.5267	2.3441	16.8708	6.2029	2.1675	8.3705	0.0000	32,387.9634	32,387.9634	2.5699	0.0000	32,450.5476
2022	15.0594	22.0229	22.6997	0.0532	1.5653	0.9082	2.4735	0.4226	0.8593	1.2818	0.0000	5,232.4740	5,232.4740	0.7383	0.0000	5,250.3770
Maximum	**15.0594**	**134.4277**	**40.9667**	**0.3079**	**14.5267**	**2.3441**	**16.8708**	**6.2029**	**2.1675**	**8.3705**	**0.0000**	**32,387.9634**	**32,387.9634**	**2.5699**	**0.0000**	**32,450.5476**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**38.59**	**0.00**	**34.33**	**45.31**	**0.00**	**36.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2021	10/28/2021	5	20	
2	Site Preparation	Site Preparation	10/29/2021	11/11/2021	5	10	
3	Grading	Grading	11/12/2021	12/23/2021	5	30	
4	Building Construction	Building Construction	12/24/2021	11/3/2022	5	225	
5	Architectural Coating	Architectural Coating	6/24/2022	12/1/2022	5	115	
6	Paving	Paving	11/4/2022	12/1/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 13.39

Residential Indoor: 191,656; Residential Outdoor: 63,885; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	26.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	3,496.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	5,000.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	126.00	48.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2771	0.0000	0.2771	0.0420	0.0000	0.0420			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.2771**	**1.5513**	**1.8285**	**0.0420**	**1.4411**	**1.4831**		**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0103	0.3491	0.0721	1.0000e-003	0.0227	1.1100e-003	0.0238	6.2200e-003	1.0600e-003	7.2900e-003		106.2415	106.2415	4.8700e-003		106.3631
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0358	0.3517	1.1000e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.5983	109.5983	2.5200e-003		109.6612
Total	**0.0613**	**0.3850**	**0.4238**	**2.1000e-003**	**0.1459**	**1.8800e-003**	**0.1478**	**0.0389**	**1.7700e-003**	**0.0407**		**215.8398**	**215.8398**	**7.3900e-003**		**216.0243**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1247	0.0000	0.1247	0.0189	0.0000	0.0189			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**0.1247**	**1.5513**	**1.6760**	**0.0189**	**1.4411**	**1.4600**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0103	0.3491	0.0721	1.0000e-003	0.0227	1.1100e-003	0.0238	6.2200e-003	1.0600e-003	7.2900e-003		106.2415	106.2415	4.8700e-003		106.3631
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0358	0.3517	1.1000e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.5983	109.5983	2.5200e-003		109.6612
Total	**0.0613**	**0.3850**	**0.4238**	**2.1000e-003**	**0.1459**	**1.8800e-003**	**0.1478**	**0.0389**	**1.7700e-003**	**0.0407**		**215.8398**	**215.8398**	**7.3900e-003**		**216.0243**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.3825	0.0000	18.3825	9.9786	0.0000	9.9786			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.3825**	**2.0445**	**20.4270**	**9.9786**	**1.8809**	**11.8595**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.7600	93.8876	19.3904	0.2686	6.1067	0.2987	6.4054	1.6733	0.2858	1.9591		28,570.7885	28,570.7885	1.3083		28,603.4968
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0613	0.0430	0.4221	1.3200e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		131.5180	131.5180	3.0200e-003		131.5935
Total	**2.8213**	**93.9306**	**19.8125**	**0.2699**	**6.2546**	**0.2996**	**6.5542**	**1.7126**	**0.2866**	**1.9992**		**28,702.3065**	**28,702.3065**	**1.3114**		**28,735.0903**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.2721	0.0000	8.2721	4.4904	0.0000	4.4904			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**8.2721**	**2.0445**	**10.3166**	**4.4904**	**1.8809**	**6.3713**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.7600	93.8876	19.3904	0.2686	6.1067	0.2987	6.4054	1.6733	0.2858	1.9591		28,570.7885	28,570.7885	1.3083		28,603.4968
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0613	0.0430	0.4221	1.3200e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		131.5180	131.5180	3.0200e-003		131.5935
Total	**2.8213**	**93.9306**	**19.8125**	**0.2699**	**6.2546**	**0.2996**	**6.5542**	**1.7126**	**0.2866**	**1.9992**		**28,702.3065**	**28,702.3065**	**1.3114**		**28,735.0903**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8241	0.0000	8.8241	3.6193	0.0000	3.6193			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.8241**	**1.9853**	**10.8095**	**3.6193**	**1.8265**	**5.4458**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3158	44.7595	9.2441	0.1281	2.9113	0.1424	3.0537	0.7977	0.1362	0.9340		13,620.7039	13,620.7039	0.6237		13,636.2971
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0681	0.0478	0.4690	1.4700e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		146.1311	146.1311	3.3500e-003		146.2150
Total	**1.3839**	**44.8073**	**9.7131**	**0.1295**	**3.0756**	**0.1434**	**3.2190**	**0.8413**	**0.1372**	**0.9785**		**13,766.8350**	**13,766.8350**	**0.6271**		**13,782.5121**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9709	0.0000	3.9709	1.6287	0.0000	1.6287			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.9709**	**1.9853**	**5.9562**	**1.6287**	**1.8265**	**3.4552**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3158	44.7595	9.2441	0.1281	2.9113	0.1424	3.0537	0.7977	0.1362	0.9340		13,620.7039	13,620.7039	0.6237		13,636.2971
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0681	0.0478	0.4690	1.4700e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		146.1311	146.1311	3.3500e-003		146.2150
Total	**1.3839**	**44.8073**	**9.7131**	**0.1295**	**3.0756**	**0.1434**	**3.2190**	**0.8413**	**0.1372**	**0.9785**		**13,766.8350**	**13,766.8350**	**0.6271**		**13,782.5121**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1629	4.9516	1.3594	0.0128	0.3249	0.0113	0.3362	0.0935	0.0108	0.1044		1,347.2490	1,347.2490	0.0667		1,348.9151
Worker	0.4290	0.3011	2.9545	9.2400e-003	1.0351	6.4900e-003	1.0416	0.2746	5.9800e-003	0.2805		920.6260	920.6260	0.0211		921.1543
Total	**0.5919**	**5.2527**	**4.3139**	**0.0220**	**1.3600**	**0.0178**	**1.3778**	**0.3681**	**0.0168**	**0.3849**		**2,267.8750**	**2,267.8750**	**0.0878**		**2,270.0694**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1629	4.9516	1.3594	0.0128	0.3249	0.0113	0.3362	0.0935	0.0108	0.1044		1,347.2490	1,347.2490	0.0667		1,348.9151
Worker	0.4290	0.3011	2.9545	9.2400e-003	1.0351	6.4900e-003	1.0416	0.2746	5.9800e-003	0.2805		920.6260	920.6260	0.0211		921.1543
Total	**0.5919**	**5.2527**	**4.3139**	**0.0220**	**1.3600**	**0.0178**	**1.3778**	**0.3681**	**0.0168**	**0.3849**		**2,267.8750**	**2,267.8750**	**0.0878**		**2,270.0694**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1519	4.6754	1.2750	0.0127	0.3249	9.8500e-003	0.3348	0.0935	9.4200e-003	0.1029		1,334.3606	1,334.3606	0.0632		1,335.9401
Worker	0.3991	0.2698	2.7100	8.8900e-003	1.0351	6.3400e-003	1.0414	0.2746	5.8400e-003	0.2804		886.4490	886.4490	0.0189		886.9219
Total	**0.5510**	**4.9452**	**3.9850**	**0.0215**	**1.3600**	**0.0162**	**1.3762**	**0.3681**	**0.0153**	**0.3833**		**2,220.8096**	**2,220.8096**	**0.0821**		**2,222.8620**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1519	4.6754	1.2750	0.0127	0.3249	9.8500e-003	0.3348	0.0935	9.4200e-003	0.1029		1,334.3606	1,334.3606	0.0632		1,335.9401
Worker	0.3991	0.2698	2.7100	8.8900e-003	1.0351	6.3400e-003	1.0414	0.2746	5.8400e-003	0.2804		886.4490	886.4490	0.0189		886.9219
Total	**0.5510**	**4.9452**	**3.9850**	**0.0215**	**1.3600**	**0.0162**	**1.3762**	**0.3681**	**0.0153**	**0.3833**		**2,220.8096**	**2,220.8096**	**0.0821**		**2,222.8620**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.5185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**12.7230**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0792	0.0535	0.5377	1.7600e-003	0.2054	1.2600e-003	0.2066	0.0545	1.1600e-003	0.0556		175.8827	175.8827	3.7500e-003		175.9766
Total	**0.0792**	**0.0535**	**0.5377**	**1.7600e-003**	**0.2054**	**1.2600e-003**	**0.2066**	**0.0545**	**1.1600e-003**	**0.0556**		**175.8827**	**175.8827**	**3.7500e-003**		**175.9766**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.5185					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**12.7230**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0792	0.0535	0.5377	1.7600e-003	0.2054	1.2600e-003	0.2066	0.0545	1.1600e-003	0.0556		175.8827	175.8827	3.7500e-003		175.9766
Total	**0.0792**	**0.0535**	**0.5377**	**1.7600e-003**	**0.2054**	**1.2600e-003**	**0.2066**	**0.0545**	**1.1600e-003**	**0.0556**		**175.8827**	**175.8827**	**3.7500e-003**		**175.9766**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.6773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7801**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0321	0.3226	1.0600e-003	0.1232	7.5000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.5296	105.5296	2.2500e-003		105.5859
Total	**0.0475**	**0.0321**	**0.3226**	**1.0600e-003**	**0.1232**	**7.5000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**105.5296**	**105.5296**	**2.2500e-003**		**105.5859**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.6773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7801**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0321	0.3226	1.0600e-003	0.1232	7.5000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.5296	105.5296	2.2500e-003		105.5859
Total	**0.0475**	**0.0321**	**0.3226**	**1.0600e-003**	**0.1232**	**7.5000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**105.5296**	**105.5296**	**2.2500e-003**		**105.5859**

Richmond Country Club Phase 2 - Construction

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	51.00	Dwelling Unit	5.85	94,645.00	145

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1.

Land Use - Please see CalEEMod Note 2.

Construction Phase - Please see CalEEMod Note 7.

Construction Off-road Equipment Mitigation - Please see CalEEMod Note 6.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	115.00
tblConstructionPhase	NumDays	230.00	210.00
tblConstructionPhase	PhaseEndDate	12/14/2023	10/19/2023
tblConstructionPhase	PhaseEndDate	10/19/2023	9/21/2023
tblConstructionPhase	PhaseEndDate	11/16/2023	10/19/2023
tblConstructionPhase	PhaseStartDate	11/17/2023	5/12/2023
tblConstructionPhase	PhaseStartDate	10/20/2023	9/22/2023
tblLandUse	LandUseSquareFeet	91,800.00	94,645.00
tblLandUse	LotAcreage	16.56	5.85
tblLandUse	Population	146.00	145.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0186	0.1695	0.1771	3.1000e-004	1.8400e-003	8.5100e-003	0.0104	5.0000e-004	8.0100e-003	8.5100e-003	0.0000	26.8968	26.8968	5.9100e-003	0.0000	27.0446
2023	0.8429	1.5750	1.8357	3.2100e-003	0.0196	0.0754	0.0951	5.2900e-003	0.0711	0.0764	0.0000	278.4505	278.4505	0.0602	0.0000	279.9546
Maximum	**0.8429**	**1.5750**	**1.8357**	**3.2100e-003**	**0.0196**	**0.0754**	**0.0951**	**5.2900e-003**	**0.0711**	**0.0764**	**0.0000**	**278.4505**	**278.4505**	**0.0602**	**0.0000**	**279.9546**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0186	0.1695	0.1771	3.1000e-004	1.8400e-003	8.5100e-003	0.0104	5.0000e-004	8.0100e-003	8.5100e-003	0.0000	26.8967	26.8967	5.9100e-003	0.0000	27.0446
2023	0.8429	1.5750	1.8357	3.2100e-003	0.0196	0.0754	0.0951	5.2900e-003	0.0711	0.0764	0.0000	278.4502	278.4502	0.0602	0.0000	279.9543
Maximum	**0.8429**	**1.5750**	**1.8357**	**3.2100e-003**	**0.0196**	**0.0754**	**0.0951**	**5.2900e-003**	**0.0711**	**0.0764**	**0.0000**	**278.4502**	**278.4502**	**0.0602**	**0.0000**	**279.9543**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-2-2022**	**3-1-2023**	0.5440	0.5440
2	**3-2-2023**	**6-1-2023**	0.6378	0.6378
3	**6-2-2023**	**9-1-2023**	0.9699	0.9699
4	**9-2-2023**	**9-30-2023**	0.2892	0.2892
		Highest	0.9699	0.9699

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	12/2/2022	9/21/2023	5	210	
2	Architectural Coating	Architectural Coating	5/12/2023	10/19/2023	5	115	
3	Paving	Paving	9/22/2023	10/19/2023	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 191,656; Residential Outdoor: 63,885; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	18.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0179	0.1640	0.1718	2.8000e-004		8.4900e-003	8.4900e-003		7.9900e-003	7.9900e-003	0.0000	24.3312	24.3312	5.8300e-003	0.0000	24.4769
Total	**0.0179**	**0.1640**	**0.1718**	**2.8000e-004**		**8.4900e-003**	**8.4900e-003**		**7.9900e-003**	**7.9900e-003**	**0.0000**	**24.3312**	**24.3312**	**5.8300e-003**	**0.0000**	**24.4769**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	5.1300e-003	1.2900e-003	1.0000e-005	3.5000e-004	1.0000e-005	3.6000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.3443	1.3443	6.0000e-005	0.0000	1.3458
Worker	5.4000e-004	3.7000e-004	3.9800e-003	1.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.2213	1.2213	3.0000e-005	0.0000	1.2220
Total	**7.0000e-004**	**5.5000e-003**	**5.2700e-003**	**2.0000e-005**	**1.8500e-003**	**2.0000e-005**	**1.8700e-003**	**5.0000e-004**	**2.0000e-005**	**5.2000e-004**	**0.0000**	**2.5656**	**2.5656**	**9.0000e-005**	**0.0000**	**2.5678**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0179	0.1640	0.1718	2.8000e-004		8.4900e-003	8.4900e-003		7.9900e-003	7.9900e-003	0.0000	24.3311	24.3311	5.8300e-003	0.0000	24.4769
Total	**0.0179**	**0.1640**	**0.1718**	**2.8000e-004**		**8.4900e-003**	**8.4900e-003**		**7.9900e-003**	**7.9900e-003**	**0.0000**	**24.3311**	**24.3311**	**5.8300e-003**	**0.0000**	**24.4769**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	5.1300e-003	1.2900e-003	1.0000e-005	3.5000e-004	1.0000e-005	3.6000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.3443	1.3443	6.0000e-005	0.0000	1.3458
Worker	5.4000e-004	3.7000e-004	3.9800e-003	1.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.2213	1.2213	3.0000e-005	0.0000	1.2220
Total	**7.0000e-004**	**5.5000e-003**	**5.2700e-003**	**2.0000e-005**	**1.8500e-003**	**2.0000e-005**	**1.8700e-003**	**5.0000e-004**	**2.0000e-005**	**5.2000e-004**	**0.0000**	**2.5656**	**2.5656**	**9.0000e-005**	**0.0000**	**2.5678**

3.2 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1486	1.3594	1.5351	2.5500e-003		0.0661	0.0661		0.0622	0.0622	0.0000	219.0555	219.0555	0.0521	0.0000	220.3582
Total	**0.1486**	**1.3594**	**1.5351**	**2.5500e-003**		**0.0661**	**0.0661**		**0.0622**	**0.0622**	**0.0000**	**219.0555**	**219.0555**	**0.0521**	**0.0000**	**220.3582**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0900e-003	0.0351	0.0104	1.2000e-004	3.1100e-003	4.0000e-005	3.1500e-003	9.0000e-004	4.0000e-005	9.4000e-004	0.0000	11.7618	11.7618	4.4000e-004	0.0000	11.7729
Worker	4.5600e-003	2.9600e-003	0.0329	1.2000e-004	0.0135	8.0000e-005	0.0136	3.5900e-003	8.0000e-005	3.6700e-003	0.0000	10.5650	10.5650	2.1000e-004	0.0000	10.5702
Total	**5.6500e-003**	**0.0381**	**0.0433**	**2.4000e-004**	**0.0166**	**1.2000e-004**	**0.0167**	**4.4900e-003**	**1.2000e-004**	**4.6100e-003**	**0.0000**	**22.3268**	**22.3268**	**6.5000e-004**	**0.0000**	**22.3431**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1486	1.3594	1.5351	2.5500e-003		0.0661	0.0661		0.0622	0.0622	0.0000	219.0552	219.0552	0.0521	0.0000	220.3580
Total	**0.1486**	**1.3594**	**1.5351**	**2.5500e-003**		**0.0661**	**0.0661**		**0.0622**	**0.0622**	**0.0000**	**219.0552**	**219.0552**	**0.0521**	**0.0000**	**220.3580**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0900e-003	0.0351	0.0104	1.2000e-004	3.1100e-003	4.0000e-005	3.1500e-003	9.0000e-004	4.0000e-005	9.4000e-004	0.0000	11.7618	11.7618	4.4000e-004	0.0000	11.7729
Worker	4.5600e-003	2.9600e-003	0.0329	1.2000e-004	0.0135	8.0000e-005	0.0136	3.5900e-003	8.0000e-005	3.6700e-003	0.0000	10.5650	10.5650	2.1000e-004	0.0000	10.5702
Total	**5.6500e-003**	**0.0381**	**0.0433**	**2.4000e-004**	**0.0166**	**1.2000e-004**	**0.0167**	**4.4900e-003**	**1.2000e-004**	**4.6100e-003**	**0.0000**	**22.3268**	**22.3268**	**6.5000e-004**	**0.0000**	**22.3431**

3.3 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6662					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0110	0.0749	0.1041	1.7000e-004		4.0700e-003	4.0700e-003		4.0700e-003	4.0700e-003	0.0000	14.6812	14.6812	8.8000e-004	0.0000	14.7032
Total	**0.6773**	**0.0749**	**0.1041**	**1.7000e-004**		**4.0700e-003**	**4.0700e-003**		**4.0700e-003**	**4.0700e-003**	**0.0000**	**14.6812**	**14.6812**	**8.8000e-004**	**0.0000**	**14.7032**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.0000e-004	4.4500e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4285	1.4285	3.0000e-005	0.0000	1.4292
Total	**6.2000e-004**	**4.0000e-004**	**4.4500e-003**	**2.0000e-005**	**1.8200e-003**	**1.0000e-005**	**1.8400e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.4285**	**1.4285**	**3.0000e-005**	**0.0000**	**1.4292**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6662					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0110	0.0749	0.1041	1.7000e-004		4.0700e-003	4.0700e-003		4.0700e-003	4.0700e-003	0.0000	14.6812	14.6812	8.8000e-004	0.0000	14.7032
Total	**0.6773**	**0.0749**	**0.1041**	**1.7000e-004**		**4.0700e-003**	**4.0700e-003**		**4.0700e-003**	**4.0700e-003**	**0.0000**	**14.6812**	**14.6812**	**8.8000e-004**	**0.0000**	**14.7032**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.0000e-004	4.4500e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4285	1.4285	3.0000e-005	0.0000	1.4292
Total	**6.2000e-004**	**4.0000e-004**	**4.4500e-003**	**2.0000e-005**	**1.8200e-003**	**1.0000e-005**	**1.8400e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.4285**	**1.4285**	**3.0000e-005**	**0.0000**	**1.4292**

3.4 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0103**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0269**	**20.0269**	**6.4800e-003**	**0.0000**	**20.1888**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9317	0.9317	2.0000e-005	0.0000	0.9321
Total	**4.0000e-004**	**2.6000e-004**	**2.9000e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9317**	**0.9317**	**2.0000e-005**	**0.0000**	**0.9321**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0103**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0268**	**20.0268**	**6.4800e-003**	**0.0000**	**20.1888**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.6000e-004	2.9000e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2000e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9317	0.9317	2.0000e-005	0.0000	0.9321
Total	**4.0000e-004**	**2.6000e-004**	**2.9000e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2000e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9317**	**0.9317**	**2.0000e-005**	**0.0000**	**0.9321**

Richmond Country Club Phase 2 - Construction

Contra Costa County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	51.00	Dwelling Unit	5.85	94,645.00	145

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1.

Land Use - Please see CalEEMod Note 2.

Construction Phase - Please see CalEEMod Note 7.

Construction Off-road Equipment Mitigation - Please see CalEEMod Note 6.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	115.00
tblConstructionPhase	NumDays	230.00	210.00
tblConstructionPhase	PhaseEndDate	12/14/2023	10/19/2023
tblConstructionPhase	PhaseEndDate	10/19/2023	9/21/2023
tblConstructionPhase	PhaseEndDate	11/16/2023	10/19/2023
tblConstructionPhase	PhaseStartDate	11/17/2023	5/12/2023
tblConstructionPhase	PhaseStartDate	10/20/2023	9/22/2023
tblLandUse	LandUseSquareFeet	91,800.00	94,645.00
tblLandUse	LotAcreage	16.56	5.85
tblLandUse	Population	146.00	145.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7773	16.1304	16.9042	0.0297	0.1817	0.8109	0.9926	0.0490	0.7629	0.8119	0.0000	2,836.7680	2,836.7680	0.6209	0.0000	2,852.2912
2023	13.4264	16.0910	18.6380	0.0329	0.2146	0.7721	0.9866	0.0577	0.7307	0.7883	0.0000	3,139.5221	3,139.5221	0.7336	0.0000	3,155.3446
Maximum	**13.4264**	**16.1304**	**18.6380**	**0.0329**	**0.2146**	**0.8109**	**0.9926**	**0.0577**	**0.7629**	**0.8119**	**0.0000**	**3,139.5221**	**3,139.5221**	**0.7336**	**0.0000**	**3,155.3446**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7773	16.1304	16.9042	0.0297	0.1817	0.8109	0.9926	0.0490	0.7629	0.8119	0.0000	2,836.7680	2,836.7680	0.6209	0.0000	2,852.2912
2023	13.4264	16.0910	18.6380	0.0329	0.2146	0.7721	0.9866	0.0577	0.7307	0.7883	0.0000	3,139.5221	3,139.5221	0.7336	0.0000	3,155.3446
Maximum	**13.4264**	**16.1304**	**18.6380**	**0.0329**	**0.2146**	**0.8109**	**0.9926**	**0.0577**	**0.7629**	**0.8119**	**0.0000**	**3,139.5221**	**3,139.5221**	**0.7336**	**0.0000**	**3,155.3446**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	12/2/2022	9/21/2023	5	210	
2	Architectural Coating	Architectural Coating	5/12/2023	10/19/2023	5	115	
3	Paving	Paving	9/22/2023	10/19/2023	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 191,656; Residential Outdoor: 63,885; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	18.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0149	0.4834	0.1148	1.3500e-003	0.0338	9.9000e-004	0.0348	9.7400e-003	9.5000e-004	0.0107		142.6704	142.6704	6.0300e-003		142.8211
Worker	0.0561	0.0313	0.4259	1.4000e-003	0.1479	9.1000e-004	0.1488	0.0392	8.3000e-004	0.0401		139.7640	139.7640	2.9600e-003		139.8379
Total	**0.0711**	**0.5147**	**0.5408**	**2.7500e-003**	**0.1817**	**1.9000e-003**	**0.1836**	**0.0490**	**1.7800e-003**	**0.0508**		**282.4344**	**282.4344**	**8.9900e-003**		**282.6590**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0149	0.4834	0.1148	1.3500e-003	0.0338	9.9000e-004	0.0348	9.7400e-003	9.5000e-004	0.0107		142.6704	142.6704	6.0300e-003		142.8211
Worker	0.0561	0.0313	0.4259	1.4000e-003	0.1479	9.1000e-004	0.1488	0.0392	8.3000e-004	0.0401		139.7640	139.7640	2.9600e-003		139.8379
Total	**0.0711**	**0.5147**	**0.5408**	**2.7500e-003**	**0.1817**	**1.9000e-003**	**0.1836**	**0.0490**	**1.7800e-003**	**0.0508**		**282.4344**	**282.4344**	**8.9900e-003**		**282.6590**

3.2 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0113	0.3688	0.1029	1.3100e-003	0.0339	4.4000e-004	0.0343	9.7400e-003	4.2000e-004	0.0102		138.6841	138.6841	4.9700e-003		138.8084
Worker	0.0522	0.0281	0.3927	1.3500e-003	0.1479	8.9000e-004	0.1488	0.0392	8.2000e-004	0.0400		134.3292	134.3292	2.6500e-003		134.3955
Total	**0.0635**	**0.3969**	**0.4956**	**2.6600e-003**	**0.1817**	**1.3300e-003**	**0.1830**	**0.0490**	**1.2400e-003**	**0.0502**		**273.0132**	**273.0132**	**7.6200e-003**		**273.2039**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0113	0.3688	0.1029	1.3100e-003	0.0339	4.4000e-004	0.0343	9.7400e-003	4.2000e-004	0.0102		138.6841	138.6841	4.9700e-003		138.8084
Worker	0.0522	0.0281	0.3927	1.3500e-003	0.1479	8.9000e-004	0.1488	0.0392	8.2000e-004	0.0400		134.3292	134.3292	2.6500e-003		134.3955
Total	**0.0635**	**0.3969**	**0.4956**	**2.6600e-003**	**0.1817**	**1.3300e-003**	**0.1830**	**0.0490**	**1.2400e-003**	**0.0502**		**273.0132**	**273.0132**	**7.6200e-003**		**273.2039**

3.3 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.5868					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**11.7785**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0116	6.2500e-003	0.0873	3.0000e-004	0.0329	2.0000e-004	0.0331	8.7200e-003	1.8000e-004	8.9000e-003		29.8509	29.8509	5.9000e-004		29.8657
Total	**0.0116**	**6.2500e-003**	**0.0873**	**3.0000e-004**	**0.0329**	**2.0000e-004**	**0.0331**	**8.7200e-003**	**1.8000e-004**	**8.9000e-003**		**29.8509**	**29.8509**	**5.9000e-004**		**29.8657**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.5868					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**11.7785**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0116	6.2500e-003	0.0873	3.0000e-004	0.0329	2.0000e-004	0.0331	8.7200e-003	1.8000e-004	8.9000e-003		29.8509	29.8509	5.9000e-004		29.8657
Total	**0.0116**	**6.2500e-003**	**0.0873**	**3.0000e-004**	**0.0329**	**2.0000e-004**	**0.0331**	**8.7200e-003**	**1.8000e-004**	**8.9000e-003**		**29.8509**	**29.8509**	**5.9000e-004**		**29.8657**

3.4 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0234	0.3273	1.1200e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		111.9410	111.9410	2.2100e-003		111.9963
Total	**0.0435**	**0.0234**	**0.3273**	**1.1200e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**111.9410**	**111.9410**	**2.2100e-003**		**111.9963**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0435	0.0234	0.3273	1.1200e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		111.9410	111.9410	2.2100e-003		111.9963
Total	**0.0435**	**0.0234**	**0.3273**	**1.1200e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**111.9410**	**111.9410**	**2.2100e-003**		**111.9963**

Richmond Country Club Phase 2 - Construction

Contra Costa County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	51.00	Dwelling Unit	5.85	94,645.00	145

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1.

Land Use - Please see CalEEMod Note 2.

Construction Phase - Please see CalEEMod Note 7.

Demolition - Please see CalEEMod Note 5.

Grading - Please see CalEEMod Note 4.

Construction Off-road Equipment Mitigation - Please see CalEEMod Note 6.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	115.00
tblConstructionPhase	NumDays	230.00	210.00
tblConstructionPhase	PhaseEndDate	12/14/2023	10/19/2023
tblConstructionPhase	PhaseEndDate	10/19/2023	9/21/2023
tblConstructionPhase	PhaseEndDate	11/16/2023	10/19/2023
tblConstructionPhase	PhaseStartDate	11/17/2023	5/12/2023
tblConstructionPhase	PhaseStartDate	10/20/2023	9/22/2023
tblLandUse	LandUseSquareFeet	91,800.00	94,645.00
tblLandUse	LotAcreage	16.56	5.85
tblLandUse	Population	146.00	145.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7759	16.1391	16.8619	0.0295	0.1735	0.8109	0.9844	0.0468	0.7629	0.8097	0.0000	2,812.9297	2,812.9297	0.6211	0.0000	2,828.4567
2023	12.2818	16.0969	18.5676	0.0325	0.1981	0.7720	0.9701	0.0533	0.7306	0.7839	0.0000	3,107.0463	3,107.0463	0.7332	0.0000	3,122.8654
Maximum	**12.2818**	**16.1391**	**18.5676**	**0.0325**	**0.1981**	**0.8109**	**0.9844**	**0.0533**	**0.7629**	**0.8097**	**0.0000**	**3,107.0463**	**3,107.0463**	**0.7332**	**0.0000**	**3,122.8654**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7759	16.1391	16.8619	0.0295	0.1735	0.8109	0.9844	0.0468	0.7629	0.8097	0.0000	2,812.9297	2,812.9297	0.6211	0.0000	2,828.4567
2023	12.2818	16.0969	18.5676	0.0325	0.1981	0.7720	0.9701	0.0533	0.7306	0.7839	0.0000	3,107.0463	3,107.0463	0.7332	0.0000	3,122.8654
Maximum	**12.2818**	**16.1391**	**18.5676**	**0.0325**	**0.1981**	**0.8109**	**0.9844**	**0.0533**	**0.7629**	**0.8097**	**0.0000**	**3,107.0463**	**3,107.0463**	**0.7332**	**0.0000**	**3,122.8654**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	12/2/2022	9/21/2023	5	210	
2	Paving	Paving	9/22/2023	10/19/2023	5	20	
3	Architectural Coating	Architectural Coating	5/12/2023	10/19/2023	5	115	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 172,791; Residential Outdoor: 57,597; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	17.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0158	0.4870	0.1328	1.3200e-003	0.0338	1.0300e-003	0.0349	9.7400e-003	9.8000e-004	0.0107		138.9959	138.9959	6.5800e-003		139.1604
Worker	0.0538	0.0364	0.3656	1.2000e-003	0.1397	8.6000e-004	0.1405	0.0370	7.9000e-004	0.0378		119.6003	119.6003	2.5500e-003		119.6641
Total	**0.0697**	**0.5234**	**0.4985**	**2.5200e-003**	**0.1735**	**1.8900e-003**	**0.1754**	**0.0468**	**1.7700e-003**	**0.0486**		**258.5962**	**258.5962**	**9.1300e-003**		**258.8245**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0158	0.4870	0.1328	1.3200e-003	0.0338	1.0300e-003	0.0349	9.7400e-003	9.8000e-004	0.0107		138.9959	138.9959	6.5800e-003		139.1604
Worker	0.0538	0.0364	0.3656	1.2000e-003	0.1397	8.6000e-004	0.1405	0.0370	7.9000e-004	0.0378		119.6003	119.6003	2.5500e-003		119.6641
Total	**0.0697**	**0.5234**	**0.4985**	**2.5200e-003**	**0.1735**	**1.8900e-003**	**0.1754**	**0.0468**	**1.7700e-003**	**0.0486**		**258.5962**	**258.5962**	**9.1300e-003**		**258.8245**

3.2 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0120	0.3706	0.1175	1.2800e-003	0.0339	4.5000e-004	0.0343	9.7400e-003	4.3000e-004	0.0102		135.1475	135.1475	5.3900e-003		135.2824
Worker	0.0502	0.0327	0.3357	1.1500e-003	0.1397	8.4000e-004	0.1405	0.0370	7.7000e-004	0.0378		114.9548	114.9548	2.2800e-003		115.0118
Total	**0.0622**	**0.4033**	**0.4532**	**2.4300e-003**	**0.1735**	**1.2900e-003**	**0.1748**	**0.0468**	**1.2000e-003**	**0.0480**		**250.1022**	**250.1022**	**7.6700e-003**		**250.2942**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0120	0.3706	0.1175	1.2800e-003	0.0339	4.5000e-004	0.0343	9.7400e-003	4.3000e-004	0.0102		135.1475	135.1475	5.3900e-003		135.2824
Worker	0.0502	0.0327	0.3357	1.1500e-003	0.1397	8.4000e-004	0.1405	0.0370	7.7000e-004	0.0378		114.9548	114.9548	2.2800e-003		115.0118
Total	**0.0622**	**0.4033**	**0.4532**	**2.4300e-003**	**0.1735**	**1.2900e-003**	**0.1748**	**0.0468**	**1.2000e-003**	**0.0480**		**250.1022**	**250.1022**	**7.6700e-003**		**250.2942**

3.3 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0443	0.0289	0.2962	1.0200e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		101.4307	101.4307	2.0100e-003		101.4810
Total	**0.0443**	**0.0289**	**0.2962**	**1.0200e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**101.4307**	**101.4307**	**2.0100e-003**		**101.4810**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0443	0.0289	0.2962	1.0200e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		101.4307	101.4307	2.0100e-003		101.4810
Total	**0.0443**	**0.0289**	**0.2962**	**1.0200e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**101.4307**	**101.4307**	**2.0100e-003**		**101.4810**

3.4 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**10.6380**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**8.8600e-003**	**5.7700e-003**	**0.0592**	**2.0000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5400e-003**	**1.4000e-004**	**6.6700e-003**		**20.2861**	**20.2861**	**4.0000e-004**		**20.2962**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.4463					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	8.8600e-003	5.7700e-003	0.0592	2.0000e-004	0.0246	1.5000e-004	0.0248	6.5400e-003	1.4000e-004	6.6700e-003		20.2861	20.2861	4.0000e-004		20.2962
Total	**8.8600e-003**	**5.7700e-003**	**0.0592**	**2.0000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5400e-003**	**1.4000e-004**	**6.6700e-003**		**20.2861**	**20.2861**	**4.0000e-004**		**20.2962**

Richmond Country Club - Operation

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	102.00	Dwelling Unit	11.71	189,290.00	290

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1.

Land Use - Please see CalEEmod Note 2.

Vehicle Trips - Please see CalEEMod Note 8.

Woodstoves - Please see CalEEMod Note 9.

Solid Waste - Please see CalEEMod Note 10.

Area Mitigation - Please see CalEEMod Note 11.

Energy Mitigation - Please see CalEEMod Note 12.

Water Mitigation - Please see CalEEMod Note 13.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	300.00	230.00
tblFireplaces	NumberWood	43.86	0.00
tblLandUse	LandUseSquareFeet	183,600.00	189,290.00
tblLandUse	LotAcreage	33.12	11.71
tblLandUse	Population	292.00	290.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblSolidWaste	SolidWasteGenerationRate	121.80	2.23
tblVehicleTrips	ST_TR	9.91	9.44
tblVehicleTrips	SU_TR	8.62	9.44
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9221	0.0154	0.9987	8.4000e-004		0.0435	0.0435		0.0435	0.0435	5.2271	4.4205	9.6477	0.0257	6.0000e-005	10.3073
Energy	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	307.9303	307.9303	0.0151	6.4400e-003	310.2274
Mobile	0.2389	1.0971	2.6936	9.4100e-003	0.8305	8.0200e-003	0.8385	0.2228	7.5000e-003	0.2303	0.0000	862.2215	862.2215	0.0311	0.0000	862.9983
Waste						0.0000	0.0000		0.0000	0.0000	0.4527	0.0000	0.4527	0.0268	0.0000	1.1215
Water						0.0000	0.0000		0.0000	0.0000	2.1084	4.8221	6.9305	0.2172	5.2500e-003	13.9257
Total	**1.1842**	**1.3114**	**3.7769**	**0.0115**	**0.8305**	**0.0676**	**0.8980**	**0.2228**	**0.0670**	**0.2899**	**7.7882**	**1,179.3944**	**1,187.1826**	**0.3159**	**0.0118**	**1,198.5802**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8954	8.7400e-003	0.7582	4.0000e-005		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	1.2371	1.2371	1.1900e-003	0.0000	1.2670
Energy	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	265.2984	265.2984	9.2400e-003	5.2200e-003	267.0853
Mobile	0.2389	1.0971	2.6936	9.4100e-003	0.8305	8.0200e-003	0.8385	0.2228	7.5000e-003	0.2303	0.0000	862.2215	862.2215	0.0311	0.0000	862.9983
Waste						0.0000	0.0000		0.0000	0.0000	0.4527	0.0000	0.4527	0.0268	0.0000	1.1215
Water						0.0000	0.0000		0.0000	0.0000	1.6867	3.8577	5.5444	0.1738	4.2000e-003	11.1406
Total	**1.1576**	**1.3047**	**3.5364**	**0.0107**	**0.8305**	**0.0283**	**0.8588**	**0.2228**	**0.0278**	**0.2506**	**2.1394**	**1,132.6147**	**1,134.7541**	**0.2420**	**9.4200e-003**	**1,143.6126**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**2.25**	**0.51**	**6.37**	**6.94**	**0.00**	**58.12**	**4.37**	**0.00**	**58.57**	**13.54**	**72.53**	**3.97**	**4.42**	**23.38**	**19.83**	**4.59**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2389	1.0971	2.6936	9.4100e-003	0.8305	8.0200e-003	0.8385	0.2228	7.5000e-003	0.2303	0.0000	862.2215	862.2215	0.0311	0.0000	862.9983
Unmitigated	0.2389	1.0971	2.6936	9.4100e-003	0.8305	8.0200e-003	0.8385	0.2228	7.5000e-003	0.2303	0.0000	862.2215	862.2215	0.0311	0.0000	862.9983

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	962.88	962.88	962.88	2,223,875	2,223,875
Total	962.88	962.88	962.88	2,223,875	2,223,875

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.586711	0.038259	0.185486	0.120728	0.016377	0.005053	0.010699	0.024311	0.001622	0.001773	0.005406	0.002738	0.000835

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	34.9256	34.9256	4.8200e-003	1.0000e-003	35.3435
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.5575	77.5575	0.0107	2.2200e-003	78.4856
NaturalGas Mitigated	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	230.3728	230.3728	4.4200e-003	4.2200e-003	231.7418
NaturalGas Unmitigated	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	230.3728	230.3728	4.4200e-003	4.2200e-003	231.7418

5.2 Energy by Land Use - NaturalGas

Natural gas consumption not included in AQ, GHG, or Energy analyses due to compliance with the City of Richmond's Energy Reach Code.

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	4.31702e+006	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	230.3728	230.3728	4.4200e-003	4.2200e-003	231.7418
Total		**0.0233**	**0.1989**	**0.0847**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**	**0.0000**	**230.3728**	**230.3728**	**4.4200e-003**	**4.2200e-003**	**231.7418**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	4.31702e+006	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	230.3728	230.3728	4.4200e-003	4.2200e-003	231.7418
Total		**0.0233**	**0.1989**	**0.0847**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**	**0.0000**	**230.3728**	**230.3728**	**4.4200e-003**	**4.2200e-003**	**231.7418**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	814214	77.5575	0.0107	2.2200e-003	78.4856
Total		**77.5575**	**0.0107**	**2.2200e-003**	**78.4856**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	366655	34.9256	4.8200e-003	1.0000e-003	35.3435
Total		**34.9256**	**4.8200e-003**	**1.0000e-003**	**35.3435**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8954	8.7400e-003	0.7582	4.0000e-005		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	1.2371	1.2371	1.1900e-003	0.0000	1.2670
Unmitigated	0.9221	0.0154	0.9987	8.4000e-004		0.0435	0.0435		0.0435	0.0435	5.2271	4.4205	9.6477	0.0257	6.0000e-005	10.3073

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7393					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0267	6.6500e-003	0.2405	8.0000e-004		0.0393	0.0393		0.0393	0.0393	5.2271	3.1834	8.4105	0.0245	6.0000e-005	9.0404
Landscaping	0.0229	8.7400e-003	0.7582	4.0000e-005		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	1.2371	1.2371	1.1900e-003	0.0000	1.2670
Total	**0.9221**	**0.0154**	**0.9987**	**8.4000e-004**		**0.0435**	**0.0435**		**0.0435**	**0.0435**	**5.2271**	**4.4205**	**9.6477**	**0.0257**	**6.0000e-005**	**10.3073**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7393					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0229	8.7400e-003	0.7582	4.0000e-005		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	1.2371	1.2371	1.1900e-003	0.0000	1.2670
Total	**0.8954**	**8.7400e-003**	**0.7582**	**4.0000e-005**		**4.1900e-003**	**4.1900e-003**		**4.1900e-003**	**4.1900e-003**	**0.0000**	**1.2371**	**1.2371**	**1.1900e-003**	**0.0000**	**1.2670**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.5444	0.1738	4.2000e-003	11.1406
Unmitigated	6.9305	0.2172	5.2500e-003	13.9257

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	6.64571 / 4.18969	6.9305	0.2172	5.2500e-003	13.9257
Total		**6.9305**	**0.2172**	**5.2500e-003**	**13.9257**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	5.31657 / 3.35175	5.5444	0.1738	4.2000e-003	11.1406
Total		**5.5444**	**0.1738**	**4.2000e-003**	**11.1406**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.4527	0.0268	0.0000	1.1215
Unmitigated	0.4527	0.0268	0.0000	1.1215

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	2.23	0.4527	0.0268	0.0000	1.1215
Total		**0.4527**	**0.0268**	**0.0000**	**1.1215**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	2.23	0.4527	0.0268	0.0000	1.1215
Total		**0.4527**	**0.0268**	**0.0000**	**1.1215**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Richmond Country Club - Operation

Contra Costa County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	102.00	Dwelling Unit	11.71	189,290.00	290

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1.

Land Use - Please see CalEEmod Note 2.

Vehicle Trips - Please see CalEEMod Note 8.

Woodstoves - Please see CalEEMod Note 9.

Solid Waste - Please see CalEEMod Note 10.

Area Mitigation - Please see CalEEMod Note 11.

Energy Mitigation - Please see CalEEMod Note 12.

Water Mitigation - Please see CalEEMod Note 13.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	300.00	230.00
tblFireplaces	NumberWood	43.86	0.00
tblLandUse	LandUseSquareFeet	183,600.00	189,290.00
tblLandUse	LotAcreage	33.12	11.71
tblLandUse	Population	292.00	290.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblSolidWaste	SolidWasteGenerationRate	121.80	2.23
tblVehicleTrips	ST_TR	9.91	9.44
tblVehicleTrips	SU_TR	8.62	9.44
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.5955	0.9614	31.3597	0.0777		3.7937	3.7937		3.7937	3.7937	547.1915	645.1523	1,192.3438	2.5847	0.0116	1,260.4033
Energy	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349
Mobile	1.5661	5.8513	15.6969	0.0554	4.7236	0.0440	4.7675	1.2638	0.0411	1.3049		5,591.4519	5,591.4519	0.1905		5,596.2155
Total	**9.2892**	**7.9027**	**47.5204**	**0.1401**	**4.7236**	**3.9258**	**8.6494**	**1.2638**	**3.9229**	**5.1867**	**547.1915**	**7,628.0704**	**8,175.2618**	**2.8019**	**0.0371**	**8,256.3536**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.0354	0.0972	8.4242	4.4000e-004		0.0466	0.0466		0.0466	0.0466	0.0000	15.1523	15.1523	0.0146	0.0000	15.5178
Energy	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349
Mobile	1.5661	5.8513	15.6969	0.0554	4.7236	0.0440	4.7675	1.2638	0.0411	1.3049		5,591.4519	5,591.4519	0.1905		5,596.2155
Total	**6.7291**	**7.0384**	**24.5849**	**0.0628**	**4.7236**	**0.1787**	**4.9022**	**1.2638**	**0.1758**	**1.4395**	**0.0000**	**6,998.0704**	**6,998.0704**	**0.2318**	**0.0255**	**7,011.4682**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**27.56**	**10.94**	**48.26**	**55.17**	**0.00**	**95.45**	**43.32**	**0.00**	**95.52**	**72.25**	**100.00**	**8.26**	**14.40**	**91.73**	**31.17**	**15.08**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5661	5.8513	15.6969	0.0554	4.7236	0.0440	4.7675	1.2638	0.0411	1.3049		5,591.4519	5,591.4519	0.1905		5,596.2155
Unmitigated	1.5661	5.8513	15.6969	0.0554	4.7236	0.0440	4.7675	1.2638	0.0411	1.3049		5,591.4519	5,591.4519	0.1905		5,596.2155

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	962.88	962.88	962.88	2,223,875	2,223,875
Total	962.88	962.88	962.88	2,223,875	2,223,875

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.586711	0.038259	0.185486	0.120728	0.016377	0.005053	0.010699	0.024311	0.001622	0.001773	0.005406	0.002738	0.000835

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349
NaturalGas Unmitigated	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349

5.2 Energy by Land Use - NaturalGas

Natural gas consumption not included in AQ, GHG, or Energy analyses due to compliance with the City of Richmond's Energy Reach Code.

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	11827.5	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349
Total		**0.1276**	**1.0900**	**0.4638**	**6.9600e-003**		**0.0881**	**0.0881**		**0.0881**	**0.0881**		**1,391.4661**	**1,391.4661**	**0.0267**	**0.0255**	**1,399.7349**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	11.8275	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349
Total		**0.1276**	**1.0900**	**0.4638**	**6.9600e-003**		**0.0881**	**0.0881**		**0.0881**	**0.0881**		**1,391.4661**	**1,391.4661**	**0.0267**	**0.0255**	**1,399.7349**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.0354	0.0972	8.4242	4.4000e-004		0.0466	0.0466		0.0466	0.0466	0.0000	15.1523	15.1523	0.0146	0.0000	15.5178
Unmitigated	7.5955	0.9614	31.3597	0.0777		3.7937	3.7937		3.7937	3.7937	547.1915	645.1523	1,192.3438	2.5847	0.0116	1,260.4033

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0508					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.5602	0.8642	22.9355	0.0773		3.7472	3.7472		3.7472	3.7472	547.1915	630.0000	1,177.1915	2.5701	0.0116	1,244.8855
Landscaping	0.2545	0.0972	8.4242	4.4000e-004		0.0466	0.0466		0.0466	0.0466		15.1523	15.1523	0.0146		15.5178
Total	**7.5955**	**0.9614**	**31.3597**	**0.0777**		**3.7937**	**3.7937**		**3.7937**	**3.7937**	**547.1915**	**645.1523**	**1,192.3438**	**2.5847**	**0.0116**	**1,260.4033**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0508					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2545	0.0972	8.4242	4.4000e-004		0.0466	0.0466		0.0466	0.0466		15.1523	15.1523	0.0146		15.5178
Total	**5.0354**	**0.0972**	**8.4242**	**4.4000e-004**		**0.0466**	**0.0466**		**0.0466**	**0.0466**	**0.0000**	**15.1523**	**15.1523**	**0.0146**	**0.0000**	**15.5178**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Richmond Country Club - Operation

Contra Costa County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	102.00	Dwelling Unit	11.71	189,290.00	290

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1.

Land Use - Please see CalEEmod Note 2.

Vehicle Trips - Please see CalEEMod Note 8.

Woodstoves - Please see CalEEMod Note 9.

Solid Waste - Please see CalEEMod Note 10.

Construction Off-road Equipment Mitigation -

Area Mitigation - Please see CalEEMod Note 11.

Energy Mitigation - Please see CalEEMod Note 12.

Water Mitigation - Please see CalEEMod Note 13.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	300.00	230.00
tblFireplaces	NumberWood	43.86	0.00
tblLandUse	LandUseSquareFeet	183,600.00	189,290.00
tblLandUse	LotAcreage	33.12	11.71
tblLandUse	Population	292.00	290.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblSolidWaste	SolidWasteGenerationRate	121.80	2.23
tblVehicleTrips	ST_TR	9.91	9.44
tblVehicleTrips	SU_TR	8.62	9.44
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.0642	18.6553	17.7543	0.0326	0.3784	0.9631	1.3415	0.1021	0.9055	1.0076	0.0000	3,132.4510	3,132.4510	0.6375	0.0000	3,148.3884
2022	133.4757	16.7663	17.4514	0.0324	0.3784	0.8131	1.1915	0.1021	0.7650	0.8671	0.0000	3,120.4310	3,120.4310	0.6320	0.0000	3,136.2305
Maximum	**133.4757**	**18.6553**	**17.7543**	**0.0326**	**0.3784**	**0.9631**	**1.3415**	**0.1021**	**0.9055**	**1.0076**	**0.0000**	**3,132.4510**	**3,132.4510**	**0.6375**	**0.0000**	**3,148.3884**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.0642	18.6553	17.7543	0.0326	0.3784	0.9631	1.3415	0.1021	0.9055	1.0076	0.0000	3,132.4510	3,132.4510	0.6375	0.0000	3,148.3883
2022	133.4757	16.7663	17.4514	0.0324	0.3784	0.8131	1.1915	0.1021	0.7650	0.8671	0.0000	3,120.4310	3,120.4310	0.6320	0.0000	3,136.2305
Maximum	**133.4757**	**18.6553**	**17.7543**	**0.0326**	**0.3784**	**0.9631**	**1.3415**	**0.1021**	**0.9055**	**1.0076**	**0.0000**	**3,132.4510**	**3,132.4510**	**0.6375**	**0.0000**	**3,148.3883**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.5955	0.9614	31.3597	0.0777		3.7937	3.7937		3.7937	3.7937	547.1915	645.1523	1,192.3438	2.5847	0.0116	1,260.4033
Energy	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349
Mobile	1.2829	6.1502	15.5409	0.0511	4.7236	0.0443	4.7679	1.2638	0.0414	1.3052		5,160.3525	5,160.3525	0.1935		5,165.1902
Total	**9.0059**	**8.2015**	**47.3644**	**0.1358**	**4.7236**	**3.9262**	**8.6497**	**1.2638**	**3.9233**	**5.1870**	**547.1915**	**7,196.9709**	**7,744.1624**	**2.8049**	**0.0371**	**7,825.3283**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.0354	0.0972	8.4242	4.4000e-004		0.0466	0.0466		0.0466	0.0466	0.0000	15.1523	15.1523	0.0146	0.0000	15.5178
Energy	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349
Mobile	1.2829	6.1502	15.5409	0.0511	4.7236	0.0443	4.7679	1.2638	0.0414	1.3052		5,160.3525	5,160.3525	0.1935		5,165.1902
Total	**6.4458**	**7.3373**	**24.4289**	**0.0585**	**4.7236**	**0.1790**	**4.9026**	**1.2638**	**0.1761**	**1.4399**	**0.0000**	**6,566.9709**	**6,566.9709**	**0.2348**	**0.0255**	**6,580.4429**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**28.43**	**10.54**	**48.42**	**56.91**	**0.00**	**95.44**	**43.32**	**0.00**	**95.51**	**72.24**	**100.00**	**8.75**	**15.20**	**91.63**	**31.17**	**15.91**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2829	6.1502	15.5409	0.0511	4.7236	0.0443	4.7679	1.2638	0.0414	1.3052		5,160.3525	5,160.3525	0.1935		5,165.1902
Unmitigated	1.2829	6.1502	15.5409	0.0511	4.7236	0.0443	4.7679	1.2638	0.0414	1.3052		5,160.3525	5,160.3525	0.1935		5,165.1902

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	962.88	962.88	962.88	2,223,875	2,223,875
Total	962.88	962.88	962.88	2,223,875	2,223,875

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.586711	0.038259	0.185486	0.120728	0.016377	0.005053	0.010699	0.024311	0.001622	0.001773	0.005406	0.002738	0.000835

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349
NaturalGas Unmitigated	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349

5.2 Energy by Land Use - NaturalGas

Natural gas consumption not included in AQ, GHG, or Energy analyses due to compliance with the City of Richmond's Energy Reach Code.

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	11827.5	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349
Total		**0.1276**	**1.0900**	**0.4638**	**6.9600e-003**		**0.0881**	**0.0881**		**0.0881**	**0.0881**		**1,391.4661**	**1,391.4661**	**0.0267**	**0.0255**	**1,399.7349**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	11.8275	0.1276	1.0900	0.4638	6.9600e-003		0.0881	0.0881		0.0881	0.0881		1,391.4661	1,391.4661	0.0267	0.0255	1,399.7349
Total		**0.1276**	**1.0900**	**0.4638**	**6.9600e-003**		**0.0881**	**0.0881**		**0.0881**	**0.0881**		**1,391.4661**	**1,391.4661**	**0.0267**	**0.0255**	**1,399.7349**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.0354	0.0972	8.4242	4.4000e-004		0.0466	0.0466		0.0466	0.0466	0.0000	15.1523	15.1523	0.0146	0.0000	15.5178
Unmitigated	7.5955	0.9614	31.3597	0.0777		3.7937	3.7937		3.7937	3.7937	547.1915	645.1523	1,192.3438	2.5847	0.0116	1,260.4033

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0508					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.5602	0.8642	22.9355	0.0773		3.7472	3.7472		3.7472	3.7472	547.1915	630.0000	1,177.1915	2.5701	0.0116	1,244.8855
Landscaping	0.2545	0.0972	8.4242	4.4000e-004		0.0466	0.0466		0.0466	0.0466		15.1523	15.1523	0.0146		15.5178
Total	**7.5955**	**0.9614**	**31.3597**	**0.0777**		**3.7937**	**3.7937**		**3.7937**	**3.7937**	**547.1915**	**645.1523**	**1,192.3438**	**2.5847**	**0.0116**	**1,260.4033**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.0508					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2545	0.0972	8.4242	4.4000e-004		0.0466	0.0466		0.0466	0.0466		15.1523	15.1523	0.0146		15.5178
Total	**5.0354**	**0.0972**	**8.4242**	**4.4000e-004**		**0.0466**	**0.0466**		**0.0466**	**0.0466**	**0.0000**	**15.1523**	**15.1523**	**0.0146**	**0.0000**	**15.5178**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Richmond Country Club 2030 Operation

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	102.00	Dwelling Unit	11.71	189,290.00	290

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	156.72	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 14.

Land Use - Please see CalEEmod Note 2.

Vehicle Trips - Please see CalEEMod Note 8.

Woodstoves - Please see CalEEMod Note 9.

Solid Waste - Please see CalEEMod Note 10.

Area Mitigation - Please see CalEEMod Note 11.

Energy Mitigation - Please see CalEEMod Note 12.

Water Mitigation - Please see CalEEMod Note 13.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	NumberWood	43.86	0.00
tblLandUse	LandUseSquareFeet	183,600.00	189,290.00
tblLandUse	LotAcreage	33.12	11.71
tblLandUse	Population	292.00	290.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	156.72
tblSolidWaste	SolidWasteGenerationRate	121.80	2.23
tblVehicleTrips	ST_TR	9.91	9.44
tblVehicleTrips	SU_TR	8.62	9.44
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9218	0.0154	0.9958	8.4000e-004		0.0435	0.0435		0.0435	0.0435	5.2271	4.4205	9.6477	0.0257	6.0000e-005	10.3070
Energy	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	288.2528	288.2528	0.0151	6.4400e-003	290.5499
Mobile	0.1504	0.7048	1.6795	7.4400e-003	0.8299	4.8600e-003	0.8347	0.2226	4.5200e-003	0.2271	0.0000	684.6355	684.6355	0.0207	0.0000	685.1519
Waste						0.0000	0.0000		0.0000	0.0000	0.4527	0.0000	0.4527	0.0268	0.0000	1.1215
Water						0.0000	0.0000		0.0000	0.0000	2.1084	3.5987	5.7071	0.2172	5.2500e-003	12.7023
Total	**1.0955**	**0.9190**	**2.7600**	**9.5500e-003**	**0.8299**	**0.0644**	**0.8943**	**0.2226**	**0.0641**	**0.2866**	**7.7882**	**980.9076**	**988.6958**	**0.3054**	**0.0118**	**999.8325**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.8951	8.7100e-003	0.7554	4.0000e-005		4.2000e-003	4.2000e-003		4.2000e-003	4.2000e-003	0.0000	1.2371	1.2371	1.1800e-003	0.0000	1.2666
Energy	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	256.4373	256.4373	9.2400e-003	5.2200e-003	258.2242
Mobile	0.1504	0.7048	1.6795	7.4400e-003	0.8299	4.8600e-003	0.8347	0.2226	4.5200e-003	0.2271	0.0000	684.6355	684.6355	0.0207	0.0000	685.1519
Waste						0.0000	0.0000		0.0000	0.0000	0.4527	0.0000	0.4527	0.0268	0.0000	1.1215
Water						0.0000	0.0000		0.0000	0.0000	1.6867	2.8790	4.5657	0.1738	4.2000e-003	10.1618
Total	**1.0688**	**0.9124**	**2.5195**	**8.7500e-003**	**0.8299**	**0.0251**	**0.8550**	**0.2226**	**0.0248**	**0.2474**	**2.1394**	**945.1889**	**947.3283**	**0.2316**	**9.4200e-003**	**955.9259**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**2.44**	**0.72**	**8.71**	**8.38**	**0.00**	**60.96**	**4.39**	**0.00**	**61.29**	**13.70**	**72.53**	**3.64**	**4.18**	**24.18**	**19.83**	**4.39**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1504	0.7048	1.6795	7.4400e-003	0.8299	4.8600e-003	0.8347	0.2226	4.5200e-003	0.2271	0.0000	684.6355	684.6355	0.0207	0.0000	685.1519
Unmitigated	0.1504	0.7048	1.6795	7.4400e-003	0.8299	4.8600e-003	0.8347	0.2226	4.5200e-003	0.2271	0.0000	684.6355	684.6355	0.0207	0.0000	685.1519

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	962.88	962.88	962.88	2,223,875	2,223,875
Total	962.88	962.88	962.88	2,223,875	2,223,875

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.606524	0.034895	0.184335	0.108602	0.012129	0.004836	0.010863	0.026200	0.001662	0.001538	0.005105	0.002652	0.000659

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	26.0644	26.0644	4.8200e-003	1.0000e-003	26.4824
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	57.8800	57.8800	0.0107	2.2200e-003	58.8081
NaturalGas Mitigated	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	230.3728	230.3728	4.4200e-003	4.2200e-003	231.7418
NaturalGas Unmitigated	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	230.3728	230.3728	4.4200e-003	4.2200e-003	231.7418

5.2 Energy by Land Use - NaturalGas

Natural gas consumption not included in AQ, GHG, or Energy analyses due to compliance with the City of Richmond's Energy Reach Code.

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	4.31702e+006	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	230.3728	230.3728	4.4200e-003	4.2200e-003	231.7418
Total		**0.0233**	**0.1989**	**0.0847**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**	**0.0000**	**230.3728**	**230.3728**	**4.4200e-003**	**4.2200e-003**	**231.7418**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	4.31702e+006	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	230.3728	230.3728	4.4200e-003	4.2200e-003	231.7418
Total		**0.0233**	**0.1989**	**0.0847**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**	**0.0000**	**230.3728**	**230.3728**	**4.4200e-003**	**4.2200e-003**	**231.7418**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	814214	57.8800	0.0107	2.2200e-003	58.8081
Total		**57.8800**	**0.0107**	**2.2200e-003**	**58.8081**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	366655	26.0644	4.8200e-003	1.0000e-003	26.4824
Total		**26.0644**	**4.8200e-003**	**1.0000e-003**	**26.4824**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8951	8.7100e-003	0.7554	4.0000e-005		4.2000e-003	4.2000e-003		4.2000e-003	4.2000e-003	0.0000	1.2371	1.2371	1.1800e-003	0.0000	1.2666
Unmitigated	0.9218	0.0154	0.9958	8.4000e-004		0.0435	0.0435		0.0435	0.0435	5.2271	4.4205	9.6477	0.0257	6.0000e-005	10.3070

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7393					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0267	6.6500e-003	0.2405	8.0000e-004		0.0393	0.0393		0.0393	0.0393	5.2271	3.1834	8.4105	0.0245	6.0000e-005	9.0404
Landscaping	0.0226	8.7100e-003	0.7554	4.0000e-005		4.2000e-003	4.2000e-003		4.2000e-003	4.2000e-003	0.0000	1.2371	1.2371	1.1800e-003	0.0000	1.2666
Total	**0.9218**	**0.0154**	**0.9958**	**8.4000e-004**		**0.0435**	**0.0435**		**0.0435**	**0.0435**	**5.2271**	**4.4205**	**9.6477**	**0.0257**	**6.0000e-005**	**10.3070**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7393					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0226	8.7100e-003	0.7554	4.0000e-005		4.2000e-003	4.2000e-003		4.2000e-003	4.2000e-003	0.0000	1.2371	1.2371	1.1800e-003	0.0000	1.2666
Total	**0.8951**	**8.7100e-003**	**0.7554**	**4.0000e-005**		**4.2000e-003**	**4.2000e-003**		**4.2000e-003**	**4.2000e-003**	**0.0000**	**1.2371**	**1.2371**	**1.1800e-003**	**0.0000**	**1.2666**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.5657	0.1738	4.2000e-003	10.1618
Unmitigated	5.7071	0.2172	5.2500e-003	12.7023

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	6.64571 / 4.18969	5.7071	0.2172	5.2500e-003	12.7023
Total		**5.7071**	**0.2172**	**5.2500e-003**	**12.7023**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	5.31657 / 3.35175	4.5657	0.1738	4.2000e-003	10.1618
Total		**4.5657**	**0.1738**	**4.2000e-003**	**10.1618**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.4527	0.0268	0.0000	1.1215
Unmitigated	0.4527	0.0268	0.0000	1.1215

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	2.23	0.4527	0.0268	0.0000	1.1215
Total		**0.4527**	**0.0268**	**0.0000**	**1.1215**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	2.23	0.4527	0.0268	0.0000	1.1215
Total		**0.4527**	**0.0268**	**0.0000**	**1.1215**

Richmond Country Club - Existing 2022 Operation

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.30	1000sqft	0.12	5,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0235	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Energy	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	11.7676	11.7676	9.7000e-004	2.8000e-004	11.8755
Mobile	0.0120	0.0549	0.1384	4.6000e-004	0.0396	4.0000e-004	0.0400	0.0106	3.8000e-004	0.0110	0.0000	42.3424	42.3424	1.5600e-003	0.0000	42.3815
Waste						0.0000	0.0000		0.0000	0.0000	1.0008	0.0000	1.0008	0.0591	0.0000	2.4793
Water						0.0000	0.0000		0.0000	0.0000	0.2989	0.6780	0.9769	0.0308	7.4000e-004	1.9683
Total	**0.0361**	**0.0599**	**0.1426**	**4.9000e-004**	**0.0396**	**7.8000e-004**	**0.0404**	**0.0106**	**7.6000e-004**	**0.0114**	**1.2996**	**54.7881**	**56.0877**	**0.0925**	**1.0200e-003**	**58.7047**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0235	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Energy	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	11.7676	11.7676	9.7000e-004	2.8000e-004	11.8755
Mobile	0.0120	0.0549	0.1384	4.6000e-004	0.0396	4.0000e-004	0.0400	0.0106	3.8000e-004	0.0110	0.0000	42.3424	42.3424	1.5600e-003	0.0000	42.3815
Waste						0.0000	0.0000		0.0000	0.0000	1.0008	0.0000	1.0008	0.0591	0.0000	2.4793
Water						0.0000	0.0000		0.0000	0.0000	0.2989	0.6780	0.9769	0.0308	7.4000e-004	1.9683
Total	**0.0361**	**0.0599**	**0.1426**	**4.9000e-004**	**0.0396**	**7.8000e-004**	**0.0404**	**0.0106**	**7.6000e-004**	**0.0114**	**1.2996**	**54.7881**	**56.0877**	**0.0925**	**1.0200e-003**	**58.7047**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0120	0.0549	0.1384	4.6000e-004	0.0396	4.0000e-004	0.0400	0.0106	3.8000e-004	0.0110	0.0000	42.3424	42.3424	1.5600e-003	0.0000	42.3815
Unmitigated	0.0120	0.0549	0.1384	4.6000e-004	0.0396	4.0000e-004	0.0400	0.0106	3.8000e-004	0.0110	0.0000	42.3424	42.3424	1.5600e-003	0.0000	42.3815

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	58.46	13.04	5.57	106,138	106,138
Total	58.46	13.04	5.57	106,138	106,138

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.582298	0.039109	0.186022	0.123408	0.017184	0.005083	0.010615	0.023794	0.001605	0.001810	0.005454	0.002746	0.000871

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.3005	6.3005	8.7000e-004	1.8000e-004	6.3759
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.3005	6.3005	8.7000e-004	1.8000e-004	6.3759
NaturalGas Mitigated	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4671	5.4671	1.0000e-004	1.0000e-004	5.4996
NaturalGas Unmitigated	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4671	5.4671	1.0000e-004	1.0000e-004	5.4996

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	102449	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4671	5.4671	1.0000e-004	1.0000e-004	5.4996
Total		**5.5000e-004**	**5.0200e-003**	**4.2200e-003**	**3.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**5.4671**	**5.4671**	**1.0000e-004**	**1.0000e-004**	**5.4996**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	102449	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4671	5.4671	1.0000e-004	1.0000e-004	5.4996
Total		**5.5000e-004**	**5.0200e-003**	**4.2200e-003**	**3.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**5.4671**	**5.4671**	**1.0000e-004**	**1.0000e-004**	**5.4996**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	66144	6.3005	8.7000e-004	1.8000e-004	6.3759
Total		**6.3005**	**8.7000e-004**	**1.8000e-004**	**6.3759**

Mitigated

Land Use	kWh/yr	MT/yr			
Total		**6.3005**	**8.7000e-004**	**1.8000e-004**	**6.3759**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0235	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Unmitigated	0.0235	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004

6.2 Area by SubCategory

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0207					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Total	**0.0235**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**1.0000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0207					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Total	**0.0235**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**1.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.9769	0.0308	7.4000e-004	1.9683
Unmitigated	0.9769	0.0308	7.4000e-004	1.9683

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.941989 / 0.577348	0.9769	0.0308	7.4000e-004	1.9683
Total		**0.9769**	**0.0308**	**7.4000e-004**	**1.9683**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.941989 / 0.577348	0.9769	0.0308	7.4000e-004	1.9683
Total		**0.9769**	**0.0308**	**7.4000e-004**	**1.9683**

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.0008	0.0591	0.0000	2.4793
Unmitigated	1.0008	0.0591	0.0000	2.4793

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	4.93	1.0008	0.0591	0.0000	2.4793
Total		**1.0008**	**0.0591**	**0.0000**	**2.4793**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	4.93	1.0008	0.0591	0.0000	2.4793
Total		**1.0008**	**0.0591**	**0.0000**	**2.4793**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Richmond Country Club - Existing 2022 Operation

Contra Costa County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.30	1000sqft	0.12	5,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1286	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003
Energy	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177
Mobile	0.1034	0.3846	1.0615	3.5900e-003	0.2968	2.9000e-003	0.2997	0.0794	2.7200e-003	0.0821		361.6242	361.6242	0.0127		361.9405
Total	**0.2350**	**0.4121**	**1.0852**	**3.7600e-003**	**0.2968**	**4.9900e-003**	**0.3018**	**0.0794**	**4.8100e-003**	**0.0842**		**394.6468**	**394.6468**	**0.0133**	**6.1000e-004**	**395.1594**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1286	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003
Energy	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177
Mobile	0.1034	0.3846	1.0615	3.5900e-003	0.2968	2.9000e-003	0.2997	0.0794	2.7200e-003	0.0821		361.6242	361.6242	0.0127		361.9405
Total	**0.2350**	**0.4121**	**1.0852**	**3.7600e-003**	**0.2968**	**4.9900e-003**	**0.3018**	**0.0794**	**4.8100e-003**	**0.0842**		**394.6468**	**394.6468**	**0.0133**	**6.1000e-004**	**395.1594**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1034	0.3846	1.0615	3.5900e-003	0.2968	2.9000e-003	0.2997	0.0794	2.7200e-003	0.0821		361.6242	361.6242	0.0127		361.9405
Unmitigated	0.1034	0.3846	1.0615	3.5900e-003	0.2968	2.9000e-003	0.2997	0.0794	2.7200e-003	0.0821		361.6242	361.6242	0.0127		361.9405

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	58.46	13.04	5.57	106,138	106,138
Total	58.46	13.04	5.57	106,138	106,138

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.582298	0.039109	0.186022	0.123408	0.017184	0.005083	0.010615	0.023794	0.001605	0.001810	0.005454	0.002746	0.000871

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177
NaturalGas Unmitigated	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	280.682	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177
Total		**3.0300e-003**	**0.0275**	**0.0231**	**1.7000e-004**		**2.0900e-003**	**2.0900e-003**		**2.0900e-003**	**2.0900e-003**		**33.0214**	**33.0214**	**6.3000e-004**	**6.1000e-004**	**33.2177**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.280682	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177
Total		**3.0300e-003**	**0.0275**	**0.0231**	**1.7000e-004**		**2.0900e-003**	**2.0900e-003**		**2.0900e-003**	**2.0900e-003**		**33.0214**	**33.0214**	**6.3000e-004**	**6.1000e-004**	**33.2177**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1286	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003
Unmitigated	0.1286	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0151					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003
Total	**0.1286**	**0.0000**	**5.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1600e-003**	**1.1600e-003**	**0.0000**		**1.2400e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0151					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003
Total	**0.1286**	**0.0000**	**5.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1600e-003**	**1.1600e-003**	**0.0000**		**1.2400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Richmond Country Club - Existing 2022 Operation

Contra Costa County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.30	1000sqft	0.12	5,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 1

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblProjectCharacteristics	CO2IntensityFactor	641.35	210

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1286	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003
Energy	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177
Mobile	0.0853	0.4059	1.0511	3.3100e-003	0.2968	2.9300e-003	0.2997	0.0794	2.7400e-003	0.0821		333.6177	333.6177	0.0128		333.9381
Total	**0.2169**	**0.4334**	**1.0748**	**3.4800e-003**	**0.2968**	**5.0200e-003**	**0.3018**	**0.0794**	**4.8300e-003**	**0.0842**		**366.6403**	**366.6403**	**0.0135**	**6.1000e-004**	**367.1570**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1286	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003
Energy	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177
Mobile	0.0853	0.4059	1.0511	3.3100e-003	0.2968	2.9300e-003	0.2997	0.0794	2.7400e-003	0.0821		333.6177	333.6177	0.0128		333.9381
Total	**0.2169**	**0.4334**	**1.0748**	**3.4800e-003**	**0.2968**	**5.0200e-003**	**0.3018**	**0.0794**	**4.8300e-003**	**0.0842**		**366.6403**	**366.6403**	**0.0135**	**6.1000e-004**	**367.1570**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0853	0.4059	1.0511	3.3100e-003	0.2968	2.9300e-003	0.2997	0.0794	2.7400e-003	0.0821		333.6177	333.6177	0.0128		333.9381
Unmitigated	0.0853	0.4059	1.0511	3.3100e-003	0.2968	2.9300e-003	0.2997	0.0794	2.7400e-003	0.0821		333.6177	333.6177	0.0128		333.9381

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	58.46	13.04	5.57	106,138	106,138
Total	58.46	13.04	5.57	106,138	106,138

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.582298	0.039109	0.186022	0.123408	0.017184	0.005083	0.010615	0.023794	0.001605	0.001810	0.005454	0.002746	0.000871

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177
NaturalGas Unmitigated	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	280.682	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177
Total		**3.0300e-003**	**0.0275**	**0.0231**	**1.7000e-004**		**2.0900e-003**	**2.0900e-003**		**2.0900e-003**	**2.0900e-003**		**33.0214**	**33.0214**	**6.3000e-004**	**6.1000e-004**	**33.2177**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.280682	3.0300e-003	0.0275	0.0231	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003		33.0214	33.0214	6.3000e-004	6.1000e-004	33.2177
Total		**3.0300e-003**	**0.0275**	**0.0231**	**1.7000e-004**		**2.0900e-003**	**2.0900e-003**		**2.0900e-003**	**2.0900e-003**		**33.0214**	**33.0214**	**6.3000e-004**	**6.1000e-004**	**33.2177**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1286	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003
Unmitigated	0.1286	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0151					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003
Total	**0.1286**	**0.0000**	**5.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1600e-003**	**1.1600e-003**	**0.0000**		**1.2400e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0151					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1600e-003	1.1600e-003	0.0000		1.2400e-003
Total	**0.1286**	**0.0000**	**5.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.1600e-003**	**1.1600e-003**	**0.0000**		**1.2400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Richmond Country Club - Existing Operation
Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.30	1000sqft	0.12	5,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	156.72	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Please see CalEEMod Note 14

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblProjectCharacteristics	CO2IntensityFactor	641.35	156.72

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0235	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Energy	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	10.1691	10.1691	9.7000e-004	2.8000e-004	10.2769
Mobile	0.0120	0.0549	0.1384	4.6000e-004	0.0396	4.0000e-004	0.0400	0.0106	3.8000e-004	0.0110	0.0000	42.3424	42.3424	1.5600e-003	0.0000	42.3815
Waste						0.0000	0.0000		0.0000	0.0000	1.0008	0.0000	1.0008	0.0591	0.0000	2.4793
Water						0.0000	0.0000		0.0000	0.0000	0.2989	0.5060	0.8048	0.0308	7.4000e-004	1.7963
Total	**0.0361**	**0.0599**	**0.1426**	**4.9000e-004**	**0.0396**	**7.8000e-004**	**0.0404**	**0.0106**	**7.6000e-004**	**0.0114**	**1.2996**	**53.0176**	**54.3172**	**0.0925**	**1.0200e-003**	**56.9342**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0235	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Energy	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	10.1691	10.1691	9.7000e-004	2.8000e-004	10.2769
Mobile	0.0120	0.0549	0.1384	4.6000e-004	0.0396	4.0000e-004	0.0400	0.0106	3.8000e-004	0.0110	0.0000	42.3424	42.3424	1.5600e-003	0.0000	42.3815
Waste						0.0000	0.0000		0.0000	0.0000	1.0008	0.0000	1.0008	0.0591	0.0000	2.4793
Water						0.0000	0.0000		0.0000	0.0000	0.2989	0.5060	0.8048	0.0308	7.4000e-004	1.7963
Total	**0.0361**	**0.0599**	**0.1426**	**4.9000e-004**	**0.0396**	**7.8000e-004**	**0.0404**	**0.0106**	**7.6000e-004**	**0.0114**	**1.2996**	**53.0176**	**54.3172**	**0.0925**	**1.0200e-003**	**56.9342**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0120	0.0549	0.1384	4.6000e-004	0.0396	4.0000e-004	0.0400	0.0106	3.8000e-004	0.0110	0.0000	42.3424	42.3424	1.5600e-003	0.0000	42.3815
Unmitigated	0.0120	0.0549	0.1384	4.6000e-004	0.0396	4.0000e-004	0.0400	0.0106	3.8000e-004	0.0110	0.0000	42.3424	42.3424	1.5600e-003	0.0000	42.3815

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	58.46	13.04	5.57	106,138	106,138
Total	58.46	13.04	5.57	106,138	106,138

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.582298	0.039109	0.186022	0.123408	0.017184	0.005083	0.010615	0.023794	0.001605	0.001810	0.005454	0.002746	0.000871

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4.7020	4.7020	8.7000e-004	1.8000e-004	4.7774
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4.7020	4.7020	8.7000e-004	1.8000e-004	4.7774
NaturalGas Mitigated	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4671	5.4671	1.0000e-004	1.0000e-004	5.4996
NaturalGas Unmitigated	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4671	5.4671	1.0000e-004	1.0000e-004	5.4996

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	102449	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4671	5.4671	1.0000e-004	1.0000e-004	5.4996
Total		**5.5000e-004**	**5.0200e-003**	**4.2200e-003**	**3.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**5.4671**	**5.4671**	**1.0000e-004**	**1.0000e-004**	**5.4996**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	102449	5.5000e-004	5.0200e-003	4.2200e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	5.4671	5.4671	1.0000e-004	1.0000e-004	5.4996
Total		**5.5000e-004**	**5.0200e-003**	**4.2200e-003**	**3.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**5.4671**	**5.4671**	**1.0000e-004**	**1.0000e-004**	**5.4996**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	66144	4.7020	8.7000e-004	1.8000e-004	4.7774
Total		**4.7020**	**8.7000e-004**	**1.8000e-004**	**4.7774**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	66144	4.7020	8.7000e-004	1.8000e-004	4.7774
Total		**4.7020**	**8.7000e-004**	**1.8000e-004**	**4.7774**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0235	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Unmitigated	0.0235	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0207					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Total	**0.0235**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**1.0000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0207					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Total	**0.0235**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**1.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.8048	0.0308	7.4000e-004	1.7963
Unmitigated	0.8048	0.0308	7.4000e-004	1.7963

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.941989 / 0.577348	0.8048	0.0308	7.4000e-004	1.7963
Total		**0.8048**	**0.0308**	**7.4000e-004**	**1.7963**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.941989 / 0.577348	0.8048	0.0308	7.4000e-004	1.7963
Total		**0.8048**	**0.0308**	**7.4000e-004**	**1.7963**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.0008	0.0591	0.0000	2.4793
Unmitigated	1.0008	0.0591	0.0000	2.4793

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	4.93	1.0008	0.0591	0.0000	2.4793
Total		**1.0008**	**0.0591**	**0.0000**	**2.4793**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	4.93	1.0008	0.0591	0.0000	2.4793
Total		**1.0008**	**0.0591**	**0.0000**	**2.4793**

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A.2 - Construction Health Risk Assessment

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Construction Health Risk Assessment

Table of Contents

Scenario 1 (Offsite Receptors Exposed to Construction Duration) **A.2-1**

Scenario 2 (Phase 1 Receptors Exposed to Phase 2 Construction) **A.2-25**

Scenario 3 (Phase 2 Receptors Exposed to Phase 1 Construction) **A.2-32**

Note: Complete AERMOD files available upon request.

Scenario 1

Offsite Receptors Exposed to Construction Duration

Richmond Country Club Residential Project

Scenario 1 – Offsite Receptors Exposed to Construction Duration

Estimation of Annual Onsite Construction Emissions

Start of Construction	10/1/2021	1/1/2021	1/1/2022	
End of Construction	12/31/2021	12/31/2021	10/19/2023	**Total**
Number of Days	91	364	656	1,111
Number of Hours	2,184	8,736	15,744	26,664

Size of the construction area source (On-site): **108,128.7** **sq-meters**

Construction Phase	**Year**	**On-site Construction Activity**	**Unmitigated Onsite DPM (tons)**	**Unmitigated Onsite PM2.5 (tons)**
Phase 1	2021	On-site Demolition	0.0144	0.0146
Phase 1	2021	On-site Site Preparation	0.0094	0.0319
Phase 1	2021	On-site Grading	0.0274	0.0518
Phase 1	2021	On-site Building Construction	0.0027	0.0027
Phase 1	2022	On-site Building Construction	0.0834	0.0834
Phase 1	2022	On-site Architectural Coating	0.0047	0.0047
Phase 1	2022	On-site Paving	0.00522	0.00522
Phase 2	2022	On-site Building Construction	0.00799	0.00799
Phase 2	2023	On-site Building Construction	0.0622	0.0622
Phase 2	2023	On-site Architectural Coating	0.00407	0.00407
Phase 2	2023	On-site Paving	0.00469	0.00469

Total Unmitigated DPM (On-site) 2.262E-01 tons

Average Emission 2.054E+05 grams
2.139E-03 grams/sec
1.979E-08 grams/m2-sec

Total Unmitigated PM2.5 (On-site) 2.733E-01 tons

Average Emission 2.481E+05 grams
2.585E-03 grams/sec
2.391E-08 grams/m2-sec

Richmond Country Club Residential Project

Scenario 1 – Offsite Receptors Exposed to Construction Duration

Estimation of Annual Offsite Construction DPM Emissions (No Mitigation)

	Start of Construction		10/1/2021	1/1/2021	1/1/2022	
	End of Construction		12/31/2021	12/31/2021	10/19/2023	**Total**
	Number of Days		91	364	656	1,111
	Number of Hours		2,184	8,736	15,744	26,664

Road Segments

Road Segment 1: Going Away from Site to Richmond Pkwy
Road Segment 2: Coming to Site from Richmond Pkwy
Road Segment 3: Coming to Site from Giant Hwy
Road Segment 4: Going Away from site to Giant Hwy

		Phase 1 2021	Phase 1 2021	Phase 1 2021	Phase 1 2021	Phase 1 2022	Phase 1 2022	Phase 1 2022	Phase 2 2022	Phase 2 2023	Phase 2 2023	Phase 2 2023
	Construction Trip Type	Demolition	Site Preparation	Grading	Building Construction	Building Construction	Architectural Coating	Paving	Building Construction	Building Construction	Architectural Coating	Paving
DPM	Haul Truck	0.00001	0.00141	0.00202	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
DPM	Vendor Truck	0.00000	0.00000	0.00000	0.00003	0.00101	0.00000	0.00000	0.00001	0.00004	0.00000	0.00000
DPM	Worker	0.00001	0.00000	0.00001	0.00002	0.00064	0.00007	0.00001	0.00001	0.00008	0.00001	0.00001
DPM	Total	0.00002	0.00141	0.00203	0.00005	0.00165	0.00007	0.00001	0.00002	0.00012	0.00001	0.00001
PM2.5 Total	Haul Truck	0.00007	0.00956	0.01370	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
PM2.5 Total	Vendor Truck	0.00000	0.00000	0.00000	0.00031	0.01100	0.00000	0.00000	0.00011	0.00094	0.00000	0.00000
PM2.5 Total	Worker	0.00032	0.00019	0.00065	0.00082	0.02970	0.00310	0.00032	0.00041	0.00367	0.00050	0.00032
PM2.5 Total	Total	0.00039	0.00975	0.01430	0.00113	0.04070	0.00310	0.00032	0.00052	0.00461	0.00050	0.00032

		Haul Truck (tons)	**Vendor Truck (tons)**	**Worker (tons)**	**Total (tons)**
Total DPM		3.440E-03	1.090E-03	8.700E-04	5.400E-03
Average Emissions	Grams	3.124E+03	9.897E+02	7.900E+02	
	Grams/sec	3.254E-05	1.031E-05	8.230E-06	
	Default Vehicle Travel Distance in CalEEMod	20	7.3	10.8	

Vehicle Travel Distances in the Construction HRA (miles)

Road Segment 1 (mi)	0.39	0.39	0.39	miles
Road Segment 2 (mi)	0.48	0.48	0.48	miles
Road Segment 3 (mi)	0.57	0.57	0.57	miles
Road Segment 4 (mi)	0.54	0.54	0.54	miles

Trip Distribution (percent)

Road Segment 1	25%	25%	25%
Road Segment 2	25%	25%	25%
Road Segment 3	25%	25%	25%
Road Segment 4	25%	25%	25%

Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)

				Total
Road Segment 1 (mi)	1.606E-07	1.394E-07	7.519E-08	3.751E-07
Road Segment 2 (mi)	1.949E-07	1.692E-07	9.126E-08	4.553E-07
Road Segment 3 (mi)	2.308E-07	2.003E-07	1.081E-07	5.392E-07
Road Segment 4 (mi)	2.199E-07	1.909E-07	1.030E-07	5.138E-07

		Haul Truck (tons)	**Vendor Truck (tons)**	**Worker (tons)**	**Total (tons)**
Total PM2.5 Total		2.333E-02	1.236E-02	4.000E-02	7.569E-02
Average Emissions	Grams	2.118E+04	1.122E+04	3.632E+04	
	Grams/sec	2.207E-04	1.169E-04	3.784E-04	
	Default Vehicle Travel Distance in CalEEMod	20	7.3	10.8	

Vehicle Travel Distances in the Construction HRA (miles)

Road Segment 1 (mi)	0.39	0.39	0.39	miles
Road Segment 2 (mi)	0.48	0.48	0.48	miles
Road Segment 3 (mi)	0.57	0.57	0.57	miles
Road Segment 4 (mi)	0.54	0.54	0.54	miles

Trip Distribution (percent)

Road Segment 2	25%	25%	25%
Road Segment 3	25%	25%	25%
Road Segment 4	25%	25%	25%
	25%	25%	25%

Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)

				Total
Road Segment 1 (mi)	1.089E-06	1.580E-06	3.457E-06	6.126E-06
Road Segment 2 (mi)	1.322E-06	1.918E-06	4.196E-06	7.435E-06
Road Segment 3 (mi)	1.565E-06	2.272E-06	4.969E-06	8.806E-06
Road Segment 4 (mi)	1.491E-06	2.165E-06	4.735E-06	8.391E-06

Cancer Risk Calculations Using OEHHA/BAAQMD Cancer Risk Assumptions
Richmond Country Club Residential Project
Scenario 1 – Offsite Receptors Exposed to Construction Duration
Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Infant
UTM: 556742.99 4205200.38

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Cancer Risk (/million)
3rd Trimester	0.005526919	10	361	1	0.25	0.1
0-1	0.005526919	10	1090	1	1.00	0.9
1-<2	0.005526919	10	1090	1	0.80	0.7
					Total	1.71

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Child
UTM: 556742.99 4205200.38

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Construction Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Unit Risk Factor $(ug/m3)^{-1}$
1	0.005526919	3	572	1	1.00	0.1
2	0.005526919	3	572	1	1.00	0.1
3	0.005526919	3	572	1	0.05	0.0
					Total	0.29

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Adult
UTM: 556742.99 4205200.38

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Construction Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Unit Risk Factor $(ug/m3)^{-1}$
1	0.005526919	1	261	0.73	1.00	0.0
2	0.005526919	1	261	0.73	1.00	0.0
3	0.005526919	1	261	0.73	0.05	0.0
					Total	0.03

OEHHA Cancer/BAAQMD Risk Methodology

Cancer Risk = DPM x CPF x ASF x DBR x ED x EF x TAH x AF/ AT

Cancer Risk = probability of an individual contracting cancer out of a population of 1 million people over a lifetime exposure duration of 30 years

DPM = long-term average concentration of diesel PM as predicted by the air dispersion model (ug/m3)

CPF = cancer potency factor for DPM (mg.ke-day)

ASF = age sensitivity factors that are dependent on the age of the exposed individual (unitless)

DBR = daily breathing rates that are dependent on the age of the exposed individual (liters/kg-day)

ED = exposure duration (years)

EF = exposure frequency (days/year)

TAH = time at home factors that are dependent on the age of the exposed individual (%)

AT = averaging time over the lifetime of an individual (days)

AF = adjustment factor for workers and students (unitless)

Cancer Risk Equation Values as recommended by the California Office of Environmental Health Hazards Assessment

Richmond Country Club Residential Project

Scenario 1 – Offsite Receptors Exposed to Construction Duration

UTM: 556742.99 4205200.38

Estimates of Chronic Non-Cancer Hazard Index (CNCHI)

Unmitigated

Chronic Non-Cancer Hazard Index at the Maximum Impacted Sensitive Receptor

Reference Exposure Level (REL) for DPM: 5 ug/m3

CNCHI = DPM/REL

X (m)	Y (m)	Average DPM (ug/m3)	Max DPM (ug/m3)	CNCHI
556742.99	4205200.38	0.0055	0.0055	0.00111

Unmitigated

Annual PM2.5 Total (Exhaust + Fugitive Dust)

X (m)	Y (m)	Average PM2.5 Total (ug/m3)	Max PM2.5 (ug/m3)
556742.99	4205200.38	0.0067	0.0067

Richmond Country Club Residential Project

Construction Annual DPM Emissions (PM2.5 Exhaust)

Unmitigated Concentrations

		Maximum DPM (ug/m3)	**MIR UTM** X	Y
Annual Average Onsite Total PM2.5 Emission Rate (grams/m2/sec):	1.98E-08	5.5269E-03	556742.99	4205200.38
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 1 (grams/sec):	3.75E-07			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 2 (grams/sec):	4.55E-07			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 3 (grams/sec):	5.39E-07			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 4 (grams/sec):	5.14E-07			

X	Y	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Onsite Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 1 Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 2 Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 3 Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 4 Annual DPM Exhaust w/Actual Emissions (ug/m3)	**Total DPM (ug/m3)**
556742.99	4205200.38	279326.26727	0.11546	0.10972	0.14306	0.14578	5.53E-03	4.33E-08	5.00E-08	7.71E-08	7.49E-08	5.5269E-03
556750.13	4205224.65	272467.05345	0.11105	0.10619	0.13579	0.13825	5.39E-03	4.17E-08	4.83E-08	7.32E-08	7.10E-08	5.3912E-03
556734.43	4205177.53	271709.43970	0.11964	0.11296	0.15063	0.15360	5.38E-03	4.49E-08	5.14E-08	8.12E-08	7.89E-08	5.3762E-03
556795.98	4204741.69	254901.73087	0.30115	0.25748	0.55049	0.57315	5.04E-03	1.13E-07	1.17E-07	2.97E-07	2.94E-07	5.0442E-03
556760.13	4205256.06	253679.53737	0.10585	0.10193	0.12803	0.13022	5.02E-03	3.97E-08	4.64E-08	6.90E-08	6.69E-08	5.0195E-03
556789.85	4204755.72	248942.29915	0.28858	0.24757	0.51684	0.53741	4.93E-03	1.08E-07	1.13E-07	2.79E-07	2.76E-07	4.9263E-03
556804.75	4204686.47	239294.60481	0.35193	0.29531	0.70528	0.73856	4.73E-03	1.32E-07	1.34E-07	3.80E-07	3.79E-07	4.7356E-03
556815.27	4204636.52	234575.04099	0.41169	0.33946	0.92377	0.97456	4.64E-03	1.54E-07	1.55E-07	4.98E-07	5.01E-07	4.6425E-03
556795.11	4204717.15	234367.02976	0.31986	0.27083	0.60692	0.63329	4.64E-03	1.20E-07	1.23E-07	3.27E-07	3.25E-07	4.6380E-03
556810.01	4204656.67	233617.78105	0.38517	0.31978	0.82182	0.86409	4.62E-03	1.44E-07	1.46E-07	4.43E-07	4.44E-07	4.6235E-03
556797.74	4204703.13	231901.33795	0.33298	0.28062	0.64685	0.67595	4.59E-03	1.25E-07	1.28E-07	3.49E-07	3.47E-07	4.5893E-03
556822.28	4204603.21	231413.03735	0.46015	0.37470	1.14228	1.21342	4.58E-03	1.73E-07	1.71E-07	6.16E-07	6.23E-07	4.5803E-03
556825.78	4204588.31	231175.70230	0.48504	0.39276	1.27215	1.35670	4.57E-03	1.82E-07	1.79E-07	6.86E-07	6.97E-07	4.5757E-03
556817.02	4204618.11	227089.55338	0.43553	0.35639	1.02898	1.08920	4.49E-03	1.63E-07	1.62E-07	5.55E-07	5.60E-07	4.4946E-03
556828.41	4204570.78	226606.47523	0.51503	0.41401	1.45389	1.55879	4.48E-03	1.93E-07	1.88E-07	7.84E-07	8.01E-07	4.4855E-03
556831.04	4204555.88	224003.57182	0.54329	0.43407	1.65038	1.77939	4.43E-03	2.04E-07	1.98E-07	8.90E-07	9.14E-07	4.4343E-03
556720.15	4205193.24	222184.72390	0.11588	0.10938	0.14530	0.14812	4.40E-03	4.35E-08	4.98E-08	7.83E-08	7.61E-08	4.3963E-03
556728.71	4205220.36	221552.82190	0.11115	0.10570	0.13655	0.13904	4.38E-03	4.17E-08	4.81E-08	7.36E-08	7.14E-08	4.3838E-03
556738.71	4205243.21	220699.10955	0.10738	0.10275	0.13037	0.13267	4.37E-03	4.03E-08	4.68E-08	7.03E-08	6.82E-08	4.3669E-03
556832.80	4204536.60	215997.58007	0.58047	0.45977	1.96983	2.14237	4.27E-03	2.18E-07	2.09E-07	1.06E-06	1.10E-06	4.2763E-03
556835.43	4204523.45	213882.06160	0.61021	0.48069	2.27606	2.49568	4.23E-03	2.29E-07	2.19E-07	1.23E-06	1.28E-06	4.2348E-03
556838.93	4204502.41	208674.42756	0.66107	0.51604	2.98024	3.32752	4.13E-03	2.48E-07	2.35E-07	1.61E-06	1.71E-06	4.1326E-03
556841.56	4204486.64	204583.30957	0.70304	0.54504	3.83726	4.37596	4.05E-03	2.64E-07	2.48E-07	2.07E-06	2.25E-06	4.0527E-03
556846.82	4204465.60	202817.79792	0.76974	0.59170	6.21487	7.42750	4.01E-03	2.89E-07	2.69E-07	3.35E-06	3.82E-06	4.0206E-03
557221.73	4204254.39	201727.11691	7.13531	6.57379	6.54257	6.53226	3.99E-03	2.68E-06	2.99E-06	3.53E-06	3.36E-06	4.0039E-03
557208.53	4204244.85	200550.87778	8.45881	7.67197	7.60241	7.55852	3.97E-03	3.17E-06	3.49E-06	4.10E-06	3.88E-06	3.9827E-03
557193.13	4204234.59	199811.85706	10.56584	9.43972	9.29259	9.18463	3.95E-03	3.96E-06	4.30E-06	5.01E-06	4.72E-06	3.9714E-03
557237.13	4204261.72	197965.51798	6.16509	5.79897	5.71235	5.71680	3.92E-03	2.31E-06	2.64E-06	3.08E-06	2.94E-06	3.9279E-03
556847.70	4204454.21	196809.73499	0.80307	0.61395	8.38486	10.17559	3.89E-03	3.01E-07	2.80E-07	4.52E-06	5.23E-06	3.9044E-03
556764.43	4204760.98	196784.98628	0.27515	0.23469	0.48822	0.50709	3.89E-03	1.03E-07	1.07E-07	2.63E-07	2.61E-07	3.8943E-03
557252.53	4204267.59	192587.40898	5.46100	5.25000	5.09117	5.09828	3.81E-03	2.05E-06	2.39E-06	2.75E-06	2.62E-06	3.8203E-03
557181.39	4204223.59	192424.44390	13.05358	11.62781	11.23244	11.02877	3.81E-03	4.90E-06	5.29E-06	6.06E-06	5.67E-06	3.8292E-03
557270.86	4204273.46	185490.84617	4.84402	4.77097	4.52153	4.52683	3.67E-03	1.82E-06	2.17E-06	2.44E-06	2.33E-06	3.6788E-03
556847.08	4204435.35	182237.70377	0.85342	0.64588	12.32453	14.16987	3.61E-03	3.20E-07	2.94E-07	6.65E-06	7.28E-06	3.6202E-03
556851.51	4204417.62	179293.69595	0.92435	0.69446	17.65347	19.17750	3.55E-03	3.47E-07	3.16E-07	9.52E-06	9.85E-06	3.5675E-03
557288.08	4204277.27	177144.15050	4.37965	4.43567	4.08181	4.08814	3.50E-03	1.64E-06	2.02E-06	2.20E-06	2.10E-06	3.5129E-03
557171.13	4204208.19	174386.60772	16.73212	15.07976	14.01510	13.56191	3.45E-03	6.28E-06	6.87E-06	7.56E-06	6.97E-06	3.4780E-03
556750.41	4204751.33	171993.96259	0.27577	0.23344	0.49428	0.51354	3.40E-03	1.03E-07	1.06E-07	2.67E-07	2.64E-07	3.4038E-03
557300.26	4204282.34	171978.60006	3.96043	4.12513	3.72345	3.73894	3.40E-03	1.49E-06	1.88E-06	2.01E-06	1.92E-06	3.4100E-03
556727.29	4205280.33	168101.71136	0.10102	0.09696	0.12131	0.12336	3.33E-03	3.79E-08	4.41E-08	6.54E-08	6.34E-08	3.3262E-03
556758.95	4204706.70	166090.09969	0.31003	0.25857	0.59295	0.61842	3.29E-03	1.16E-07	1.18E-07	3.20E-07	3.18E-07	3.2871E-03
556855.95	4204385.33	164776.24082	1.05092	0.77753	19.86724	21.04695	3.26E-03	3.94E-07	3.54E-07	1.07E-05	1.08E-05	3.2825E-03
556753.05	4204721.31	164075.72307	0.29667	0.24843	0.55425	0.57721	3.25E-03	1.11E-07	1.13E-07	2.99E-07	2.97E-07	3.2472E-03
556759.79	4204692.65	162105.32282	0.32111	0.26636	0.62831	0.65614	3.21E-03	1.20E-07	1.21E-07	3.39E-07	3.37E-07	3.2083E-03
557316.50	4204284.37	161417.58613	3.52982	3.86709	3.36149	3.37762	3.19E-03	1.32E-06	1.76E-06	1.81E-06	1.74E-06	3.2004E-03
556861.01	4204366.33	159963.10955	1.14922	0.84354	22.11105	23.42206	3.16E-03	4.31E-07	3.84E-07	1.19E-05	1.20E-05	3.1898E-03
556761.19	4204678.03	158626.17938	0.33349	0.27507	0.66943	0.70011	3.14E-03	1.25E-07	1.25E-07	3.61E-07	3.60E-07	3.1395E-03
556731.57	4205298.89	158117.02524	0.09838	0.09471	0.11761	0.11956	3.13E-03	3.69E-08	4.31E-08	6.34E-08	6.14E-08	3.1287E-03
556768.86	4204647.06	156910.40089	0.36531	0.29804	0.78117	0.82006	3.10E-03	1.37E-07	1.36E-07	4.21E-07	4.21E-07	3.1057E-03
557331.73	4204291.48	156471.34197	3.15071	3.57134	3.04186	3.05969	3.10E-03	1.18E-06	1.63E-06	1.64E-06	1.57E-06	3.1019E-03
557223.12	4204216.36	155286.81212	9.50330	9.00878	7.80589	7.66815	3.07E-03	3.56E-06	4.10E-06	4.21E-06	3.94E-06	3.0883E-03
557256.62	4204231.59	153988.10573	6.76385	6.77517	5.75939	5.70505	3.05E-03	2.54E-06	3.08E-06	3.11E-06	2.93E-06	3.0584E-03
556864.18	4204351.14	153665.47905	1.22744	0.89467	22.89097	24.28252	3.04E-03	4.60E-07	4.07E-07	1.23E-05	1.25E-05	3.0661E-03
557271.84	4204238.70	153228.09698	5.95637	6.10665	5.12872	5.09339	3.03E-03	2.23E-06	2.78E-06	2.77E-06	2.62E-06	3.0421E-03
556769.76	4204632.60	152994.29613	0.37959	0.30780	0.83804	0.88134	3.03E-03	1.42E-07	1.40E-07	4.52E-07	4.53E-07	3.0283E-03
556774.54	4204616.02	152861.91949	0.40009	0.32249	0.92194	0.97211	3.02E-03	1.50E-07	1.47E-07	4.97E-07	4.99E-07	3.0258E-03
556778.19	4204603.09	152616.13997	0.41713	0.33461	0.99728	1.05391	3.02E-03	1.56E-07	1.52E-07	5.38E-07	5.42E-07	3.0210E-03
557289.10	4204245.80	151294.42753	5.28152	5.53678	4.56520	4.54272	2.99E-03	1.98E-06	2.52E-06	2.46E-06	2.33E-06	3.0028E-03
556732.00	4204752.21	151265.17248	0.26786	0.22567	0.47803	0.49633	2.99E-03	1.00E-07	1.03E-07	2.58E-07	2.55E-07	2.9936E-03
557241.39	4204220.42	150444.94757	8.03463	7.88575	6.66076	6.56291	2.98E-03	3.01E-06	3.59E-06	3.59E-06	3.37E-06	2.9902E-03
556784.99	4204571.52	149513.29176	0.46098	0.36512	1.22173	1.29911	2.96E-03	1.73E-07	1.66E-07	6.59E-07	6.67E-07	2.9599E-03
557210.94	4204203.17	148086.04063	12.12918	11.37915	9.50893	9.21532	2.93E-03	4.55E-06	5.18E-06	5.13E-06	4.73E-06	2.9496E-03
556787.53	4204553.79	146116.86952	0.48669	0.38248	1.37894	1.47196	2.89E-03	1.83E-07	1.74E-07	7.44E-07	7.56E-07	2.8929E-03
556687.31	4205243.21	145550.95065	0.10564	0.09987	0.13089	0.13331	2.88E-03	3.96E-08	4.55E-08	7.06E-08	6.85E-08	2.8801E-03
556790.69	4204541.12	145265.57265	0.50814	0.39727	1.52314	1.63147	2.87E-03	1.91E-07	1.81E-07	8.21E-07	8.38E-07	2.8762E-03
556867.34	4204334.04	145165.29940	1.31652	0.95160	23.29821	24.70860	2.87E-03	4.94E-07	4.33E-07	1.26E-05	1.27E-05	2.8984E-03
557306.35	4204246.82	144088.38663	4.83240	5.25875	4.15317	4.13281	2.85E-03	1.81E-06	2.39E-06	2.24E-06	2.12E-06	2.8595E-03
556697.30	4205268.91	143319.43669	0.10205	0.09710	0.12406	0.12625	2.84E-03	3.83E-08	4.42E-08	6.69E-08	6.49E-08	2.8359E-03
557355.08	4204290.46	143117.59764	2.87950	3.44935	2.74694	2.76104	2.83E-03	1.08E-06	1.57E-06	1.48E-06	1.42E-06	2.8372E-03
556793.23	4204525.29	142401.76078	0.53446	0.41489	1.72719	1.85798	2.82E-03	2.00E-07	1.89E-07	9.31E-07	9.55E-07	2.8198E-03
556755.93	4204645.66	142333.60477	0.35712	0.29002	0.76020	0.79737	2.82E-03	1.34E-07	1.32E-07	4.10E-07	4.10E-07	2.8173E-03
557319.55	4204249.86	140135.02998	4.44740	4.98465	3.83671	3.82067	2.77E-03	1.67E-06	2.27E-06	2.07E-06	1.96E-06	2.7806E-03
556711.58	4205297.46	140071.22430	0.09812	0.09404	0.11775	0.11971	2.77E-03	3.68E-08	4.28E-08	6.35E-08	6.15E-08	2.7716E-03
556766.11	4204600.00	138293.62026	0.40871	0.32611	0.97321	1.02733	2.74E-03	1.53E-07	1.48E-07	5.25E-07	5.28E-07	2.7376E-03
557370.30	4204294.52	137524.11239	2.65431	3.28422	2.53759	2.55150	2.72E-03	9.96E-07	1.50E-06	1.37E-06	1.31E-06	2.7262E-03
556717.10	4204750.46	136929.16827	0.26285	0.22040	0.46879	0.48655	2.71E-03	9.86E-08	1.00E-07	2.53E-07	2.50E-07	2.7099E-03
557196.73	4204187.94	136898.04701	16.02525	15.08471	12.01208	11.44239	2.71E-03	6.01E-06	6.87E-06	6.48E-06	5.88E-06	2.7339E-03
556728.31	4204712.88	136307.00394	0.29034	0.24063	0.54546	0.56782	2.70E-03	1.09E-07	1.10E-07	2.94E-07	2.92E-07	2.6977E-03
556791.33	4204508.83	134129.00419	0.55517	0.42704	1.92348	2.07448	2.65E-03	2.08E-07	1.94E-07	1.04E-06	1.07E-06	2.6563E-03
556797.03	4204491.73	134052.60765	0.59234	0.45250	2.29897	2.49512	2.65E-03	2.22E-07	2.06E-07	1.24E-06	1.28E-06	2.6553E-03
557336.81	4204252.91	133552.60486	3.94887	4.66784	3.44840	3.43684	2.64E-03	1.48E-06	2.13E-06	1.86E-06	1.77E-06	2.6497E-03
556805.63	4204462.97	132410.35618	0.66040	0.49841	3.23012	3.53856	2.62E-03	2.48E-07	2.27E-07	1.74E-06	1.82E-06	2.6239E-03
556734.50	4204678.88	132217.76414	0.31674	0.25929	0.62806	0.65576	2.62E-03	1.19E-07	1.18E-07	3.39E-07	3.37E-07	2.6169E-03
557388.57	4204296.55	130394.67679	2.46399	3.17141	2.34526	2.35760	2.58E-03	9.24E-07	1.44E-06	1.26E-06	1.21E-06	2.5848E-03
557173.02	4205341.60	129440.49884	0.10908	0.10782	0.11522	0.11634	2.56E-03	4.09E-08	4.91E-08	6.21E-08	5.98E-08	2.5613E-03
557195.09	4205328.14	128760.11472	0.11113	0.11049	0.11572	0.11671	2.55E-03	4.17E-08	5.03E-08	6.24E-08	6.00E-08	2.5478E-03
556775.66	4204537.62	127977.32607	0.49076	0.38103	1.43660	1.53297	2.53E-03	1.84E-07	1.73E-07	7.75E-07	7.88E-07	2.5340E-03
556809.13	4204440.18	126906.84393	0.71143	0.53096	4.12115	4.50115	2.51E-03	2.67E-07	2.42E-07	2.22E-06	2.31E-06	2.5160E-03
557216.45	4205316.48	126711.71543	0.11268	0.11274	0.11611	0.11703	2.51E-03	4.23E-08	5.13E-08	6.26E-08	6.01E-08	2.5073E-03
556741.32	4204636.66	126414.29756	0.35371	0.28483	0.75937	0.79622	2.50E-03	1.33E-07	1.30E-07	4.09E-07	4.09E-07	2.5023E-03
556704.83	4204746.08	126148.30141	0.26022	0.21712	0.46538	0.48292	2.50E-03	9.76E-08	9.88E-08	2.51E-07	2.48E-07	2.4966E-03
556777.07	4204525.81	125554.23909	0.50780	0.39208	1.55841	1.66658	2.48E-03	1.90E-07	1.79E-07	8.40E-07	8.56E-07	2.4862E-03
557160.09	4205355.07	125459.58002	0.10676	0.10536	0.11387	0.11502	2.48E-03	4.00E-08	4.80E-08	6.14E-08	5.91E-08	2.4825E-03
556812.64	4204427.03	125197.86867	0.74756	0.55462	4.82269	5.24197	2.48E-03	2.80E-07	2.53E-07	2.60E-06	2.69E-06	2.4830E-03
556745.59	4204614.05	123821.11028	0.37643	0.30040	0.84972	0.89331	2.45E-03	1.41E-07	1.37E-07	4.58E-07	4.59E-07	2.4511E-03
557141.79	4204170.05	123780.81583	33.62563	33.58189	27.90410	24.67476	2.45E-03	1.26E-05	1.53E-05	1.50E-05	1.27E-05	2.5047E-03
557476.33	4204953.07	123693.66833	0.18318	0.22282	0.21828	0.22241	2.45E-03	6.87E-08	1.01E-07	1.18E-07	1.14E-07	2.4478E-03
556712.86	4204710.07	123369.92820	0.28439	0.23443	0.53386	0.55545	2.44E-03	1.07E-07	1.07E-07	2.88E-07	2.85E-07	2.4418E-03
557409.89	4204298.58	123330.60532	2.28958	3.07237	2.16317	2.17355	2.44E-03	8.59E-07	1.40E-06	1.17E-06	1.12E-06	2.4447E-03
556748.40	4204600.84	122566.10375	0.39092	0.31031	0.91155	0.95993	2.43E-03	1.47E-07	1.41E-07	4.92E-07	4.93E-07	2.4263E-03
557359.14	4204250.88	121630.84296	3.50791	4.47178	3.04604	3.03451	2.41E-03	1.32E-06	2.04E-06	1.64E-06	1.56E-06	2.4131E-03
557178.40	4205350.76	121579.79888	0.10772	0.10648	0.11332	0.11441	2.41E-03	4.04E-08	4.85E-08	6.11E-08	5.88E-08	2.4058E-03
557200.48	4205337.30	121443.76902	0.10981	0.10909	0.11384	0.11486	2.40E-03	4.12E-08	4.97E-08	6.14E-08	5.90E-08	2.4031E-03

557476.76	4204978.92	121374.90402	0.17673	0.21066	0.20618	0.20992	2.40E-03	6.63E-08	9.59E-08	1.11E-07	1.08E-07	2.4019E-03
557491.66	4204930.28	120958.10251	0.19414	0.23600	0.23012	0.23445	2.39E-03	7.28E-08	1.07E-07	1.24E-07	1.20E-07	2.3937E-03
557219.68	4205325.09	120875.74105	0.11125	0.11132	0.11435	0.11524	2.39E-03	4.17E-08	5.07E-08	6.17E-08	5.92E-08	2.3918E-03
557141.79	4205371.76	120218.01503	0.10381	0.10229	0.11230	0.11344	2.38E-03	3.89E-08	4.66E-08	6.06E-08	5.83E-08	2.3788E-03
556683.03	4205294.61	119824.62991	0.09777	0.09309	0.11845	0.12050	2.37E-03	3.67E-08	4.24E-08	6.39E-08	6.19E-08	2.3710E-03
557373.35	4204259.00	119537.07939	3.13309	4.11583	2.76908	2.76381	2.37E-03	1.18E-06	1.87E-06	1.49E-06	1.42E-06	2.3711E-03
556719.04	4204674.38	119088.38684	0.31050	0.25258	0.61584	0.64259	2.36E-03	1.16E-07	1.15E-07	3.32E-07	3.30E-07	2.3571E-03
557240.68	4205314.32	118330.10128	0.11204	0.11324	0.11411	0.11499	2.34E-03	4.20E-08	5.16E-08	6.15E-08	5.91E-08	2.3415E-03
556755.99	4204562.35	118168.83150	0.43671	0.34108	1.13475	1.20143	2.34E-03	1.64E-07	1.55E-07	6.12E-07	6.17E-07	2.3396E-03
557269.25	4204194.92	117970.00915	7.97401	8.66014	5.95017	5.78842	2.33E-03	2.99E-06	3.94E-06	3.21E-06	2.97E-06	2.3472E-03
557165.48	4205364.22	117678.70834	0.10549	0.10409	0.11207	0.11318	2.33E-03	3.96E-08	4.74E-08	6.04E-08	5.82E-08	2.3286E-03
556654.47	4205246.06	116711.40850	0.10359	0.09729	0.13091	0.13342	2.31E-03	3.89E-08	4.43E-08	7.06E-08	6.86E-08	2.3094E-03
557286.20	4204200.22	116692.11545	6.88560	7.77567	5.22317	5.10315	2.31E-03	2.58E-06	3.54E-06	2.82E-06	2.62E-06	2.3204E-03
556665.89	4205273.19	116373.38399	0.10010	0.09466	0.12370	0.12593	2.30E-03	3.75E-08	4.31E-08	6.67E-08	6.47E-08	2.3027E-03
557476.33	4205039.40	115848.63476	0.16426	0.18792	0.18490	0.18677	2.29E-03	6.16E-08	8.56E-08	9.97E-08	9.60E-08	2.2925E-03
557126.71	4205385.22	115427.79642	0.10143	0.09991	0.11110	0.11231	2.28E-03	3.80E-08	4.55E-08	5.99E-08	5.77E-08	2.2840E-03
556810.01	4204409.51	115080.09280	0.77073	0.56539	4.95325	5.31897	2.28E-03	2.89E-07	2.57E-07	2.67E-06	2.73E-06	2.2829E-03
557485.97	4205021.43	114979.91222	0.16875	0.19523	0.19105	0.19319	2.27E-03	6.33E-08	8.89E-08	1.03E-07	9.93E-08	2.2753E-03
557428.16	4204291.48	114685.16663	2.23744	3.16523	2.06879	2.07492	2.27E-03	8.39E-07	1.44E-06	1.12E-06	1.07E-06	2.2736E-03
557257.59	4204185.91	114610.41503	9.28829	9.92705	6.66416	6.43708	2.27E-03	3.48E-06	4.52E-06	3.59E-06	3.31E-06	2.2826E-03
556726.14	4204634.98	114504.04500	0.34340	0.27507	0.73149	0.76604	2.27E-03	1.29E-07	1.25E-07	3.94E-07	3.94E-07	2.2666E-03
557208.55	4205345.37	114277.18956	0.10856	0.10792	0.11195	0.11293	2.26E-03	4.07E-08	4.91E-08	6.04E-08	5.80E-08	2.2613E-03
557186.48	4205358.83	114126.74340	0.10658	0.10540	0.11150	0.11254	2.26E-03	4.00E-08	4.80E-08	6.01E-08	5.78E-08	2.2583E-03
556687.30	4204742.57	113596.54661	0.25472	0.21128	0.45557	0.47250	2.25E-03	9.56E-08	9.62E-08	2.46E-07	2.43E-07	2.2483E-03
556684.45	4205311.74	113445.58126	0.09540	0.09107	0.11487	0.11680	2.24E-03	3.58E-08	4.15E-08	6.19E-08	6.00E-08	2.2448E-03
557243.37	4205322.94	113332.95432	0.11059	0.11179	0.11238	0.11324	2.24E-03	4.15E-08	5.09E-08	6.06E-08	5.82E-08	2.2426E-03
557476.33	4205060.44	113201.85896	0.15960	0.18030	0.17788	0.18007	2.24E-03	5.99E-08	8.21E-08	9.59E-08	9.25E-08	2.2401E-03
557497.80	4205007.85	112979.25956	0.17289	0.20098	0.19585	0.19828	2.24E-03	6.49E-08	9.15E-08	1.06E-07	1.02E-07	2.2357E-03
557224.53	4205337.48	112886.07630	0.10934	0.10933	0.11189	0.11274	2.23E-03	4.10E-08	4.98E-08	6.03E-08	5.79E-08	2.2337E-03
557303.69	4204202.34	112760.05465	6.09271	7.22490	4.63764	4.54109	2.23E-03	2.29E-06	3.29E-06	2.50E-06	2.33E-06	2.2414E-03
556774.23	4204492.99	112695.67959	0.54498	0.41317	1.87339	2.00782	2.23E-03	2.04E-07	1.88E-07	1.01E-06	1.03E-06	2.2322E-03
557155.73	4204161.98	112544.27437	30.87041	31.53162	22.72346	20.19687	2.23E-03	1.16E-05	1.44E-05	1.23E-05	1.04E-05	2.2753E-03
557519.28	4204935.10	112538.61334	0.19425	0.23446	0.22551	0.22954	2.23E-03	7.29E-08	1.07E-07	1.22E-07	1.18E-07	2.2271E-03
557147.17	4205380.91	112508.72462	0.10262	0.10109	0.11057	0.11171	2.23E-03	3.85E-08	4.60E-08	5.96E-08	5.74E-08	2.2263E-03
557269.22	4205307.86	111592.60137	0.11218	0.11445	0.11335	0.11401	2.21E-03	4.21E-08	5.21E-08	6.11E-08	5.86E-08	2.2082E-03
557509.20	4204989.88	111502.60762	0.17853	0.20919	0.20285	0.20541	2.21E-03	6.70E-08	9.52E-08	1.09E-07	1.06E-07	2.2065E-03
557475.01	4205076.22	111411.91151	0.15621	0.17490	0.17256	0.17482	2.20E-03	5.86E-08	7.96E-08	9.30E-08	8.98E-08	2.2047E-03
557109.30	4205397.78	111309.76679	0.09911	0.09756	0.11014	0.11140	2.20E-03	3.72E-08	4.44E-08	5.94E-08	5.72E-08	2.2025E-03
556694.31	4204710.07	111120.73822	0.27515	0.22568	0.51326	0.53352	2.20E-03	1.03E-07	1.03E-07	2.77E-07	2.74E-07	2.1994E-03
557173.56	4205372.30	110410.26913	0.10444	0.10306	0.11039	0.11146	2.18E-03	3.92E-08	4.69E-08	5.95E-08	5.73E-08	2.1848E-03
557319.59	4204206.04	110349.76614	5.43592	6.72684	4.17778	4.10066	2.18E-03	2.04E-06	3.06E-06	2.25E-06	2.11E-06	2.1928E-03
556759.36	4204523.57	110016.15825	0.48299	0.37026	1.41727	1.50757	2.18E-03	1.81E-07	1.69E-07	7.64E-07	7.75E-07	2.1786E-03
556732.38	4204597.75	109863.87610	0.37840	0.29846	0.87262	0.91729	2.17E-03	1.42E-07	1.36E-07	4.71E-07	4.71E-07	2.1750E-03
557394.66	4204255.95	109839.69109	2.86706	4.04057	2.50753	2.50051	2.17E-03	1.08E-06	1.84E-06	1.35E-06	1.28E-06	2.1788E-03
556704.99	4204671.57	109310.38903	0.30379	0.24586	0.60087	0.62651	2.16E-03	1.14E-07	1.12E-07	3.24E-07	3.22E-07	2.1637E-03
557233.43	4204170.90	109270.39031	13.15590	13.51213	8.59542	8.15855	2.16E-03	4.94E-06	6.15E-06	4.63E-06	4.19E-06	2.1819E-03
556694.45	4205334.59	108905.63016	0.09258	0.08881	0.11053	0.11234	2.15E-03	3.47E-08	4.04E-08	5.96E-08	5.77E-08	2.1550E-03
557442.37	4204286.40	108864.06614	2.19454	3.23578	1.99728	2.00051	2.15E-03	8.23E-07	1.47E-06	1.08E-06	1.03E-06	2.1584E-03
557283.76	4205304.09	108309.32875	0.11236	0.11520	0.11322	0.11395	2.14E-03	4.21E-08	5.24E-08	6.10E-08	5.85E-08	2.1432E-03
556760.13	4205390.27	108041.36928	0.08716	0.08498	0.10303	0.10463	2.14E-03	3.27E-08	3.87E-08	5.56E-08	5.38E-08	2.1379E-03
557475.89	4205095.06	107952.78960	0.14966	0.16833	0.16539	0.16733	2.14E-03	5.61E-08	7.66E-08	8.92E-08	8.60E-08	2.1362E-03
557132.10	4205394.37	107825.31775	0.10030	0.09877	0.10937	0.11054	2.13E-03	3.76E-08	4.50E-08	5.90E-08	5.68E-08	2.1336E-03
557247.68	4205332.09	107741.24932	0.10901	0.11028	0.11042	0.11123	2.13E-03	4.09E-08	5.02E-08	5.95E-08	5.72E-08	2.1319E-03
556822.39	4204365.07	107638.74716	0.91043	0.65385	6.76394	7.15006	2.13E-03	3.42E-07	2.98E-07	3.65E-06	3.67E-06	2.1377E-03
557337.07	4204209.22	107623.91475	4.89500	6.35318	3.78157	3.71851	2.13E-03	1.84E-06	2.89E-06	2.04E-06	1.91E-06	2.1381E-03
557532.86	4204949.56	107567.28952	0.18699	0.22629	0.21651	0.22028	2.13E-03	7.01E-08	1.03E-07	1.17E-07	1.13E-07	2.1287E-03
556741.10	4204563.47	107527.25237	0.41802	0.32513	1.05515	1.11389	2.13E-03	1.57E-07	1.48E-07	5.69E-07	5.72E-07	2.1290E-03
557091.53	4205409.63	107275.68888	0.09694	0.09532	0.10925	0.11060	2.12E-03	3.64E-08	4.34E-08	5.89E-08	5.68E-08	2.1227E-03
556742.99	4205381.70	106624.26329	0.08779	0.08532	0.10369	0.10530	2.11E-03	3.29E-08	3.88E-08	5.59E-08	5.41E-08	2.1098E-03
557408.88	4204257.98	105858.09917	2.67051	3.90533	2.33970	2.33375	2.09E-03	1.00E-06	1.78E-06	1.26E-06	1.20E-06	2.0997E-03
557113.61	4205404.78	105493.45406	0.09830	0.09673	0.10883	0.11006	2.09E-03	3.69E-08	4.40E-08	5.87E-08	5.65E-08	2.0875E-03
557155.25	4205388.99	105479.50236	0.10167	0.10020	0.10889	0.10999	2.09E-03	3.81E-08	4.56E-08	5.87E-08	5.65E-08	2.0872E-03
556673.28	4204740.82	105195.71558	0.24968	0.20623	0.44578	0.46213	2.08E-03	9.37E-08	9.39E-08	2.40E-07	2.37E-07	2.0820E-03
556779.33	4204455.96	105037.87957	0.60442	0.44978	2.44109	2.61974	2.08E-03	2.27E-07	2.05E-07	1.32E-06	1.35E-06	2.0813E-03
557539.44	4204967.97	104507.37247	0.18170	0.21790	0.20759	0.21109	2.07E-03	6.82E-08	9.92E-08	1.12E-07	1.08E-07	2.0681E-03
556683.91	4204706.70	104503.64433	0.27180	0.22203	0.50727	0.52710	2.07E-03	1.02E-07	1.01E-07	2.74E-07	2.71E-07	2.0684E-03
557477.64	4205112.15	104479.25244	0.14456	0.16251	0.15924	0.16105	2.07E-03	5.42E-08	7.40E-08	8.59E-08	8.27E-08	2.0675E-03
557355.62	4204210.81	104411.39363	4.49032	6.13158	3.46010	3.40572	2.07E-03	1.68E-06	2.79E-06	1.87E-06	1.75E-06	2.0739E-03
556710.69	4204633.57	104364.04357	0.33271	0.26517	0.70207	0.73424	2.06E-03	1.25E-07	1.21E-07	3.79E-07	3.77E-07	2.0659E-03
557270.83	4205327.25	102590.27151	0.10883	0.11109	0.10946	0.11013	2.03E-03	4.08E-08	5.06E-08	5.90E-08	5.66E-08	2.0300E-03
557300.99	4205306.79	102177.36312	0.11078	0.11473	0.11150	0.11220	2.02E-03	4.16E-08	5.22E-08	6.01E-08	5.76E-08	2.0219E-03
557478.96	4205125.30	101975.74723	0.14128	0.15871	0.15517	0.15690	2.02E-03	5.30E-08	7.23E-08	8.37E-08	8.06E-08	2.0180E-03
557372.58	4204213.99	101923.35889	4.09709	5.85177	3.17420	3.12865	2.02E-03	1.54E-06	2.66E-06	1.71E-06	1.61E-06	2.0241E-03
557279.45	4205323.48	101688.15012	0.10894	0.11175	0.10948	0.11023	2.01E-03	4.09E-08	5.09E-08	5.90E-08	5.66E-08	2.0122E-03
556824.92	4204347.34	101652.72174	0.95807	0.68112	6.95880	7.33302	2.01E-03	3.59E-07	3.10E-07	3.75E-06	3.77E-06	2.0195E-03
557456.58	4204276.25	101569.69128	2.18156	3.41794	1.93942	1.93849	2.01E-03	8.18E-07	1.56E-06	1.05E-06	9.96E-07	2.0140E-03
556833.15	4204331.51	101092.29423	1.04079	0.73544	8.02696	8.44366	2.00E-03	3.90E-07	3.35E-07	4.33E-06	4.34E-06	2.0096E-03
557140.17	4205402.45	101055.60047	0.09941	0.09788	0.10772	0.10885	2.00E-03	3.73E-08	4.46E-08	5.81E-08	5.59E-08	1.9997E-03
557252.76	4204165.29	101036.81588	11.58986	12.71339	7.32604	6.96610	2.00E-03	4.35E-06	5.79E-06	3.95E-06	3.58E-06	2.0168E-03
557170.39	4204151.72	100886.92666	30.20974	32.07850	18.60059	16.54670	2.00E-03	1.13E-05	1.46E-05	1.00E-05	8.50E-06	2.0406E-03
556690.66	4204667.35	100357.69721	0.29758	0.23946	0.58758	0.61219	1.99E-03	1.12E-07	1.09E-07	3.17E-07	3.15E-07	1.9865E-03
556864.85	4204281.44	100228.84541	1.43940	1.00122	13.29347	13.84945	1.98E-03	5.40E-07	4.56E-07	7.17E-06	7.12E-06	1.9984E-03
557289.14	4205320.79	100125.27937	0.10894	0.11224	0.10943	0.11009	1.98E-03	4.09E-08	5.11E-08	5.90E-08	5.66E-08	1.9813E-03
557096.92	4205418.78	100018.30110	0.09593	0.09429	0.10767	0.10893	1.98E-03	3.60E-08	4.29E-08	5.81E-08	5.60E-08	1.9791E-03
556716.65	4204597.19	99970.04918	0.36412	0.28578	0.82530	0.86581	1.98E-03	1.37E-07	1.30E-07	4.45E-07	4.45E-07	1.9791E-03
556660.18	4205314.60	99595.85437	0.09415	0.08948	0.11431	0.11627	1.97E-03	3.53E-08	4.07E-08	6.16E-08	5.97E-08	1.9708E-03
557563.98	4204953.07	99282.83122	0.18303	0.22396	0.21123	0.21472	1.96E-03	6.87E-08	1.02E-07	1.14E-07	1.10E-07	1.9648E-03
557072.15	4205426.86	98783.39730	0.09395	0.09238	0.10753	0.10887	1.95E-03	3.52E-08	4.21E-08	5.80E-08	5.59E-08	1.9547E-03
556755.86	4204489.19	98249.89657	0.51492	0.38709	1.65221	1.75802	1.94E-03	1.93E-07	1.76E-07	8.91E-07	9.03E-07	1.9461E-03
557481.58	4205146.78	98223.95564	0.13865	0.15292	0.15024	0.15191	1.94E-03	5.20E-08	6.96E-08	8.10E-08	7.81E-08	1.9437E-03
556727.61	4204558.69	98076.95691	0.40674	0.31431	1.01363	1.06781	1.94E-03	1.53E-07	1.43E-07	5.47E-07	5.49E-07	1.9419E-03
556634.48	4205273.19	98030.77372	0.09866	0.09269	0.12463	0.12698	1.94E-03	3.70E-08	4.22E-08	6.72E-08	6.52E-08	1.9398E-03
557319.83	4205304.63	97980.04831	0.11036	0.11505	0.11108	0.11178	1.94E-03	4.14E-08	5.24E-08	5.99E-08	5.74E-08	1.9388E-03
556737.72	4204530.03	97336.39491	0.44501	0.33992	1.21023	1.27957	1.93E-03	1.67E-07	1.55E-07	6.53E-07	6.57E-07	1.9275E-03
557431.21	4204248.85	97132.27397	2.57780	4.10396	2.19374	2.18296	1.92E-03	9.67E-07	1.87E-06	1.18E-06	1.12E-06	1.9270E-03
557124.38	4205415.55	96774.22365	0.09727	0.09562	0.10672	0.10788	1.91E-03	3.65E-08	4.35E-08	5.75E-08	5.54E-08	1.9149E-03
556656.62	4204739.94	96650.65125	0.24307	0.19987	0.43230	0.44784	1.91E-03	9.12E-08	9.10E-08	2.33E-07	2.30E-07	1.9129E-03
557577.13	4204946.93	96547.95243	0.18281	0.22642	0.21229	0.21573	1.91E-03	6.86E-08	1.03E-07	1.14E-07	1.11E-07	1.9107E-03
557270.21	4204163.42	96189.90217	10.05728	11.75123	6.33665	6.04855	1.90E-03	3.77E-06	5.35E-06	3.42E-06	3.11E-06	1.9188E-03
557389.00	4204211.34	95893.01385	3.77635	5.80385	2.90689	2.86484	1.90E-03	1.42E-06	2.64E-06	1.57E-06	1.47E-06	1.9044E-03
556668.75	4205337.44	95783.86914	0.09149	0.08735	0.10998	0.11181	1.90E-03	3.43E-08	3.98E-08	5.93E-08	5.74E-08	1.8953E-03
557484.21	4205161.68	95488.30843	0.13756	0.14943	0.14729	0.14915	1.89E-03	5.16E-08	6.80E-08	7.94E-08	7.66E-08	1.8896E-03
556666.77	4204704.17	95441.69490	0.26453	0.21493	0.49181	0.51062	1.89E-03	9.92E-08	9.79E-08	2.65E-07	2.62E-07	1.8891E-03
556696.64	4204626.27	95197.17466	0.32688	0.25863	0.68996	0.72093	1.88E-03	1.23E-07	1.18E-07	3.72E-07	3.70E-07	1.8845E-03
557476.88	4204272.19	95140.82927	2.06980	3.46357	1.81633	1.81348	1.88E-03	7.76E-07	1.58E-06	9.79E-07	9.32E-07	1.8867E-03
557333.29	4205303.55	95027.22198	0.10987	0.11528	0.11081	0.11128	1.88E-03	4.12E-08	5.25E-08	5.97E-08	5.72E-08	1.8804E-03
557224.53	4205376.78	94841.44249	0.10391	0.10331	0.10607	0.10694	1.88E-03	3.90E-08	4.70E-08	5.72E-08	5.49E-08	1.8767E-03
556782.84	4204415.64	94734.48044	0.66721	0.48563	3.05329	3.25525	1.87E-03	2.50E-07	2.21E-07	1.65E-06	1.67E-06	1.8782E-03
557216.99	4205381.63	94522.23397	0.10337	0.10250	0.10596	0.10686	1.87E-03	3.88E-08	4.67E-08	5.71E-08	5.49E-08	1.8704E-03
557233.14	4205372.48	94438.27913	0.10420	0.10403	0.10575	0.10651	1.87E-03	3.91E-08	4.74E-08	5.70E-08	5.47E-08	1.8687E-03
557187.26	4204145.12	94375.66329	27.93035	29.83981	14.95996	13.41818	1.87E-03	1.05E-05	1.36E-05	8.07E-06	6.89E-06	1.9063E-03
557243.91	4205367.09	93942.61860	0.10432	0.10483	0.10546	0.10623	1.86E-03	3.91E-08	4.77E-08	5.69E-08	5.46E-08	1.8589E-03
557056.53	4205437.63	93898.83106	0.09197	0.09045	0.10645	0.10782	1.86E-03	3.45E-08	4.12E-08	5.74E-08	5.54E-08	1.8580E-03
557077.00	4205433.32	93880.51855	0.09333	0.09173	0.10641	0.10776	1.86E-03	3.50E-08	4.18E-08	5.74E-08	5.54E-08	1.8577E-03
557104.99	4205426.86	93626.16623	0.09516	0.09351	0.10611	0.10732	1.85E-03	3.57E-08	4.26E-08	5.72E-08	5.51E-08	1.8527E-03
556764.43	4204451.58	93393.77016	0.57418	0.42389	2.12352	2.26239	1.85E-03	2.15E-07	1.93E-07	1.15E-06	1.16E-06	1.8506E-03
557346.93	4205299.43	93259.14967	0.11025	0.11614	0.11147	0.11220	1.85E-03	4.14E-08	5.29E-08	6.01E-08	5.76E-08	1.8454E-03
557593.34	4204945.62	92990.10108	0.18235	0.22652	0.21078	0.21408	1.84E-03	6.84E-08	1.03E-07	1.14E-07	1.10E-07	1.8403E-03

557208.37	4205389.71	92928.71610	0.10226	0.10120	0.10552	0.10644	1.84E-03	3.84E-08	4.61E-08	5.69E-08	5.47E-08	1.8389E-03
557484.21	4205180.08	92813.09315	0.13440	0.14503	0.14375	0.14560	1.84E-03	5.04E-08	6.60E-08	7.75E-08	7.48E-08	1.8366E-03
557274.60	4205349.86	92717.75813	0.10502	0.10739	0.10513	0.10581	1.83E-03	3.94E-08	4.89E-08	5.67E-08	5.44E-08	1.8347E-03
556674.92	4204665.95	92355.44928	0.28870	0.23122	0.56583	0.58890	1.83E-03	1.08E-07	1.05E-07	3.05E-07	3.03E-07	1.8281E-03
556703.16	4204593.54	92101.61490	0.35439	0.27660	0.79557	0.83337	1.82E-03	1.33E-07	1.26E-07	4.29E-07	4.28E-07	1.8234E-03
557448.46	4204243.77	91860.50905	2.48850	4.23024	2.08108	2.06826	1.82E-03	9.33E-07	1.93E-06	1.12E-06	1.06E-06	1.8226E-03
557283.22	4205348.25	91298.02970	0.10485	0.10765	0.10480	0.10539	1.81E-03	3.93E-08	4.90E-08	5.65E-08	5.41E-08	1.8066E-03
556645.23	4204738.19	91277.12600	0.23905	0.19589	0.42439	0.43946	1.81E-03	8.97E-08	8.92E-08	2.29E-07	2.26E-07	1.8066E-03
557286.42	4204160.30	91152.18305	8.98924	11.27391	5.59671	5.35549	1.80E-03	3.37E-06	5.13E-06	3.02E-06	2.75E-06	1.8178E-03
557199.76	4205398.32	91003.32893	0.10106	0.09989	0.10496	0.10590	1.80E-03	3.79E-08	4.55E-08	5.66E-08	5.44E-08	1.8008E-03
557292.37	4205343.40	90989.97040	0.10524	0.10836	0.10512	0.10570	1.80E-03	3.95E-08	4.93E-08	5.67E-08	5.43E-08	1.8005E-03
557408.61	4204211.34	90984.34143	3.41975	5.65074	2.63281	2.59640	1.80E-03	1.28E-06	2.57E-06	1.42E-06	1.33E-06	1.8068E-03
557365.78	4205297.27	90007.52542	0.11072	0.11689	0.11217	0.11295	1.78E-03	4.15E-08	5.32E-08	6.05E-08	5.80E-08	1.7811E-03
557485.53	4205196.74	89735.90612	0.13128	0.14101	0.14019	0.14198	1.78E-03	4.92E-08	6.42E-08	7.56E-08	7.29E-08	1.7758E-03
556712.71	4204555.60	89520.08748	0.39219	0.30126	0.95750	1.00622	1.77E-03	1.47E-07	1.37E-07	5.16E-07	5.17E-07	1.7725E-03
557492.11	4204261.03	89113.56956	2.06861	3.71683	1.76556	1.75900	1.76E-03	7.76E-07	1.69E-06	9.52E-07	9.04E-07	1.7675E-03
556652.72	4204702.76	89066.04976	0.25823	0.20896	0.47790	0.49582	1.76E-03	9.69E-08	9.51E-08	2.58E-07	2.55E-07	1.7629E-03
557061.92	4205444.63	88968.92270	0.09133	0.08979	0.10527	0.10660	1.76E-03	3.43E-08	4.09E-08	5.68E-08	5.48E-08	1.7605E-03
557614.82	4204938.60	88926.26557	0.18356	0.22920	0.21104	0.21418	1.76E-03	6.89E-08	1.04E-07	1.14E-07	1.10E-07	1.7599E-03
557192.22	4205406.94	88700.22096	0.09984	0.09854	0.10427	0.10522	1.75E-03	3.75E-08	4.49E-08	5.62E-08	5.41E-08	1.7552E-03
556681.74	4204626.27	88509.95426	0.31593	0.24899	0.65803	0.68658	1.75E-03	1.19E-07	1.13E-07	3.55E-07	3.53E-07	1.7522E-03
557086.15	4205441.40	87912.69418	0.09266	0.09103	0.10488	0.10617	1.74E-03	3.48E-08	4.14E-08	5.66E-08	5.46E-08	1.7396E-03
557379.24	4205296.20	87844.96509	0.11060	0.11724	0.11260	0.11330	1.74E-03	4.15E-08	5.34E-08	6.07E-08	5.82E-08	1.7383E-03
556625.91	4205303.18	87640.80829	0.09422	0.08880	0.11731	0.11941	1.73E-03	3.53E-08	4.04E-08	6.33E-08	6.14E-08	1.7342E-03
557303.25	4204158.43	87076.52810	7.96431	10.79897	4.95205	4.75290	1.72E-03	2.99E-06	4.92E-06	2.67E-06	2.44E-06	1.7359E-03
556861.62	4204266.37	86934.18155	1.42632	0.97789	10.66226	11.13360	1.72E-03	5.35E-07	4.45E-07	5.75E-06	5.72E-06	1.7325E-03
556788.04	4204379.67	86881.56365	0.73155	0.52193	3.58495	3.79222	1.72E-03	2.74E-07	2.38E-07	1.93E-06	1.95E-06	1.7234E-03
556750.13	4205421.68	86837.70333	0.08365	0.08156	0.09860	0.10005	1.72E-03	3.14E-08	3.71E-08	5.32E-08	5.14E-08	1.7183E-03
557649.88	4204767.68	86425.96414	0.25501	0.33638	0.29610	0.30125	1.71E-03	9.57E-08	1.53E-07	1.60E-07	1.55E-07	1.7106E-03
557466.73	4204236.67	86374.60977	2.41540	4.44244	1.97555	1.96045	1.71E-03	9.06E-07	2.02E-06	1.07E-06	1.01E-06	1.7140E-03
557647.25	4204802.30	86325.80618	0.23517	0.30762	0.27295	0.27747	1.71E-03	8.82E-08	1.40E-07	1.47E-07	1.43E-07	1.7085E-03
557649.44	4204784.77	86237.41129	0.24480	0.32157	0.28407	0.28891	1.71E-03	9.18E-08	1.46E-07	1.53E-07	1.48E-07	1.7068E-03
557646.81	4204819.84	86080.38935	0.22609	0.29454	0.26224	0.26646	1.70E-03	8.48E-08	1.34E-07	1.41E-07	1.37E-07	1.7037E-03
557663.46	4204713.78	85981.98331	0.29643	0.39684	0.34099	0.34701	1.70E-03	1.11E-07	1.81E-07	1.84E-07	1.78E-07	1.7019E-03
556660.03	4204664.26	85946.60387	0.28080	0.22390	0.54636	0.56805	1.70E-03	1.05E-07	1.02E-07	2.95E-07	2.92E-07	1.7013E-03
557658.64	4204733.50	85771.28821	0.27849	0.37125	0.32205	0.32777	1.70E-03	1.04E-07	1.69E-07	1.74E-07	1.68E-07	1.6977E-03
556733.70	4204489.19	85646.50574	0.47580	0.35511	1.40175	1.48154	1.69E-03	1.78E-07	1.62E-07	7.56E-07	7.61E-07	1.6964E-03
557647.69	4204835.61	85616.89699	0.21846	0.28352	0.25307	0.25703	1.69E-03	8.19E-08	1.29E-07	1.36E-07	1.32E-07	1.6945E-03
556767.94	4204416.52	85543.75745	0.62146	0.44998	2.50558	2.65917	1.69E-03	2.33E-07	2.05E-07	1.35E-06	1.37E-06	1.6957E-03
556689.11	4204590.73	85469.35418	0.34393	0.26706	0.76235	0.79729	1.69E-03	1.29E-07	1.22E-07	4.11E-07	4.10E-07	1.6921E-03
557657.33	4204750.15	85382.29417	0.26549	0.35241	0.30754	0.31297	1.69E-03	9.96E-08	1.60E-07	1.66E-07	1.61E-07	1.6899E-03
557635.85	4204930.71	85283.51321	0.18519	0.23195	0.21156	0.21458	1.69E-03	6.95E-08	1.06E-07	1.14E-07	1.10E-07	1.6878E-03
557425.04	4204203.93	85120.29956	3.28406	5.92901	2.47121	2.43386	1.68E-03	1.23E-06	2.70E-06	1.33E-06	1.25E-06	1.6907E-03
556716.65	4204524.41	85055.49496	0.42116	0.31870	1.10069	1.15863	1.68E-03	1.58E-07	1.45E-07	5.93E-07	5.95E-07	1.6844E-03
557493.86	4205213.83	84905.24531	0.12745	0.13696	0.13579	0.13767	1.68E-03	4.78E-08	6.24E-08	7.32E-08	7.07E-08	1.6802E-03
557508.35	4204254.94	84848.22128	2.02648	3.85621	1.69777	1.68939	1.68E-03	7.60E-07	1.76E-06	9.15E-07	8.68E-07	1.6831E-03
557664.11	4204529.75	84711.37365	0.51745	0.76177	0.57325	0.58249	1.68E-03	1.94E-07	3.47E-07	3.09E-07	2.99E-07	1.6772E-03
557280.53	4205368.71	84614.71765	0.10200	0.10447	0.10168	0.10221	1.67E-03	3.83E-08	4.76E-08	5.48E-08	5.25E-08	1.6744E-03
557659.82	4204514.05	84609.30458	0.54495	0.81341	0.60091	0.61041	1.67E-03	2.04E-07	3.70E-07	3.24E-07	3.14E-07	1.6753E-03
556635.91	4205333.16	84428.83748	0.09081	0.08613	0.11090	0.11280	1.67E-03	3.41E-08	3.92E-08	5.98E-08	5.80E-08	1.6707E-03
556830.94	4204300.81	84399.67307	1.07626	0.74329	6.90363	7.22848	1.67E-03	4.04E-07	3.38E-07	3.72E-06	3.71E-06	1.6781E-03
557652.07	4204854.90	84392.21339	0.20956	0.27062	0.24198	0.24564	1.67E-03	7.86E-08	1.23E-07	1.30E-07	1.26E-07	1.6702E-03
557243.37	4205392.94	84125.77084	0.10125	0.10113	0.10202	0.10270	1.66E-03	3.80E-08	4.60E-08	5.50E-08	5.28E-08	1.6647E-03
557656.65	4204495.65	84060.47967	0.57886	0.87946	0.63344	0.64311	1.66E-03	2.17E-07	4.00E-07	3.42E-07	3.30E-07	1.6645E-03
556747.78	4204450.70	83729.28239	0.53762	0.39442	1.81357	1.92111	1.66E-03	2.02E-07	1.80E-07	9.78E-07	9.87E-07	1.6590E-03
556691.59	4205393.13	83708.69126	0.08545	0.08240	0.10118	0.10276	1.66E-03	3.21E-08	3.75E-08	5.46E-08	5.28E-08	1.6564E-03
556625.94	4204738.51	83535.53316	0.23081	0.18831	0.40697	0.42103	1.65E-03	8.66E-08	8.57E-08	2.19E-07	2.16E-07	1.6534E-03
556648.76	4205353.15	83489.80214	0.08884	0.08467	0.10733	0.10912	1.65E-03	3.33E-08	3.85E-08	5.79E-08	5.61E-08	1.6521E-03
557233.68	4205400.47	83483.49726	0.10071	0.10002	0.10221	0.10302	1.65E-03	3.78E-08	4.55E-08	5.51E-08	5.29E-08	1.6520E-03
557654.70	4204872.43	83449.88489	0.20204	0.25977	0.23280	0.23622	1.65E-03	7.58E-08	1.18E-07	1.26E-07	1.21E-07	1.6516E-03
557226.14	4205405.32	83236.41236	0.10018	0.09935	0.10238	0.10323	1.65E-03	3.76E-08	4.52E-08	5.52E-08	5.30E-08	1.6471E-03
557255.22	4205389.17	82979.48847	0.10095	0.10162	0.10116	0.10192	1.64E-03	3.79E-08	4.63E-08	5.45E-08	5.24E-08	1.6420E-03
557066.76	4205454.86	82813.53857	0.09028	0.08872	0.10367	0.10497	1.64E-03	3.39E-08	4.04E-08	5.59E-08	5.39E-08	1.6387E-03
557321.33	4204155.94	82674.40612	7.03614	10.45347	4.37019	4.20585	1.64E-03	2.64E-06	4.76E-06	2.36E-06	2.16E-06	1.6477E-03
557297.22	4205364.94	82617.11337	0.10179	0.10496	0.10120	0.10154	1.63E-03	3.82E-08	4.78E-08	5.46E-08	5.22E-08	1.6348E-03
556636.14	4204702.48	82595.26860	0.25022	0.20166	0.45964	0.47641	1.63E-03	9.39E-08	9.18E-08	2.48E-07	2.45E-07	1.6349E-03
556801.49	4204341.01	82215.78858	0.83915	0.58728	4.46827	4.69716	1.63E-03	3.15E-07	2.67E-07	2.41E-06	2.41E-06	1.6321E-03
557652.51	4204923.70	82149.07279	0.18358	0.23297	0.21077	0.21371	1.63E-03	6.89E-08	1.06E-07	1.14E-07	1.10E-07	1.6258E-03
556697.54	4204552.79	82146.07960	0.37734	0.28820	0.90109	0.94471	1.63E-03	1.42E-07	1.31E-07	4.86E-07	4.85E-07	1.6266E-03
556665.44	4204624.30	82131.14136	0.30568	0.23973	0.62900	0.65533	1.63E-03	1.15E-07	1.09E-07	3.39E-07	3.37E-07	1.6259E-03
557659.74	4204477.61	82094.48784	0.60742	0.94421	0.65802	0.66753	1.62E-03	2.28E-07	4.30E-07	3.55E-07	3.43E-07	1.6257E-03
557485.01	4204231.59	82074.12522	2.33068	4.62114	1.87336	1.85727	1.62E-03	8.74E-07	2.10E-06	1.01E-06	9.54E-07	1.6288E-03
557398.25	4205305.53	81875.15625	0.10876	0.11585	0.11074	0.11169	1.62E-03	4.08E-08	5.27E-08	5.97E-08	5.74E-08	1.6202E-03
557200.46	4204129.72	81777.52153	30.28126	34.01840	12.65330	11.27521	1.62E-03	1.14E-05	1.55E-05	6.82E-06	5.79E-06	1.6575E-03
557216.45	4205414.47	81556.06704	0.09903	0.09796	0.10191	0.10279	1.61E-03	3.71E-08	4.46E-08	5.50E-08	5.28E-08	1.6138E-03
557663.02	4204889.52	81464.08982	0.19484	0.24941	0.22342	0.22661	1.61E-03	7.31E-08	1.14E-07	1.20E-07	1.16E-07	1.6122E-03
557658.71	4204461.11	81142.22438	0.64175	1.01601	0.68771	0.69707	1.61E-03	2.41E-07	4.63E-07	3.71E-07	3.58E-07	1.6069E-03
557166.91	4205433.86	80960.04937	0.09596	0.09436	0.10200	0.10299	1.60E-03	3.60E-08	4.30E-08	5.50E-08	5.29E-08	1.6020E-03
557138.38	4205442.47	80833.66933	0.09420	0.09251	0.10229	0.10336	1.60E-03	3.53E-08	4.21E-08	5.52E-08	5.31E-08	1.5995E-03
556788.04	4204359.91	80674.93180	0.75506	0.53193	3.64330	3.83828	1.60E-03	2.83E-07	2.42E-07	1.96E-06	1.97E-06	1.6007E-03
557525.61	4204248.85	80619.70989	1.97263	4.00596	1.62353	1.61378	1.60E-03	7.40E-07	1.82E-06	8.75E-07	8.29E-07	1.5994E-03
557316.06	4205360.63	80513.33012	0.10156	0.10563	0.10084	0.10114	1.59E-03	3.81E-08	4.81E-08	5.44E-08	5.20E-08	1.5932E-03
557657.68	4204443.06	80235.94439	0.68524	1.10729	0.72358	0.73262	1.59E-03	2.57E-07	5.04E-07	3.90E-07	3.76E-07	1.5891E-03
557492.98	4205241.00	80156.97395	0.12259	0.13116	0.13008	0.13185	1.59E-03	4.60E-08	5.97E-08	7.01E-08	6.77E-08	1.5862E-03
557219.53	4204128.25	79900.21190	24.67167	27.83049	10.27617	9.31058	1.58E-03	9.25E-06	1.27E-05	5.54E-06	4.78E-06	1.6131E-03
556718.50	4204494.89	79776.59066	0.44653	0.33276	1.23815	1.30394	1.58E-03	1.68E-07	1.51E-07	6.68E-07	6.70E-07	1.5801E-03
557351.06	4205341.78	79767.52819	0.10238	0.10867	0.10258	0.10288	1.58E-03	3.84E-08	4.95E-08	5.53E-08	5.29E-08	1.5785E-03
557507.00	4205229.61	79680.99512	0.12379	0.13334	0.13159	0.13321	1.58E-03	4.64E-08	6.07E-08	7.10E-08	6.84E-08	1.5768E-03
557670.04	4204904.86	79560.73063	0.18802	0.24034	0.21501	0.21801	1.57E-03	7.05E-08	1.09E-07	1.16E-07	1.12E-07	1.5746E-03
557209.45	4205423.63	79214.44175	0.09789	0.09661	0.10122	0.10211	1.57E-03	3.67E-08	4.40E-08	5.46E-08	5.25E-08	1.5675E-03
557336.92	4204152.82	78970.85450	6.43161	10.44168	3.96939	3.82640	1.56E-03	2.41E-06	4.75E-06	2.14E-06	1.97E-06	1.5738E-03
557658.71	4204425.01	78902.67179	0.73020	1.20728	0.75782	0.76625	1.56E-03	2.74E-07	5.50E-07	4.09E-07	3.94E-07	1.5628E-03
556671.69	4204588.20	78816.21763	0.33089	0.25551	0.72034	0.75189	1.56E-03	1.24E-07	1.16E-07	3.88E-07	3.86E-07	1.5605E-03
557336.52	4205354.71	78674.18820	0.10133	0.10657	0.10097	0.10115	1.56E-03	3.80E-08	4.85E-08	5.44E-08	5.20E-08	1.5568E-03
557712.99	4204685.29	78667.83336	0.31280	0.42558	0.35363	0.35955	1.56E-03	1.17E-07	1.94E-07	1.91E-07	1.85E-07	1.5572E-03
557443.05	4204195.98	78653.38982	3.08664	6.15084	2.27679	2.24016	1.56E-03	1.16E-06	2.80E-06	1.23E-06	1.15E-06	1.5626E-03
556612.53	4204735.53	78636.69604	0.22655	0.18408	0.39858	0.41211	1.56E-03	8.50E-08	8.38E-08	2.15E-07	2.12E-07	1.5565E-03
556735.85	4205433.10	78622.92485	0.08223	0.08006	0.09682	0.09828	1.56E-03	3.08E-08	3.64E-08	5.22E-08	5.05E-08	1.5558E-03
556752.16	4204420.02	78394.98664	0.57607	0.41568	2.08344	2.20286	1.55E-03	2.16E-07	1.89E-07	1.12E-06	1.13E-06	1.5538E-03
556861.62	4204252.38	78237.56910	1.44507	0.97912	9.77895	10.23023	1.55E-03	5.42E-07	4.46E-07	5.27E-06	5.26E-06	1.5595E-03
557712.11	4204703.70	78229.40695	0.29550	0.40047	0.33530	0.34096	1.55E-03	1.11E-07	1.82E-07	1.81E-07	1.75E-07	1.5485E-03
557123.30	4205452.70	77964.42511	0.09251	0.09080	0.10169	0.10283	1.54E-03	3.47E-08	4.13E-08	5.48E-08	5.28E-08	1.5428E-03
557657.16	4204409.03	77815.72983	0.77258	1.30829	0.78996	0.79780	1.54E-03	2.90E-07	5.96E-07	4.26E-07	4.10E-07	1.5414E-03
557676.17	4204922.83	77640.90633	0.18047	0.23017	0.20600	0.20880	1.54E-03	6.77E-08	1.05E-07	1.11E-07	1.07E-07	1.5366E-03
557712.55	4204722.54	77560.09033	0.27932	0.37671	0.31760	0.32297	1.53E-03	1.05E-07	1.72E-07	1.71E-07	1.66E-07	1.5352E-03
556652.24	4204622.61	77558.18922	0.29753	0.23244	0.60602	0.63065	1.53E-03	1.12E-07	1.06E-07	3.27E-07	3.24E-07	1.5354E-03
556621.81	4204697.42	77381.37386	0.24566	0.19695	0.45030	0.46642	1.53E-03	9.22E-08	8.97E-08	2.43E-07	2.40E-07	1.5317E-03
557415.80	4205312.72	77258.80560	0.10762	0.11473	0.10960	0.11043	1.53E-03	4.04E-08	5.22E-08	5.91E-08	5.67E-08	1.5288E-03
557287.53	4205387.55	77207.14251	0.09931	0.10172	0.09852	0.09909	1.53E-03	3.73E-08	4.63E-08	5.31E-08	5.09E-08	1.5278E-03
557297.76	4205384.32	76410.20252	0.09911	0.10207	0.09819	0.09857	1.51E-03	3.72E-08	4.65E-08	5.29E-08	5.06E-08	1.5120E-03
557176.61	4205441.93	76355.04783	0.09515	0.09355	0.10056	0.10151	1.51E-03	3.57E-08	4.26E-08	5.42E-08	5.22E-08	1.5109E-03
557503.28	4204219.41	76337.14875	2.30039	5.10586	1.78895	1.77007	1.51E-03	8.63E-07	2.32E-06	9.65E-07	9.09E-07	1.5154E-03
557355.62	4204151.57	76328.56741	5.80518	10.39970	3.58931	3.46803	1.51E-03	2.18E-06	4.73E-06	1.94E-06	1.78E-06	1.5208E-03
556732.00	4204449.82	76319.25726	0.50592	0.36911	1.58718	1.67411	1.51E-03	1.90E-07	1.68E-07	8.56E-07	8.60E-07	1.5121E-03
557482.02	4205272.12	76268.17677	0.11714	0.12478	0.12339	0.12502	1.51E-03	4.39E-08	5.68E-08	6.65E-08	6.42E-08	1.5093E-03
556768.94	4204379.67	76265.00423	0.66261	0.46920	2.75390	2.90451	1.51E-03	2.49E-07	2.14E-07	1.48E-06	1.49E-06	1.5124E-03
557152.92	4205449.47	76078.14057	0.09372	0.09202	0.10077	0.10182	1.51E-03	3.52E-08	4.19E-08	5.43E-08	5.23E-08	1.5054E-03
557541.85	4204239.71	76063.96338	1.93680	4.28432	1.55887	1.54739	1.50E-03	7.27E-07	1.95E-06	8.41E-07	7.95E-07	1.5093E-03

556681.24	4204551.39	76046.04636	0.36138	0.27465	0.84092	0.87954	1.50E-03	1.36E-07	1.25E-07	4.53E-07	4.52E-07	1.5058E-03
557655.62	4204392.01	75917.04490	0.81127	1.41821	0.81738	0.82444	1.50E-03	3.04E-07	6.46E-07	4.41E-07	4.24E-07	1.5039E-03
556828.79	4204283.59	75460.85564	1.08178	0.73672	6.24449	6.52656	1.49E-03	4.06E-07	3.35E-07	3.37E-06	3.35E-06	1.5005E-03
556708.73	4205427.39	75385.17284	0.08214	0.07964	0.09697	0.09848	1.49E-03	3.08E-08	3.63E-08	5.23E-08	5.06E-08	1.4917E-03
556629.96	4204657.52	75287.07852	0.26706	0.21087	0.51290	0.53220	1.49E-03	1.00E-07	9.60E-08	2.77E-07	2.73E-07	1.4904E-03
557353.75	4205356.86	75155.69593	0.09994	0.10609	0.09975	0.10000	1.49E-03	3.75E-08	4.83E-08	5.38E-08	5.14E-08	1.4872E-03
557309.06	4205382.71	75016.02513	0.09873	0.10227	0.09762	0.09788	1.48E-03	3.70E-08	4.66E-08	5.26E-08	5.03E-08	1.4844E-03
556788.04	4204340.15	74706.97375	0.77652	0.54000	3.65116	3.83409	1.48E-03	2.91E-07	2.46E-07	1.97E-06	1.97E-06	1.4826E-03
557265.45	4205410.17	74457.03307	0.09836	0.09880	0.09810	0.09868	1.47E-03	3.69E-08	4.50E-08	5.29E-08	5.07E-08	1.4734E-03
557459.48	4204190.68	74208.37784	2.91472	6.29755	2.12196	2.08703	1.47E-03	1.09E-06	2.87E-06	1.14E-06	1.07E-06	1.4744E-03
557251.99	4205418.24	74203.68486	0.09815	0.09774	0.09847	0.09920	1.47E-03	3.68E-08	4.45E-08	5.31E-08	5.10E-08	1.4684E-03
557372.45	4204150.95	74197.27119	5.29836	10.33892	3.29072	3.18584	1.47E-03	1.99E-06	4.71E-06	1.77E-06	1.64E-06	1.4782E-03
557428.12	4205318.26	74177.73982	0.10663	0.11403	0.10872	0.10968	1.47E-03	4.00E-08	5.19E-08	5.86E-08	5.64E-08	1.4679E-03
556703.30	4204494.89	74119.49973	0.42459	0.31508	1.12751	1.18379	1.47E-03	1.59E-07	1.43E-07	6.08E-07	6.08E-07	1.4680E-03
557318.22	4205381.09	74073.93798	0.09852	0.10252	0.09743	0.09758	1.47E-03	3.70E-08	4.67E-08	5.25E-08	5.01E-08	1.4658E-03
557183.61	4205445.70	74069.09601	0.09482	0.09323	0.09981	0.10079	1.47E-03	3.56E-08	4.24E-08	5.38E-08	5.18E-08	1.4657E-03
556598.38	4204729.57	74044.56794	0.22328	0.18049	0.39257	0.40569	1.47E-03	8.38E-08	8.22E-08	2.12E-07	2.08E-07	1.4656E-03
556623.06	4205363.14	73526.22587	0.08676	0.08241	0.10560	0.10738	1.45E-03	3.25E-08	3.75E-08	5.69E-08	5.52E-08	1.4550E-03
557658.71	4204376.55	73429.36837	0.84127	1.51586	0.83363	0.83968	1.45E-03	3.16E-07	6.90E-07	4.49E-07	4.31E-07	1.4547E-03
557244.99	4205424.70	73247.60079	0.09745	0.09683	0.09832	0.09908	1.45E-03	3.66E-08	4.41E-08	5.30E-08	5.09E-08	1.4494E-03
557102.30	4205468.86	73063.77986	0.09003	0.08829	0.10076	0.10195	1.45E-03	3.38E-08	4.02E-08	5.43E-08	5.24E-08	1.4458E-03
556606.63	4204696.58	73057.37596	0.23906	0.19100	0.43492	0.45008	1.45E-03	8.97E-08	8.70E-08	2.35E-07	2.31E-07	1.4461E-03
557132.45	4205462.39	72967.50749	0.09165	0.08989	0.10023	0.10129	1.44E-03	3.44E-08	4.09E-08	5.40E-08	5.20E-08	1.4439E-03
556604.50	4205341.73	72906.95744	0.08855	0.08362	0.10923	0.11113	1.44E-03	3.32E-08	3.81E-08	5.89E-08	5.71E-08	1.4427E-03
556673.03	4205413.12	72653.82043	0.08272	0.07968	0.09816	0.09968	1.44E-03	3.10E-08	3.63E-08	5.29E-08	5.12E-08	1.4377E-03
557344.60	4205371.94	72598.59814	0.09831	0.10378	0.09765	0.09786	1.44E-03	3.69E-08	4.72E-08	5.27E-08	5.03E-08	1.4366E-03
557389.28	4204151.57	72522.06361	4.82577	10.14160	3.02604	2.93568	1.43E-03	1.81E-06	4.62E-06	1.63E-06	1.51E-06	1.4445E-03
557523.58	4204214.33	72467.75272	2.19612	5.35690	1.68187	1.66317	1.43E-03	8.24E-07	2.44E-06	9.07E-07	8.55E-07	1.4389E-03
557234.20	4204117.25	72444.90833	23.20507	28.51126	8.71879	7.95321	1.43E-03	8.70E-06	1.30E-05	4.70E-06	4.09E-06	1.4638E-03
556635.94	4204620.08	72436.00479	0.28777	0.22373	0.57881	0.60149	1.43E-03	1.08E-07	1.02E-07	3.12E-07	3.09E-07	1.4340E-03
557159.91	4205457.55	72153.92613	0.09293	0.09121	0.09960	0.10059	1.43E-03	3.49E-08	4.15E-08	5.37E-08	5.17E-08	1.4278E-03
557558.09	4204231.59	71987.50653	1.88862	4.57357	1.49138	1.47885	1.42E-03	7.08E-07	2.08E-06	8.04E-07	7.60E-07	1.4287E-03
557446.71	4205318.46	71846.15591	0.10800	0.11450	0.10995	0.11103	1.42E-03	4.05E-08	5.21E-08	5.93E-08	5.70E-08	1.4217E-03
557659.74	4204361.59	71745.79839	0.88151	1.63762	0.85747	0.86246	1.42E-03	3.31E-07	7.46E-07	4.62E-07	4.43E-07	1.4215E-03
557390.91	4205349.86	71443.66502	0.09954	0.10737	0.10042	0.10070	1.41E-03	3.73E-08	4.89E-08	5.41E-08	5.17E-08	1.4138E-03
557237.45	4205434.40	71369.26724	0.09637	0.09557	0.09781	0.09858	1.41E-03	3.62E-08	4.35E-08	5.27E-08	5.07E-08	1.4123E-03
556768.94	4204359.91	71202.10935	0.68085	0.47612	2.81724	2.96184	1.41E-03	2.55E-07	2.17E-07	1.52E-06	1.52E-06	1.4123E-03
556614.22	4204656.68	70829.38290	0.25864	0.20347	0.49146	0.50938	1.40E-03	9.70E-08	9.26E-08	2.65E-07	2.62E-07	1.4021E-03
557251.80	4204115.78	70783.67929	18.46098	25.18625	7.43614	6.85814	1.40E-03	6.93E-06	1.15E-05	4.01E-06	3.52E-06	1.4264E-03
556665.50	4204548.01	70772.40763	0.34781	0.26289	0.79201	0.82665	1.40E-03	1.30E-07	1.20E-07	4.27E-07	4.25E-07	1.4014E-03
557406.74	4204152.20	70719.33686	4.39226	9.93189	2.78083	2.70297	1.40E-03	1.65E-06	4.52E-06	1.50E-06	1.39E-06	1.4083E-03
557223.99	4205442.47	70587.09823	0.09558	0.09439	0.09803	0.09886	1.40E-03	3.59E-08	4.30E-08	5.29E-08	5.08E-08	1.3968E-03
556733.75	4204417.39	70515.99797	0.53536	0.38348	1.76258	1.85544	1.40E-03	2.01E-07	1.75E-07	9.50E-07	9.53E-07	1.3975E-03
557112.71	4205473.16	70474.00936	0.08988	0.08810	0.09983	0.10099	1.39E-03	3.37E-08	4.01E-08	5.38E-08	5.19E-08	1.3946E-03
556689.47	4204499.78	70445.99175	0.40275	0.29859	1.02516	1.07376	1.39E-03	1.51E-07	1.36E-07	5.53E-07	5.52E-07	1.3952E-03
557482.26	4204186.44	70350.30296	2.72561	6.63656	1.95864	1.92635	1.39E-03	1.02E-06	3.02E-06	1.06E-06	9.90E-07	1.3980E-03
556715.35	4204449.82	70238.30251	0.47499	0.34489	1.39534	1.46642	1.39E-03	1.78E-07	1.57E-07	7.52E-07	7.53E-07	1.3916E-03
557190.61	4205454.32	70188.94920	0.09391	0.09232	0.09862	0.09953	1.39E-03	3.52E-08	4.20E-08	5.32E-08	5.11E-08	1.3889E-03
556841.51	4205485.93	70117.62549	0.07917	0.07809	0.09425	0.09559	1.39E-03	2.97E-08	3.56E-08	5.08E-08	4.91E-08	1.3875E-03
557293.45	4205410.03	70077.01468	0.09659	0.09863	0.09544	0.09582	1.39E-03	3.62E-08	4.49E-08	5.15E-08	4.92E-08	1.3867E-03
557345.14	4205381.63	70042.88008	0.09705	0.10235	0.09618	0.09638	1.39E-03	3.64E-08	4.66E-08	5.19E-08	4.95E-08	1.3860E-03
557659.74	4204343.03	69912.15886	0.93848	1.82240	0.89049	0.89404	1.38E-03	3.52E-07	8.30E-07	4.80E-07	4.59E-07	1.3854E-03
556581.99	4204729.57	69757.59795	0.21689	0.17476	0.37852	0.39084	1.38E-03	8.14E-08	7.96E-08	2.04E-07	2.01E-07	1.3808E-03
557502.71	4205293.15	69416.78113	0.11571	0.12275	0.12215	0.12372	1.37E-03	4.34E-08	5.59E-08	6.59E-08	6.36E-08	1.3737E-03
556860.00	4204237.85	69321.32790	1.43907	0.96165	9.07255	9.49901	1.37E-03	5.40E-07	4.38E-07	4.89E-06	4.88E-06	1.3823E-03
557538.50	4205262.82	69316.65482	0.11670	0.12627	0.12372	0.12534	1.37E-03	4.38E-08	5.75E-08	6.67E-08	6.44E-08	1.3717E-03
556802.96	4204300.27	69218.74701	0.89126	0.60685	4.35064	4.55007	1.37E-03	3.34E-07	2.76E-07	2.35E-06	2.34E-06	1.3748E-03
557303.68	4205406.80	69163.44225	0.09620	0.09903	0.09489	0.09531	1.37E-03	3.61E-08	4.51E-08	5.12E-08	4.90E-08	1.3686E-03
557138.38	4205471.01	69144.43272	0.09090	0.08909	0.09910	0.10019	1.37E-03	3.41E-08	4.06E-08	5.34E-08	5.15E-08	1.3683E-03
557165.84	4205464.55	69023.99298	0.09231	0.09056	0.09858	0.09955	1.37E-03	3.46E-08	4.12E-08	5.32E-08	5.11E-08	1.3659E-03
557657.16	4204329.11	68948.88373	0.99089	1.99893	0.92200	0.92443	1.36E-03	3.72E-07	9.10E-07	4.97E-07	4.75E-07	1.3665E-03
557424.81	4204152.82	68933.66278	4.01073	9.79195	2.56122	2.49382	1.36E-03	1.50E-06	4.46E-06	1.38E-06	1.28E-06	1.3725E-03
556742.99	4205461.66	68917.14294	0.07939	0.07751	0.09368	0.09508	1.36E-03	2.98E-08	3.53E-08	5.05E-08	4.89E-08	1.3637E-03
556591.74	4204693.21	68860.75142	0.23349	0.18573	0.42248	0.43685	1.36E-03	8.76E-08	8.46E-08	2.28E-07	2.24E-07	1.3631E-03
556621.89	4204619.24	68536.37711	0.27877	0.21599	0.55372	0.57470	1.36E-03	1.05E-07	9.83E-08	2.99E-07	2.95E-07	1.3568E-03
556749.84	4204379.67	68450.46363	0.60460	0.42538	2.22092	2.33536	1.35E-03	2.27E-07	1.94E-07	1.20E-06	1.20E-06	1.3572E-03
557464.26	4205325.64	68434.23213	0.10708	0.11372	0.10974	0.11088	1.35E-03	4.02E-08	5.18E-08	5.92E-08	5.70E-08	1.3542E-03
556826.10	4204269.06	68276.85217	1.07547	0.72334	5.71977	5.97235	1.35E-03	4.03E-07	3.29E-07	3.08E-06	3.07E-06	1.3578E-03
557314.99	4205405.19	68025.08694	0.09581	0.09913	0.09437	0.09460	1.35E-03	3.59E-08	4.51E-08	5.09E-08	4.86E-08	1.3461E-03
557388.21	4205366.01	67980.73432	0.09701	0.10473	0.09748	0.09769	1.35E-03	3.64E-08	4.77E-08	5.26E-08	5.02E-08	1.3452E-03
556636.56	4204583.42	67854.32252	0.30496	0.23305	0.63926	0.66475	1.34E-03	1.14E-07	1.06E-07	3.45E-07	3.42E-07	1.3435E-03
557439.78	4204154.69	67741.31100	3.70213	9.49031	2.39256	2.33330	1.34E-03	1.39E-06	4.32E-06	1.29E-06	1.20E-06	1.3485E-03
557271.60	4204112.85	67561.26824	14.49070	23.16618	6.19631	5.76936	1.34E-03	5.44E-06	1.05E-05	3.34E-06	2.96E-06	1.3590E-03
557528.79	4205283.44	67471.19288	0.11624	0.12448	0.12361	0.12506	1.33E-03	4.36E-08	5.67E-08	6.67E-08	6.43E-08	1.3352E-03
557118.10	4205480.16	67439.13385	0.08933	0.08750	0.09898	0.10008	1.33E-03	3.35E-08	3.98E-08	5.34E-08	5.14E-08	1.3345E-03
556681.60	4205437.39	67287.75925	0.08036	0.07768	0.09510	0.09658	1.33E-03	3.01E-08	3.54E-08	5.13E-08	4.96E-08	1.3315E-03
557324.14	4205403.57	67258.72696	0.09556	0.09935	0.09404	0.09425	1.33E-03	3.58E-08	4.52E-08	5.07E-08	4.84E-08	1.3309E-03
557540.83	4204201.14	67255.37056	2.15189	6.09837	1.59808	1.57774	1.33E-03	8.07E-07	2.78E-06	8.62E-07	8.11E-07	1.3360E-03
557200.30	4205460.78	67061.36943	0.09335	0.09178	0.09744	0.09832	1.33E-03	3.50E-08	4.18E-08	5.25E-08	5.05E-08	1.3270E-03
556721.48	4204420.02	66870.83681	0.50718	0.36260	1.57693	1.65634	1.32E-03	1.90E-07	1.65E-07	8.50E-07	8.51E-07	1.3251E-03
557351.06	4205391.86	66796.81049	0.09566	0.10102	0.09459	0.09478	1.32E-03	3.59E-08	4.60E-08	5.10E-08	4.87E-08	1.3218E-03
556598.76	4204655.55	66788.20316	0.25060	0.19643	0.47126	0.48790	1.32E-03	9.40E-08	8.94E-08	2.54E-07	2.51E-07	1.3221E-03
556651.73	4204545.77	66709.21994	0.33568	0.25263	0.74950	0.78093	1.32E-03	1.26E-07	1.15E-07	4.04E-07	4.01E-07	1.3209E-03
556701.32	4204454.21	66599.26231	0.44818	0.32503	1.24841	1.30877	1.32E-03	1.68E-07	1.48E-07	6.73E-07	6.72E-07	1.3194E-03
557146.99	4205476.39	66526.07803	0.09052	0.08874	0.09826	0.09927	1.32E-03	3.40E-08	4.04E-08	5.30E-08	5.10E-08	1.3164E-03
557660.77	4204308.48	66460.47450	1.05662	2.28696	0.95126	0.95168	1.31E-03	3.96E-07	1.04E-06	5.13E-07	4.89E-07	1.3174E-03
557457.85	4204158.43	66456.46223	3.33861	8.90516	2.19984	2.14980	1.31E-03	1.25E-06	4.05E-06	1.19E-06	1.10E-06	1.3225E-03
556768.94	4204340.15	66350.46501	0.69742	0.48154	2.85031	2.98821	1.31E-03	2.62E-07	2.19E-07	1.54E-06	1.54E-06	1.3163E-03
557275.14	4205433.32	66342.42299	0.09539	0.09576	0.09452	0.09505	1.31E-03	3.58E-08	4.36E-08	5.10E-08	4.88E-08	1.3128E-03
557176.07	4205469.93	66274.43039	0.09191	0.09016	0.09763	0.09857	1.31E-03	3.45E-08	4.10E-08	5.26E-08	5.06E-08	1.3115E-03
557476.58	4205331.18	66123.94412	0.10652	0.11302	0.10964	0.11080	1.31E-03	4.00E-08	5.15E-08	5.91E-08	5.69E-08	1.3085E-03
556567.09	4204728.08	65969.80665	0.21155	0.16988	0.36711	0.37878	1.31E-03	7.94E-08	7.73E-08	1.98E-07	1.95E-07	1.3058E-03
557576.36	4204215.35	65880.76631	1.84653	5.36065	1.41200	1.39755	1.30E-03	6.93E-07	2.44E-06	7.61E-07	7.18E-07	1.3081E-03
557287.73	4204110.65	65470.88023	12.30230	22.45507	5.44870	5.10616	1.30E-03	4.61E-06	1.02E-05	2.94E-06	2.62E-06	1.3158E-03
557265.99	4205441.40	65357.85294	0.09490	0.09478	0.09444	0.09508	1.29E-03	3.56E-08	4.32E-08	5.09E-08	4.89E-08	1.2933E-03
557422.67	4205359.55	65268.28471	0.09741	0.10616	0.09885	0.09905	1.29E-03	3.65E-08	4.83E-08	5.33E-08	5.09E-08	1.2916E-03
556662.77	4204514.53	65197.55648	0.36246	0.26911	0.85487	0.89191	1.29E-03	1.36E-07	1.23E-07	4.61E-07	4.58E-07	1.2912E-03
556670.37	4204499.78	65060.11507	0.37882	0.27957	0.92278	0.96364	1.29E-03	1.42E-07	1.27E-07	4.98E-07	4.95E-07	1.2885E-03
557257.91	4205446.78	64902.17279	0.09452	0.09406	0.09447	0.09514	1.28E-03	3.55E-08	4.28E-08	5.09E-08	4.89E-08	1.2843E-03
556606.99	4204618.12	64723.73494	0.26951	0.20807	0.52838	0.54770	1.28E-03	1.01E-07	9.47E-08	2.85E-07	2.81E-07	1.2814E-03
557392.52	4205379.48	64603.07083	0.09549	0.10280	0.09554	0.09576	1.28E-03	3.58E-08	4.68E-08	5.15E-08	4.92E-08	1.2784E-03
556575.46	4204688.32	64504.91102	0.22766	0.18015	0.40966	0.42322	1.28E-03	8.54E-08	8.20E-08	2.21E-07	2.17E-07	1.2769E-03
556621.95	4204584.55	64352.34107	0.29316	0.22346	0.60311	0.62622	1.27E-03	1.10E-07	1.02E-07	3.25E-07	3.22E-07	1.2741E-03
557206.76	4205467.78	64273.90609	0.09257	0.09104	0.09624	0.09715	1.27E-03	3.47E-08	4.14E-08	5.19E-08	4.99E-08	1.2719E-03
557491.59	4205331.55	64237.75899	0.10687	0.11350	0.11107	0.11245	1.27E-03	4.01E-08	5.17E-08	5.99E-08	5.78E-08	1.2712E-03
556749.84	4204359.91	64206.37244	0.61895	0.43016	2.27750	2.38889	1.27E-03	2.32E-07	1.96E-07	1.23E-06	1.23E-06	1.2733E-03
556818.67	4205497.35	64049.91865	0.07767	0.07651	0.09197	0.09331	1.27E-03	2.91E-08	3.48E-08	4.96E-08	4.79E-08	1.2674E-03
557180.91	4205475.86	63969.61598	0.09140	0.08963	0.09689	0.09782	1.27E-03	3.43E-08	4.08E-08	5.22E-08	5.03E-08	1.2659E-03
557122.94	4205490.39	63580.82582	0.08881	0.08684	0.09827	0.09933	1.26E-03	3.33E-08	3.95E-08	5.30E-08	5.10E-08	1.2582E-03
557305.33	4204108.69	63495.01747	10.43187	22.05166	4.78838	4.51428	1.26E-03	3.91E-06	1.00E-05	2.58E-06	2.32E-06	1.2751E-03
556788.04	4204300.63	63405.17025	0.81134	0.54934	3.56730	3.72772	1.25E-03	3.04E-07	2.50E-07	1.92E-06	1.92E-06	1.2589E-03
556706.58	4204425.28	63320.49484	0.47465	0.33906	1.38611	1.45246	1.25E-03	1.78E-07	1.54E-07	7.47E-07	7.46E-07	1.2547E-03
557250.91	4205455.93	63284.71652	0.09355	0.09294	0.09405	0.09474	1.25E-03	3.51E-08	4.23E-08	5.07E-08	4.87E-08	1.2523E-03
556574.58	4204674.29	63014.53377	0.23174	0.18227	0.42159	0.43561	1.25E-03	8.69E-08	8.30E-08	2.27E-07	2.24E-07	1.2474E-03
557482.17	4204156.56	62817.39202	2.97262	8.82251	1.96905	1.92685	1.24E-03	1.12E-06	4.02E-06	1.06E-06	9.90E-07	1.2501E-03
557418.37	4205374.63	62605.97976	0.09504	0.10359	0.09598	0.09621	1.24E-03	3.57E-08	4.72E-08	5.18E-08	4.94E-08	1.2389E-03
556687.30	4204453.33	62591.86880	0.42645	0.30808	1.13935	1.19154	1.24E-03	1.60E-07	1.40E-07	6.14E-07	6.12E-07	1.2400E-03
556552.94	4204723.61	62405.01416	0.20738	0.16580	0.35864	0.36980	1.23E-03	7.78E-08	7.55E-08	1.93E-07	1.90E-07	1.2353E-03

556636.84	4204540.99	62404.77146	0.32379	0.24233	0.70982	0.73825	1.23E-03	1.21E-07	1.10E-07	3.83E-07	3.79E-07	1.2357E-03
556730.74	4204379.67	62299.47369	0.55417	0.38778	1.84520	1.93459	1.23E-03	2.08E-07	1.77E-07	9.95E-07	9.94E-07	1.2350E-03
557552.00	4204184.90	62185.51649	2.13962	7.22653	1.53569	1.51330	1.23E-03	8.03E-07	3.29E-06	8.28E-07	7.78E-07	1.2361E-03
557320.73	4204107.71	62148.58369	9.12960	21.58521	4.31888	4.09028	1.23E-03	3.42E-06	9.83E-06	2.33E-06	2.10E-06	1.2473E-03
556573.71	4204662.90	61780.46737	0.23494	0.18386	0.43111	0.44550	1.22E-03	8.81E-08	8.37E-08	2.32E-07	2.29E-07	1.2230E-03
557593.62	4204203.17	61468.22832	1.79524	6.16675	1.34049	1.32520	1.22E-03	6.73E-07	2.81E-06	7.23E-07	6.81E-07	1.2211E-03
557162.07	4205488.78	61420.72640	0.09000	0.08805	0.09677	0.09771	1.22E-03	3.38E-08	4.01E-08	5.22E-08	5.02E-08	1.2154E-03
557512.59	4205335.32	61227.75536	0.10851	0.11497	0.11464	0.11620	1.21E-03	4.07E-08	5.23E-08	6.18E-08	5.97E-08	1.2117E-03
557390.37	4205397.78	61113.41603	0.09385	0.10035	0.09320	0.09341	1.21E-03	3.52E-08	4.57E-08	5.03E-08	4.80E-08	1.2094E-03
557190.61	4205483.39	60955.76466	0.09068	0.08901	0.09561	0.09656	1.21E-03	3.40E-08	4.05E-08	5.16E-08	4.96E-08	1.2062E-03
557216.45	4205476.39	60948.05638	0.09150	0.09015	0.09450	0.09530	1.21E-03	3.43E-08	4.10E-08	5.10E-08	4.90E-08	1.2061E-03
557132.45	4205496.86	60922.29810	0.08865	0.08660	0.09754	0.09864	1.21E-03	3.33E-08	3.94E-08	5.26E-08	5.07E-08	1.2056E-03
556641.87	4204519.59	60843.08185	0.33781	0.25035	0.76253	0.79343	1.20E-03	1.27E-07	1.14E-07	4.11E-07	4.08E-07	1.2049E-03
556820.72	4204253.99	60771.74451	1.04547	0.69333	5.12018	5.34134	1.20E-03	3.92E-07	3.16E-07	2.76E-06	2.74E-06	1.2086E-03
556651.27	4204499.78	60387.62450	0.35641	0.26194	0.83443	0.86906	1.19E-03	1.34E-07	1.19E-07	4.50E-07	4.47E-07	1.1960E-03
557339.80	4204105.03	60384.41368	8.03209	22.71704	3.86666	3.67702	1.19E-03	3.01E-06	1.03E-05	2.08E-06	1.89E-06	1.2121E-03
557506.32	4204156.48	60182.93538	2.67482	8.88012	1.78593	1.75000	1.19E-03	1.00E-06	4.04E-06	9.63E-07	8.99E-07	1.1977E-03
556605.93	4204579.21	60120.02756	0.28316	0.21460	0.57452	0.59562	1.19E-03	1.06E-07	9.77E-08	3.10E-07	3.06E-07	1.1903E-03
556856.78	4204221.16	60098.71283	1.41022	0.92639	8.47401	8.87014	1.19E-03	5.29E-07	4.22E-07	4.57E-06	4.56E-06	1.1992E-03
556749.84	4204340.15	60080.42980	0.63155	0.43354	2.31348	2.42084	1.19E-03	2.37E-07	1.97E-07	1.25E-06	1.24E-06	1.1917E-03
556572.83	4204645.37	59974.93547	0.24000	0.18635	0.44630	0.46125	1.19E-03	9.00E-08	8.48E-08	2.41E-07	2.37E-07	1.1873E-03
557351.06	4205423.63	59872.65402	0.09289	0.09695	0.09112	0.09160	1.18E-03	3.48E-08	4.41E-08	4.91E-08	4.71E-08	1.1848E-03
556672.40	4204457.71	59552.18776	0.40221	0.29031	1.02755	1.07230	1.18E-03	1.51E-07	1.32E-07	5.54E-07	5.51E-07	1.1797E-03
557355.93	4204104.29	59461.53945	7.22217	23.17007	3.54852	3.38549	1.18E-03	2.71E-06	1.05E-05	1.91E-06	1.74E-06	1.1934E-03
557330.06	4205436.55	59426.26507	0.09261	0.09537	0.09062	0.09110	1.18E-03	3.47E-08	4.34E-08	4.89E-08	4.68E-08	1.1760E-03
557702.02	4204294.05	59373.99797	0.99083	2.29890	0.86712	0.86599	1.17E-03	3.72E-07	1.05E-06	4.68E-07	4.45E-07	1.1771E-03
557418.37	4205392.40	59290.06207	0.09347	0.10120	0.09366	0.09378	1.17E-03	3.51E-08	4.61E-08	5.05E-08	4.82E-08	1.1733E-03
556538.04	4204723.61	59264.00973	0.20163	0.16079	0.34613	0.35662	1.17E-03	7.56E-08	7.32E-08	1.87E-07	1.83E-07	1.1731E-03
557141.79	4205500.62	59231.62518	0.08850	0.08644	0.09682	0.09789	1.17E-03	3.32E-08	3.94E-08	5.22E-08	5.03E-08	1.1721E-03
557467.36	4205373.55	59180.28397	0.09968	0.10558	0.10052	0.10144	1.17E-03	3.74E-08	4.81E-08	5.42E-08	5.21E-08	1.1711E-03
557371.34	4204105.76	59174.52297	6.49440	22.22786	3.28308	3.14232	1.17E-03	2.44E-06	1.01E-05	1.77E-06	1.61E-06	1.1868E-03
556621.38	4204540.43	58910.70109	0.30992	0.23117	0.66410	0.68950	1.17E-03	1.16E-07	1.05E-07	3.58E-07	3.54E-07	1.1665E-03
557224.53	4205481.78	58852.27338	0.09085	0.08955	0.09321	0.09397	1.16E-03	3.41E-08	4.08E-08	5.03E-08	4.83E-08	1.1646E-03
556730.74	4204359.91	58661.89391	0.56545	0.39100	1.89263	1.98036	1.16E-03	2.12E-07	1.78E-07	1.02E-06	1.02E-06	1.1631E-03
557307.99	4205450.55	58526.24608	0.09221	0.09369	0.09050	0.09093	1.16E-03	3.46E-08	4.27E-08	4.88E-08	4.67E-08	1.1582E-03
556653.04	4205455.95	58497.27590	0.07774	0.07495	0.09245	0.09386	1.16E-03	2.92E-08	3.41E-08	4.98E-08	4.82E-08	1.1576E-03
557528.75	4205342.86	58358.23169	0.10699	0.11360	0.11606	0.11785	1.15E-03	4.01E-08	5.17E-08	6.26E-08	6.06E-08	1.1549E-03
557608.84	4204193.02	58271.73553	1.75579	7.07464	1.28548	1.26967	1.15E-03	6.59E-07	3.22E-06	6.93E-07	6.52E-07	1.1582E-03
556690.81	4204418.27	58141.84171	0.44969	0.31881	1.25199	1.30805	1.15E-03	1.69E-07	1.45E-07	6.75E-07	6.72E-07	1.1520E-03
556788.04	4204280.87	58089.30601	0.82385	0.55030	3.50201	3.65245	1.15E-03	3.09E-07	2.51E-07	1.89E-06	1.88E-06	1.1537E-03
557358.06	4205430.63	58046.60111	0.09226	0.09610	0.09041	0.09070	1.15E-03	3.46E-08	4.38E-08	4.87E-08	4.66E-08	1.1487E-03
557183.07	4205495.78	58008.13901	0.08964	0.08775	0.09502	0.09589	1.15E-03	3.36E-08	4.00E-08	5.12E-08	4.93E-08	1.1479E-03
556570.20	4204627.84	57814.85714	0.24389	0.18782	0.45878	0.47411	1.14E-03	9.15E-08	8.55E-08	2.47E-07	2.44E-07	1.1446E-03
556630.20	4205444.53	57812.61024	0.07827	0.07512	0.09357	0.09499	1.14E-03	2.94E-08	3.42E-08	5.05E-08	4.88E-08	1.1440E-03
557390.40	4204105.03	57777.92582	5.75273	21.85985	2.97413	2.85540	1.14E-03	2.16E-06	9.95E-06	1.60E-06	1.47E-06	1.1584E-03
557201.37	4205492.55	57662.84335	0.08975	0.08815	0.09394	0.09479	1.14E-03	3.37E-08	4.01E-08	5.07E-08	4.87E-08	1.1411E-03
557569.26	4204170.69	57594.29939	2.07464	8.80924	1.44777	1.42483	1.14E-03	7.78E-07	4.01E-06	7.81E-07	7.32E-07	1.1458E-03
557489.98	4205373.55	57417.46306	0.10024	0.10628	0.10276	0.10382	1.14E-03	3.76E-08	4.84E-08	5.54E-08	5.33E-08	1.1362E-03
556628.57	4204514.53	57308.42618	0.32631	0.24058	0.72334	0.75141	1.13E-03	1.22E-07	1.10E-07	3.90E-07	3.86E-07	1.1349E-03
557719.04	4204291.47	57251.19005	0.95874	2.24619	0.83345	0.83208	1.13E-03	3.60E-07	1.02E-06	4.49E-07	4.28E-07	1.1350E-03
557395.75	4205416.09	57215.12007	0.09236	0.09812	0.09125	0.09178	1.13E-03	3.46E-08	4.47E-08	4.92E-08	4.72E-08	1.1322E-03
556768.94	4204300.63	57154.81759	0.72398	0.48721	2.84820	2.97219	1.13E-03	2.72E-07	2.22E-07	1.54E-06	1.53E-06	1.1344E-03
556711.64	4204379.67	57145.19992	0.50917	0.35467	1.56305	1.63412	1.13E-03	1.91E-07	1.61E-07	8.43E-07	8.40E-07	1.1327E-03
557474.36	4205383.24	57104.84967	0.09847	0.10441	0.09960	0.10055	1.13E-03	3.69E-08	4.75E-08	5.37E-08	5.17E-08	1.1301E-03
557147.17	4205507.62	56951.22643	0.08786	0.08578	0.09608	0.09714	1.13E-03	3.30E-08	3.91E-08	5.18E-08	4.99E-08	1.1270E-03
556539.17	4204688.23	56938.47106	0.21146	0.16625	0.37221	0.38367	1.13E-03	7.93E-08	7.57E-08	2.01E-07	1.97E-07	1.1271E-03
556570.20	4204614.69	56596.88045	0.24780	0.18970	0.47080	0.48656	1.12E-03	9.30E-08	8.64E-08	2.54E-07	2.50E-07	1.1205E-03
557340.83	4205446.24	56465.46731	0.09147	0.09422	0.08935	0.08974	1.12E-03	3.43E-08	4.29E-08	4.82E-08	4.61E-08	1.1174E-03
557233.68	4205488.78	56399.65294	0.09002	0.08884	0.09168	0.09245	1.12E-03	3.38E-08	4.04E-08	4.94E-08	4.75E-08	1.1161E-03
557404.34	4204102.83	56334.81062	5.32453	22.56794	2.77410	2.66780	1.11E-03	2.00E-06	1.03E-05	1.50E-06	1.37E-06	1.1298E-03
556632.17	4204499.78	56263.09143	0.33541	0.24560	0.75755	0.78709	1.11E-03	1.26E-07	1.12E-07	4.08E-07	4.04E-07	1.1143E-03
556522.40	4204722.87	56158.55861	0.19591	0.15576	0.33382	0.34366	1.11E-03	7.35E-08	7.09E-08	1.80E-07	1.77E-07	1.1116E-03
557290.76	4205469.39	56101.84883	0.09137	0.09149	0.08983	0.09040	1.11E-03	3.43E-08	4.17E-08	4.84E-08	4.64E-08	1.1102E-03
557425.12	4204106.00	55891.80071	4.67572	20.08694	2.52319	2.43460	1.11E-03	1.75E-06	9.15E-06	1.36E-06	1.25E-06	1.1194E-03
556657.50	4204454.21	55795.75403	0.38304	0.27516	0.94619	0.98520	1.10E-03	1.44E-07	1.25E-07	5.10E-07	5.06E-07	1.1052E-03
557316.60	4205460.24	55735.75744	0.09123	0.09256	0.08915	0.08957	1.10E-03	3.42E-08	4.21E-08	4.81E-08	4.60E-08	1.1029E-03
557209.99	4205497.93	55717.11414	0.08922	0.08762	0.09276	0.09358	1.10E-03	3.35E-08	3.99E-08	5.00E-08	4.81E-08	1.1026E-03
557420.52	4205413.94	55704.82704	0.09243	0.09859	0.09186	0.09223	1.10E-03	3.47E-08	4.49E-08	4.95E-08	4.74E-08	1.1023E-03
556675.91	4204424.41	55666.20346	0.42198	0.29930	1.11840	1.16622	1.10E-03	1.58E-07	1.36E-07	6.03E-07	5.99E-07	1.1029E-03
557735.54	4204291.98	55575.77550	0.92125	2.14673	0.79944	0.79809	1.10E-03	3.46E-07	9.77E-07	4.31E-07	4.10E-07	1.1018E-03
556605.09	4204539.87	55565.13283	0.29590	0.22001	0.61983	0.64243	1.10E-03	1.11E-07	1.00E-07	3.34E-07	3.30E-07	1.1003E-03
556540.05	4204668.07	55553.79998	0.21710	0.16928	0.38768	0.39970	1.10E-03	8.14E-08	7.71E-08	2.09E-07	2.05E-07	1.0997E-03
556571.95	4204599.79	55524.75857	0.25322	0.19260	0.48728	0.50367	1.10E-03	9.50E-08	8.77E-08	2.63E-07	2.59E-07	1.0993E-03
557359.68	4205443.55	55423.46887	0.09111	0.09462	0.08905	0.08953	1.10E-03	3.42E-08	4.31E-08	4.80E-08	4.60E-08	1.0968E-03
557536.29	4205359.01	55271.68928	0.10437	0.11089	0.11348	0.11499	1.09E-03	3.92E-08	5.05E-08	6.12E-08	5.91E-08	1.0938E-03
556730.74	4204340.15	55113.33628	0.57518	0.39305	1.92649	2.01170	1.09E-03	2.16E-07	1.79E-07	1.04E-06	1.03E-06	1.0929E-03
556541.80	4204654.92	54846.80010	0.22134	0.17167	0.39928	0.41174	1.09E-03	8.30E-08	7.82E-08	2.15E-07	2.12E-07	1.0858E-03
557444.18	4204105.27	54608.32463	4.24094	20.14597	2.32295	2.24595	1.08E-03	1.59E-06	9.17E-06	1.25E-06	1.15E-06	1.0936E-03
557497.52	4205387.55	54531.66448	0.09853	0.10443	0.10090	0.10206	1.08E-03	3.70E-08	4.75E-08	5.44E-08	5.24E-08	1.0791E-03
557181.45	4205510.32	54340.70688	0.08839	0.08638	0.09419	0.09520	1.08E-03	3.32E-08	3.93E-08	5.08E-08	4.89E-08	1.0753E-03
556634.48	4205465.94	54222.27808	0.07630	0.07343	0.09097	0.09235	1.07E-03	2.86E-08	3.34E-08	4.91E-08	4.74E-08	1.0730E-03
556612.74	4204514.53	54209.57300	0.31093	0.22861	0.67185	0.69668	1.07E-03	1.17E-07	1.04E-07	3.62E-07	3.58E-07	1.0735E-03
557152.02	4205517.85	54020.25035	0.08686	0.08476	0.09504	0.09614	1.07E-03	3.26E-08	3.86E-08	5.12E-08	4.94E-08	1.0690E-03
556711.64	4204359.91	54008.06485	0.51811	0.35681	1.60219	1.67229	1.07E-03	1.94E-07	1.62E-07	8.64E-07	8.59E-07	1.0707E-03
557300.45	4205475.86	53940.31890	0.09048	0.09077	0.08861	0.08916	1.07E-03	3.39E-08	4.13E-08	4.78E-08	4.58E-08	1.0674E-03
557752.04	4204291.98	53932.33834	0.88696	2.05373	0.76790	0.76654	1.07E-03	3.33E-07	9.35E-07	4.14E-07	3.94E-07	1.0692E-03
556854.62	4204207.71	53841.76928	1.38840	0.89971	8.22985	8.61046	1.07E-03	5.21E-07	4.10E-07	4.44E-06	4.42E-06	1.0751E-03
557274.60	4205487.16	53576.21032	0.08967	0.08930	0.08892	0.08951	1.06E-03	3.36E-08	4.07E-08	4.79E-08	4.60E-08	1.0602E-03
557477.59	4205404.24	53572.32319	0.09595	0.10140	0.09657	0.09747	1.06E-03	3.60E-08	4.62E-08	5.21E-08	5.01E-08	1.0602E-03
556815.81	4205531.62	53562.02503	0.07431	0.07328	0.08802	0.08932	1.06E-03	2.79E-08	3.34E-08	4.75E-08	4.59E-08	1.0599E-03
557324.14	4205468.86	53485.88656	0.09042	0.09169	0.08810	0.08852	1.06E-03	3.39E-08	4.17E-08	4.75E-08	4.55E-08	1.0584E-03
557479.38	4204110.40	53336.91474	3.48605	17.64330	2.00323	1.94517	1.06E-03	1.31E-06	8.03E-06	1.08E-06	9.99E-07	1.0667E-03
557458.12	4204103.07	53304.95035	3.97764	21.05204	2.18940	2.11912	1.05E-03	1.49E-06	9.58E-06	1.18E-06	1.09E-06	1.0680E-03
556568.45	4204581.38	53164.75016	0.25609	0.19303	0.49760	0.51415	1.05E-03	9.61E-08	8.79E-08	2.68E-07	2.64E-07	1.0526E-03
557215.91	4205507.09	53152.10277	0.08824	0.08668	0.09144	0.09217	1.05E-03	3.31E-08	3.95E-08	4.93E-08	4.74E-08	1.0518E-03
556788.04	4204261.11	53132.54476	0.83354	0.54933	3.44255	3.58434	1.05E-03	3.13E-07	2.50E-07	1.86E-06	1.84E-06	1.0555E-03
557770.08	4204304.36	53097.57325	0.82269	1.80280	0.72293	0.72227	1.05E-03	3.09E-07	8.21E-07	3.90E-07	3.71E-07	1.0525E-03
556641.72	4204457.71	53084.11215	0.36121	0.25925	0.85910	0.89277	1.05E-03	1.35E-07	1.18E-07	4.63E-07	4.59E-07	1.0515E-03
556692.54	4204379.67	52845.83988	0.46918	0.32563	1.34526	1.40263	1.05E-03	1.76E-07	1.48E-07	7.25E-07	7.21E-07	1.0474E-03
556539.17	4204635.64	52843.08971	0.22485	0.17287	0.41003	0.42277	1.05E-03	8.43E-08	7.87E-08	2.21E-07	2.17E-07	1.0461E-03
557544.90	4205371.40	52783.74853	0.10237	0.10886	0.11201	0.11361	1.04E-03	3.84E-08	4.96E-08	6.04E-08	5.84E-08	1.0446E-03
556506.01	4204718.40	52768.22640	0.19069	0.15093	0.32319	0.33244	1.04E-03	7.15E-08	6.87E-08	1.74E-07	1.71E-07	1.0445E-03
556768.94	4204280.87	52737.67390	0.73290	0.48696	2.82386	2.94088	1.04E-03	2.75E-07	2.22E-07	1.52E-06	1.51E-06	1.0470E-03
556613.07	4204499.78	52650.65157	0.31587	0.23055	0.69047	0.71584	1.04E-03	1.18E-07	1.05E-07	3.72E-07	3.68E-07	1.0427E-03
556659.25	4204427.03	52621.57053	0.39538	0.28003	1.00072	1.04121	1.04E-03	1.48E-07	1.27E-07	5.40E-07	5.35E-07	1.0425E-03
556749.84	4204300.63	52285.56133	0.65134	0.43634	2.33932	2.43724	1.03E-03	2.44E-07	1.99E-07	1.26E-06	1.25E-06	1.0375E-03
557174.45	4205521.62	51996.06522	0.08699	0.08492	0.09380	0.09484	1.03E-03	3.26E-08	3.87E-08	5.06E-08	4.87E-08	1.0290E-03
557498.45	4204109.67	51960.72542	3.19590	18.25107	1.85861	1.80732	1.03E-03	1.20E-06	8.31E-06	1.00E-06	9.29E-07	1.0395E-03
557502.90	4205402.09	51909.70667	0.09679	0.10251	0.09924	0.10014	1.03E-03	3.63E-08	4.67E-08	5.35E-08	5.15E-08	1.0273E-03
556568.45	4204567.36	51850.66819	0.25979	0.19456	0.50968	0.52658	1.03E-03	9.75E-08	8.86E-08	2.75E-07	2.71E-07	1.0266E-03
556644.48	4205484.50	51768.61021	0.07480	0.07220	0.08947	0.09087	1.02E-03	2.81E-08	3.29E-08	4.82E-08	4.67E-08	1.0244E-03
557309.06	4205483.93	51703.97891	0.08946	0.08987	0.08737	0.08789	1.02E-03	3.36E-08	4.09E-08	4.71E-08	4.52E-08	1.0232E-03
556845.79	4205544.47	51615.81316	0.07389	0.07297	0.08774	0.08899	1.02E-03	2.77E-08	3.32E-08	4.73E-08	4.57E-08	1.0214E-03
556538.30	4204621.61	51588.95905	0.22778	0.17403	0.41884	0.43183	1.02E-03	8.54E-08	7.92E-08	2.26E-07	2.22E-07	1.0213E-03
557285.37	4205496.32	50992.19308	0.08857	0.08842	0.08746	0.08802	1.01E-03	3.32E-08	4.03E-08	4.72E-08	4.52E-08	1.0091E-03
556711.64	4204340.15	50940.24144	0.52568	0.35799	1.63219	1.70061	1.01E-03	1.97E-07	1.63E-07	8.80E-07	8.74E-07	1.0100E-03
556570.20	4204554.21	50926.57317	0.26442	0.19687	0.52439	0.54179	1.01E-03	9.92E-08	8.96E-08	2.83E-07	2.78E-07	1.0084E-03
556614.49	4205473.08	50798.32176	0.07512	0.07213	0.08989	0.09129	1.01E-03	2.82E-08	3.28E-08	4.85E-08	4.69E-08	1.0052E-03

557537.32	4204117.00	50774.26298	2.65354	18.05990	1.61377	1.57495	1.00E-03	9.95E-07	8.22E-06	8.70E-07	8.09E-07	1.0155E-03
557512.39	4204107.47	50772.98926	3.02855	20.01285	1.76647	1.71891	1.00E-03	1.14E-06	9.11E-06	9.52E-07	8.83E-07	1.0167E-03
556625.95	4204461.22	50633.71576	0.34110	0.24468	0.78397	0.81322	1.00E-03	1.28E-07	1.11E-07	4.23E-07	4.18E-07	1.0029E-03
556537.42	4204610.22	50534.44949	0.22995	0.17479	0.42554	0.43869	1.00E-03	8.63E-08	7.96E-08	2.29E-07	2.25E-07	1.0005E-03
556646.98	4204427.03	50340.79213	0.37778	0.26708	0.92845	0.96447	9.96E-04	1.42E-07	1.22E-07	5.01E-07	4.96E-07	9.9729E-04
557258.99	4205509.24	50214.66554	0.08761	0.08677	0.08775	0.08837	9.94E-04	3.29E-08	3.95E-08	4.73E-08	4.54E-08	9.9370E-04
557168.53	4205530.78	50191.44234	0.08587	0.08376	0.09350	0.09452	9.93E-04	3.22E-08	3.81E-08	5.04E-08	4.86E-08	9.9324E-04
556692.54	4204359.91	50061.37363	0.47609	0.32686	1.37651	1.43319	9.91E-04	1.79E-07	1.49E-07	7.42E-07	7.36E-07	9.9231E-04
557552.44	4205387.55	50030.13383	0.09992	0.10632	0.10935	0.11079	9.90E-04	3.75E-08	4.84E-08	5.90E-08	5.69E-08	9.9008E-04
557604.06	4204138.27	49827.33195	1.98185	19.55732	1.30248	1.27842	9.86E-04	7.43E-07	8.90E-06	7.02E-07	6.57E-07	9.9688E-04
556500.80	4204683.39	49703.87140	0.19607	0.15289	0.33825	0.34790	9.83E-04	7.35E-08	6.96E-08	1.82E-07	1.79E-07	9.8393E-04
557657.35	4204157.58	49690.27259	1.64606	14.20900	1.13459	1.11759	9.83E-04	6.17E-07	6.47E-06	6.12E-07	5.74E-07	9.9143E-04
557640.48	4204150.98	49607.27218	1.73847	17.57549	1.18126	1.16232	9.82E-04	6.52E-07	8.00E-06	6.37E-07	5.97E-07	9.9140E-04
557556.39	4204116.27	49499.05703	2.46582	21.20025	1.51264	1.47768	9.79E-04	9.25E-07	9.65E-06	8.16E-07	7.59E-07	9.9153E-04
556593.97	4204499.78	49426.21644	0.29763	0.21665	0.63146	0.65334	9.78E-04	1.12E-07	9.86E-08	3.40E-07	3.36E-07	9.7882E-04
556594.68	4204498.61	49420.83910	0.29858	0.21724	0.63463	0.65665	9.78E-04	1.12E-07	9.89E-08	3.42E-07	3.37E-07	9.7872E-04
556493.35	4204699.78	49391.80481	0.18963	0.14868	0.32278	0.33183	9.77E-04	7.11E-08	6.77E-08	1.74E-07	1.70E-07	9.7774E-04
556673.44	4204379.67	49167.73761	0.43335	0.29993	1.17185	1.21870	9.73E-04	1.63E-07	1.37E-07	6.32E-07	6.26E-07	9.7438E-04
557587.92	4204126.54	49064.65140	2.14040	22.67983	1.36509	1.33725	9.71E-04	8.03E-07	1.03E-05	7.36E-07	6.87E-07	9.8333E-04
557621.66	4204139.74	48984.50203	1.86784	22.32420	1.23806	1.21613	9.69E-04	7.01E-07	1.02E-05	6.68E-07	6.25E-07	9.8135E-04
556536.54	4204592.69	48954.88808	0.23330	0.17594	0.43605	0.44945	9.69E-04	8.75E-08	8.01E-08	2.35E-07	2.31E-07	9.6924E-04
556749.84	4204280.87	48746.54507	0.65914	0.43639	2.34114	2.43422	9.64E-04	2.47E-07	1.99E-07	1.26E-06	1.25E-06	9.6744E-04
556768.94	4204261.11	48649.14662	0.74006	0.48563	2.80072	2.91129	9.63E-04	2.78E-07	2.21E-07	1.51E-06	1.50E-06	9.6606E-04
556730.74	4204300.63	48525.23676	0.59074	0.39453	1.96496	2.04360	9.60E-04	2.22E-07	1.80E-07	1.06E-06	1.05E-06	9.6262E-04
557570.32	4204114.07	48364.79367	2.35035	26.48107	1.44517	1.41241	9.57E-04	8.82E-07	1.21E-05	7.79E-07	7.26E-07	9.7138E-04
557268.14	4205516.24	48327.04601	0.08682	0.08609	0.08658	0.08717	9.56E-04	3.26E-08	3.92E-08	4.67E-08	4.48E-08	9.5635E-04
556817.49	4204215.24	48190.83410	1.03670	0.66664	4.74123	4.93638	9.53E-04	3.89E-07	3.04E-07	2.56E-06	2.54E-06	9.5928E-04
556822.95	4205555.89	48130.45896	0.07228	0.07137	0.08543	0.08664	9.52E-04	2.71E-08	3.25E-08	4.61E-08	4.45E-08	9.5245E-04
556496.33	4204661.79	47614.79675	0.19840	0.15324	0.34547	0.35523	9.42E-04	7.44E-08	6.98E-08	1.86E-07	1.83E-07	9.4261E-04
556564.01	4204528.42	47602.80963	0.26582	0.19540	0.53182	0.54898	9.42E-04	9.97E-08	8.90E-08	2.87E-07	2.82E-07	9.4261E-04
556608.42	4204459.46	47582.85314	0.32192	0.23021	0.71729	0.74254	9.41E-04	1.21E-07	1.05E-07	3.87E-07	3.82E-07	9.4246E-04
556628.58	4204429.66	47552.39451	0.35263	0.24907	0.83129	0.86168	9.41E-04	1.32E-07	1.13E-07	4.48E-07	4.43E-07	9.4200E-04
557274.60	4205518.93	47484.35080	0.08650	0.08586	0.08599	0.08658	9.40E-04	3.24E-08	3.91E-08	4.64E-08	4.45E-08	9.3967E-04
556692.54	4204340.15	47378.00730	0.48196	0.32743	1.40195	1.45740	9.37E-04	1.81E-07	1.49E-07	7.56E-07	7.49E-07	9.3924E-04
557244.99	4205527.55	47313.01688	0.08605	0.08486	0.08756	0.08830	9.36E-04	3.23E-08	3.86E-08	4.72E-08	4.54E-08	9.3629E-04
557561.59	4205404.78	47195.49668	0.09740	0.10371	0.10687	0.10839	9.34E-04	3.65E-08	4.72E-08	5.76E-08	5.57E-08	9.3399E-04
556533.91	4204575.16	47193.61155	0.23540	0.17610	0.44335	0.45680	9.34E-04	8.83E-08	8.02E-08	2.39E-07	2.35E-07	9.3440E-04
556800.10	4205557.32	46957.07830	0.07162	0.07064	0.08433	0.08552	9.29E-04	2.69E-08	3.22E-08	4.55E-08	4.39E-08	9.2923E-04
556673.44	4204359.91	46686.76018	0.43870	0.30055	1.19688	1.24316	9.24E-04	1.65E-07	1.37E-07	6.45E-07	6.39E-07	9.2532E-04
556496.33	4204643.16	46473.27107	0.20195	0.15479	0.35516	0.36517	9.20E-04	7.58E-08	7.05E-08	1.92E-07	1.88E-07	9.2003E-04
556849.24	4204190.49	46453.31993	1.32651	0.84394	7.65414	7.99790	9.19E-04	4.98E-07	3.84E-07	4.13E-06	4.11E-06	9.2823E-04
556564.01	4204514.39	46343.16377	0.26874	0.19628	0.54211	0.55945	9.17E-04	1.01E-07	8.94E-08	2.92E-07	2.87E-07	9.1770E-04
556533.91	4204562.01	46155.25296	0.23797	0.17699	0.45149	0.46511	9.13E-04	8.93E-08	8.06E-08	2.43E-07	2.39E-07	9.1387E-04
556654.34	4204379.67	45984.55018	0.40115	0.27710	1.03082	1.06943	9.10E-04	1.50E-07	1.26E-07	5.56E-07	5.49E-07	9.1122E-04
556596.15	4204459.46	45764.12340	0.30900	0.22070	0.67428	0.69711	9.05E-04	1.16E-07	1.00E-07	3.64E-07	3.58E-07	9.0641E-04
556614.55	4204431.42	45614.83404	0.33507	0.23655	0.76757	0.79440	9.03E-04	1.26E-07	1.08E-07	4.14E-07	4.08E-07	9.0358E-04
556749.84	4204261.11	45573.34690	0.66660	0.43636	2.34450	2.43291	9.02E-04	2.50E-07	1.99E-07	1.26E-06	1.25E-06	9.0466E-04
556730.74	4204280.87	45552.02668	0.59703	0.39443	1.97537	2.05029	9.01E-04	2.24E-07	1.80E-07	1.07E-06	1.05E-06	9.0380E-04
557254.68	4205535.08	45474.10668	0.08529	0.08419	0.08642	0.08708	9.00E-04	3.20E-08	3.83E-08	4.66E-08	4.47E-08	8.9990E-04
556663.04	4205528.77	45329.22323	0.07124	0.06917	0.08592	0.08724	8.97E-04	2.67E-08	3.15E-08	4.63E-08	4.48E-08	8.9702E-04
556711.64	4204300.63	45296.40929	0.53789	0.35857	1.67237	1.73596	8.96E-04	2.02E-07	1.63E-07	9.02E-07	8.92E-07	8.9838E-04
556535.67	4204547.11	45212.90302	0.24188	0.17876	0.46349	0.47744	8.95E-04	9.07E-08	8.14E-08	2.50E-07	2.45E-07	8.9524E-04
556831.52	4205574.46	44626.80493	0.07087	0.07003	0.08372	0.08490	8.83E-04	2.66E-08	3.19E-08	4.51E-08	4.36E-08	8.8312E-04
556494.84	4204616.35	44614.39979	0.20605	0.15616	0.36696	0.37720	8.83E-04	7.73E-08	7.11E-08	1.98E-07	1.94E-07	8.8327E-04
556673.44	4204340.15	44284.01362	0.44312	0.30060	1.21751	1.26279	8.76E-04	1.66E-07	1.37E-07	6.56E-07	6.49E-07	8.7780E-04
556788.04	4204221.59	44243.68395	0.84478	0.54237	3.36912	3.49670	8.75E-04	3.17E-07	2.47E-07	1.82E-06	1.80E-06	8.7957E-04
556583.00	4204460.34	44053.36931	0.29576	0.21111	0.63166	0.65218	8.72E-04	1.11E-07	9.61E-08	3.41E-07	3.35E-07	8.7251E-04
556654.34	4204359.91	43753.69786	0.40526	0.27728	1.05073	1.08883	8.66E-04	1.52E-07	1.26E-07	5.67E-07	5.59E-07	8.6710E-04
556598.77	4204431.42	43432.46483	0.31709	0.22361	0.70585	0.72929	8.59E-04	1.19E-07	1.02E-07	3.81E-07	3.75E-07	8.6032E-04
556532.16	4204528.71	43316.64660	0.24265	0.17783	0.46765	0.48144	8.57E-04	9.10E-08	8.10E-08	2.52E-07	2.47E-07	8.5772E-04
556635.24	4204379.67	43207.20198	0.37216	0.25678	0.91413	0.94621	8.55E-04	1.40E-07	1.17E-07	4.93E-07	4.86E-07	8.5612E-04
556711.64	4204280.87	42705.81832	0.54259	0.35815	1.68428	1.74486	8.45E-04	2.04E-07	1.63E-07	9.08E-07	8.97E-07	8.4714E-04
556730.74	4204261.11	42699.47441	0.60191	0.39357	1.98004	2.05091	8.45E-04	2.26E-07	1.79E-07	1.07E-06	1.05E-06	8.4737E-04
556692.54	4204300.63	42436.97460	0.49126	0.32725	1.43822	1.48990	8.40E-04	1.84E-07	1.49E-07	7.75E-07	7.66E-07	8.4152E-04
556565.47	4204465.60	42302.68990	0.27867	0.19915	0.57826	0.59614	8.37E-04	1.05E-07	9.07E-08	3.12E-07	3.06E-07	8.3780E-04
556532.16	4204514.68	42223.87110	0.24479	0.17832	0.47508	0.48895	8.35E-04	9.18E-08	8.12E-08	2.56E-07	2.51E-07	8.3611E-04
556673.44	4204320.39	42039.48358	0.44695	0.30040	1.23480	1.27873	8.32E-04	1.68E-07	1.37E-07	6.66E-07	6.57E-07	8.3341E-04
556489.63	4204585.81	41956.05178	0.20810	0.15564	0.37452	0.38471	8.30E-04	7.81E-08	7.09E-08	2.02E-07	1.98E-07	8.3068E-04
556654.34	4204340.15	41604.24890	0.40860	0.27704	1.06743	1.10468	8.23E-04	1.53E-07	1.26E-07	5.76E-07	5.68E-07	8.2459E-04
556631.63	4205541.62	41524.23285	0.06947	0.06724	0.08396	0.08517	8.22E-04	2.61E-08	3.06E-08	4.53E-08	4.38E-08	8.2173E-04
556533.91	4204501.54	41422.28062	0.24793	0.17962	0.48521	0.49930	8.20E-04	9.30E-08	8.18E-08	2.62E-07	2.57E-07	8.2026E-04
556755.84	4205578.74	41371.79303	0.06887	0.06778	0.08100	0.08216	8.19E-04	2.58E-08	3.09E-08	4.37E-08	4.22E-08	8.1871E-04
556671.60	4205557.32	41327.44717	0.06900	0.06722	0.08288	0.08414	8.18E-04	2.59E-08	3.06E-08	4.47E-08	4.32E-08	8.1784E-04
556768.94	4204221.59	41221.01332	0.74817	0.47951	2.76544	2.86366	8.16E-04	2.81E-07	2.18E-07	1.49E-06	1.47E-06	8.1905E-04
556635.24	4204359.91	41197.89761	0.37532	0.25667	0.93001	0.96159	8.15E-04	1.41E-07	1.17E-07	5.01E-07	4.94E-07	8.1638E-04
556582.12	4204427.91	41034.59641	0.29998	0.21106	0.65048	0.67085	8.12E-04	1.13E-07	9.61E-08	3.51E-07	3.45E-07	8.1280E-04
556650.19	4205553.04	40885.51910	0.06890	0.06692	0.08320	0.08439	8.09E-04	2.58E-08	3.05E-08	4.49E-08	4.34E-08	8.0909E-04
556616.14	4204379.67	40752.47629	0.34596	0.23860	0.81613	0.84296	8.06E-04	1.30E-07	1.09E-07	4.40E-07	4.33E-07	8.0743E-04
556549.69	4204463.85	40325.79106	0.26534	0.18936	0.53917	0.55502	7.98E-04	9.95E-08	8.62E-08	2.91E-07	2.85E-07	7.9864E-04
556491.25	4204556.28	40310.30425	0.21306	0.15746	0.38907	0.39951	7.98E-04	7.99E-08	7.17E-08	2.10E-07	2.05E-07	7.9814E-04
556788.04	4204201.83	40216.65190	0.84609	0.53649	3.35720	3.47804	7.96E-04	3.17E-07	2.44E-07	1.81E-06	1.79E-06	7.9987E-04
556692.54	4204280.87	40121.67994	0.49454	0.32649	1.44897	1.49814	7.94E-04	1.86E-07	1.49E-07	7.81E-07	7.70E-07	7.9572E-04
556711.64	4204261.11	40112.47175	0.54553	0.35675	1.68875	1.74582	7.94E-04	2.05E-07	1.62E-07	9.11E-07	8.97E-07	7.9583E-04
556844.94	4204171.11	39946.88645	1.27470	0.79559	7.33749	7.65534	7.90E-04	4.78E-07	3.62E-07	3.96E-06	3.93E-06	7.9911E-04
556673.44	4204300.63	39902.06400	0.45007	0.29988	1.24827	1.29048	7.89E-04	1.69E-07	1.37E-07	6.73E-07	6.63E-07	7.9113E-04
556654.34	4204320.39	39558.56958	0.41130	0.27651	1.08112	1.11720	7.83E-04	1.54E-07	1.26E-07	5.83E-07	5.74E-07	7.8413E-04
556802.96	4204189.41	39467.90692	0.93351	0.58773	3.96726	4.11422	7.81E-04	3.50E-07	2.68E-07	2.14E-06	2.11E-06	7.8577E-04
556635.24	4204340.15	39266.14747	0.37783	0.25626	0.94340	0.97424	7.77E-04	1.42E-07	1.17E-07	5.09E-07	5.01E-07	7.7818E-04
556488.09	4204541.08	38965.99436	0.21301	0.15644	0.39039	0.40067	7.71E-04	7.99E-08	7.12E-08	2.10E-07	2.06E-07	7.7154E-04
556749.84	4204221.59	38949.48515	0.67056	0.42974	2.31885	2.39600	7.71E-04	2.52E-07	1.96E-07	1.25E-06	1.23E-06	7.7357E-04
556616.14	4204359.91	38935.53274	0.34836	0.23831	0.82874	0.85508	7.70E-04	1.31E-07	1.08E-07	4.47E-07	4.39E-07	7.7149E-04
556561.96	4204426.16	38674.38937	0.28053	0.19721	0.59003	0.60730	7.65E-04	1.05E-07	8.98E-08	3.18E-07	3.12E-07	7.6603E-04
556492.52	4204527.79	38657.66628	0.21720	0.15873	0.40191	0.41250	7.65E-04	8.15E-08	7.23E-08	2.17E-07	2.12E-07	7.6545E-04
556597.04	4204379.67	38559.56981	0.32221	0.22227	0.73281	0.75537	7.63E-04	1.21E-07	1.01E-07	3.95E-07	3.88E-07	7.6393E-04
556728.71	4205591.59	38518.79786	0.06730	0.06614	0.07956	0.08071	7.62E-04	2.52E-08	3.01E-08	4.29E-08	4.15E-08	7.6226E-04
556525.15	4204469.98	38193.95502	0.24529	0.17541	0.48177	0.49500	7.56E-04	9.20E-08	7.99E-08	2.60E-07	2.54E-07	7.5638E-04
556643.05	4205573.03	37896.35400	0.06714	0.06525	0.08131	0.08244	7.50E-04	2.52E-08	2.97E-08	4.38E-08	4.24E-08	7.4995E-04
556673.44	4204280.87	37843.49793	0.45240	0.29901	1.25765	1.29776	7.49E-04	1.70E-07	1.36E-07	6.78E-07	6.67E-07	7.5041E-04
556692.54	4204261.11	37833.18638	0.49654	0.32509	1.45396	1.50019	7.49E-04	1.86E-07	1.48E-07	7.84E-07	7.71E-07	7.5045E-04
556768.94	4204201.83	37812.21682	0.74896	0.47478	2.75487	2.84653	7.48E-04	2.81E-07	2.16E-07	1.49E-06	1.46E-06	7.5159E-04
556654.34	4204300.63	37615.84913	0.41340	0.27575	1.09179	1.12641	7.44E-04	1.55E-07	1.26E-07	5.89E-07	5.79E-07	7.4571E-04
556711.64	4204241.35	37599.15727	0.54716	0.35473	1.68804	1.74120	7.44E-04	2.05E-07	1.61E-07	9.10E-07	8.95E-07	7.4610E-04
556770.12	4205607.29	37487.26533	0.06685	0.06596	0.07833	0.07935	7.42E-04	2.51E-08	3.00E-08	4.22E-08	4.08E-08	7.4185E-04
556745.85	4205603.01	37421.98400	0.06672	0.06570	0.07837	0.07951	7.40E-04	2.50E-08	2.99E-08	4.23E-08	4.09E-08	7.4056E-04
556635.24	4204320.39	37412.00421	0.37974	0.25557	0.95425	0.98408	7.40E-04	1.42E-07	1.16E-07	5.15E-07	5.06E-07	7.4150E-04
556616.14	4204340.15	37185.50620	0.35022	0.23777	0.83933	0.86500	7.36E-04	1.31E-07	1.08E-07	4.53E-07	4.44E-07	7.3688E-04
556730.74	4204221.59	36982.97319	0.60471	0.38802	1.96712	2.02829	7.32E-04	2.27E-07	1.77E-07	1.06E-06	1.04E-06	7.3424E-04
556486.19	4204511.32	36958.22996	0.21495	0.15606	0.39793	0.40809	7.31E-04	8.06E-08	7.10E-08	2.15E-07	2.10E-07	7.3182E-04
556597.04	4204359.91	36910.38636	0.32402	0.22186	0.74278	0.76487	7.30E-04	1.22E-07	1.01E-07	4.01E-07	3.93E-07	7.3131E-04
556577.94	4204379.67	36605.29686	0.30069	0.20761	0.66140	0.68047	7.24E-04	1.13E-07	9.45E-08	3.57E-07	3.50E-07	7.2518E-04
556788.04	4204182.07	36429.59198	0.84440	0.52906	3.35753	3.47086	7.21E-04	3.17E-07	2.41E-07	1.81E-06	1.78E-06	7.2494E-04
556547.06	4204414.76	36336.20268	0.26797	0.18765	0.55416	0.56937	7.19E-04	1.01E-07	8.54E-08	2.99E-07	2.93E-07	7.1972E-04
556558.84	4204399.43	36300.63392	0.27991	0.19484	0.59257	0.60910	7.18E-04	1.05E-07	8.87E-08	3.20E-07	3.13E-07	7.1906E-04
556487.45	4204496.76	36233.86127	0.21706	0.15676	0.40453	0.41474	7.17E-04	8.14E-08	7.14E-08	2.18E-07	2.13E-07	7.1750E-04
556522.52	4204441.94	36005.63306	0.24574	0.17393	0.48655	0.49936	7.12E-04	9.22E-08	7.92E-08	2.62E-07	2.57E-07	7.1309E-04
556749.84	4204201.83	35950.88367	0.67046	0.42557	2.30734	2.37832	7.11E-04	2.52E-07	1.94E-07	1.24E-06	1.22E-06	7.1423E-04
556673.44	4204261.11	35813.80121	0.45371	0.29768	1.26228	1.29992	7.09E-04	1.70E-07	1.36E-07	6.81E-07	6.68E-07	7.1026E-04
556654.34	4204280.87	35792.58191	0.41509	0.27491	1.09974	1.13261	7.08E-04	1.56E-07	1.25E-07	5.93E-07	5.82E-07	7.0964E-04

556635.24	4204300.63	35641.39476	0.38112	0.25470	0.96255	0.99112	7.05E-04	1.43E-07	1.16E-07	5.19E-07	5.09E-07	7.0648E-04
556692.54	4204241.35	35614.27929	0.49750	0.32324	1.45420	1.49711	7.05E-04	1.87E-07	1.47E-07	7.84E-07	7.69E-07	7.0654E-04
556616.14	4204320.39	35505.38221	0.35156	0.23703	0.84786	0.87265	7.02E-04	1.32E-07	1.08E-07	4.57E-07	4.48E-07	7.0365E-04
556597.04	4204340.15	35325.90414	0.32537	0.22128	0.75113	0.77261	6.99E-04	1.22E-07	1.01E-07	4.05E-07	3.97E-07	6.9997E-04
556488.09	4204479.03	35237.29804	0.21884	0.15706	0.41078	0.42096	6.97E-04	8.21E-08	7.15E-08	2.21E-07	2.16E-07	6.9779E-04
556711.64	4204221.59	35140.46646	0.54732	0.35202	1.68198	1.73077	6.95E-04	2.05E-07	1.60E-07	9.07E-07	8.89E-07	6.9744E-04
556577.94	4204359.91	35092.59665	0.30200	0.20711	0.66917	0.68780	6.94E-04	1.13E-07	9.43E-08	3.61E-07	3.53E-07	6.9525E-04
556558.84	4204379.67	34854.37130	0.28117	0.19441	0.59969	0.61589	6.90E-04	1.05E-07	8.85E-08	3.23E-07	3.16E-07	6.9045E-04
556539.74	4204399.43	34613.35335	0.26254	0.18299	0.54043	0.55458	6.85E-04	9.85E-08	8.33E-08	2.91E-07	2.85E-07	6.8561E-04
556768.94	4204182.07	34606.23825	0.74784	0.46922	2.74905	2.83335	6.85E-04	2.81E-07	2.14E-07	1.48E-06	1.46E-06	6.8814E-04
556519.25	4204424.23	34527.85375	0.24431	0.17192	0.48495	0.49728	6.83E-04	9.16E-08	7.83E-08	2.61E-07	2.56E-07	6.8385E-04
556730.74	4204201.83	34293.95974	0.60378	0.38420	1.95493	2.01052	6.79E-04	2.26E-07	1.75E-07	1.05E-06	1.03E-06	6.8102E-04
556737.28	4205625.86	34272.53386	0.06481	0.06386	0.07601	0.07708	6.78E-04	2.43E-08	2.91E-08	4.10E-08	3.96E-08	6.7824E-04
556654.34	4204261.11	34011.88136	0.41606	0.27377	1.10399	1.13482	6.73E-04	1.56E-07	1.25E-07	5.95E-07	5.83E-07	6.7441E-04
556635.24	4204280.87	33961.12892	0.38207	0.25373	0.96837	0.99545	6.72E-04	1.43E-07	1.16E-07	5.22E-07	5.11E-07	6.7324E-04
556483.02	4204465.10	33929.33238	0.21637	0.15459	0.40601	0.41576	6.71E-04	8.12E-08	7.04E-08	2.19E-07	2.14E-07	6.7190E-04
556616.14	4204300.63	33913.02156	0.35251	0.23620	0.85444	0.87815	6.71E-04	1.32E-07	1.08E-07	4.61E-07	4.51E-07	6.7215E-04
556673.44	4204241.35	33851.02034	0.45424	0.29605	1.26282	1.29768	6.70E-04	1.70E-07	1.35E-07	6.81E-07	6.67E-07	6.7142E-04
556597.04	4204320.39	33811.74815	0.32634	0.22057	0.75785	0.77856	6.69E-04	1.22E-07	1.00E-07	4.09E-07	4.00E-07	6.7002E-04
556577.94	4204340.15	33647.34993	0.30295	0.20650	0.67564	0.69371	6.66E-04	1.14E-07	9.40E-08	3.64E-07	3.56E-07	6.6667E-04
556558.84	4204359.91	33457.37406	0.28206	0.19385	0.60566	0.62144	6.62E-04	1.06E-07	8.83E-08	3.27E-07	3.19E-07	6.6282E-04
556692.54	4204221.59	33445.68355	0.49733	0.32091	1.44949	1.48868	6.62E-04	1.87E-07	1.46E-07	7.82E-07	7.65E-07	6.6363E-04
556539.74	4204379.67	33279.52204	0.26343	0.18251	0.54598	0.55981	6.58E-04	9.88E-08	8.31E-08	2.94E-07	2.88E-07	6.5922E-04
556749.84	4204182.07	33136.15583	0.66911	0.42096	2.29643	2.36054	6.56E-04	2.51E-07	1.92E-07	1.24E-06	1.21E-06	6.5852E-04
556520.64	4204399.43	33046.75527	0.24656	0.17216	0.49449	0.50665	6.54E-04	9.25E-08	7.84E-08	2.67E-07	2.60E-07	6.5455E-04
556788.04	4204162.31	32958.99631	0.84084	0.52086	3.37039	3.47479	6.52E-04	3.15E-07	2.37E-07	1.82E-06	1.79E-06	6.5627E-04
556480.49	4204450.54	32872.02646	0.21543	0.15324	0.40515	0.41462	6.50E-04	8.08E-08	6.98E-08	2.18E-07	2.13E-07	6.5098E-04
556711.64	4204201.83	32773.93022	0.54631	0.34884	1.67156	1.71554	6.48E-04	2.05E-07	1.59E-07	9.01E-07	8.81E-07	6.5060E-04
556616.14	4204280.87	32375.08252	0.35300	0.23522	0.85870	0.88115	6.41E-04	1.32E-07	1.07E-07	4.63E-07	4.53E-07	6.4172E-04
556635.24	4204261.11	32359.61269	0.38261	0.25267	0.97160	0.99697	6.40E-04	1.44E-07	1.15E-07	5.24E-07	5.12E-07	6.4155E-04
556597.04	4204300.63	32358.96808	0.32692	0.21976	0.76281	0.78260	6.40E-04	1.23E-07	1.00E-07	4.11E-07	4.02E-07	6.4128E-04
556577.94	4204320.39	32270.96404	0.30359	0.20582	0.68080	0.69819	6.39E-04	1.14E-07	9.37E-08	3.67E-07	3.59E-07	6.3944E-04
556654.34	4204241.35	32252.28291	0.41620	0.27229	1.10424	1.13274	6.38E-04	1.56E-07	1.24E-07	5.95E-07	5.82E-07	6.3959E-04
556558.84	4204340.15	32136.89239	0.28270	0.19324	0.61064	0.62591	6.36E-04	1.06E-07	8.80E-08	3.29E-07	3.22E-07	6.3670E-04
556482.39	4204434.08	32126.43899	0.21741	0.15389	0.41180	0.42126	6.36E-04	8.16E-08	7.01E-08	2.22E-07	2.16E-07	6.3624E-04
556539.74	4204359.91	32010.40006	0.26408	0.18197	0.55066	0.56410	6.33E-04	9.91E-08	8.28E-08	2.97E-07	2.90E-07	6.3412E-04
556673.44	4204221.59	31924.10754	0.45385	0.29404	1.25885	1.29060	6.32E-04	1.70E-07	1.34E-07	6.79E-07	6.63E-07	6.3329E-04
556520.64	4204379.67	31840.82273	0.24724	0.17171	0.49889	0.51074	6.30E-04	9.27E-08	7.82E-08	2.69E-07	2.62E-07	6.3070E-04
556730.74	4204182.07	31793.33834	0.60219	0.38029	1.94175	1.99123	6.29E-04	2.26E-07	1.73E-07	1.05E-06	1.02E-06	6.3152E-04
556768.94	4204162.31	31610.79595	0.74503	0.46296	2.74589	2.82153	6.25E-04	2.79E-07	2.11E-07	1.48E-06	1.45E-06	6.2886E-04
556692.54	4204201.83	31363.94440	0.49636	0.31831	1.44068	1.47583	6.21E-04	1.86E-07	1.45E-07	7.77E-07	7.58E-07	6.2242E-04
556481.75	4204418.88	31237.53161	0.21746	0.15331	0.41347	0.42272	6.18E-04	8.16E-08	6.98E-08	2.23E-07	2.17E-07	6.1865E-04
556597.04	4204280.87	30958.20428	0.32712	0.21884	0.76590	0.78463	6.13E-04	1.23E-07	9.96E-08	4.13E-07	4.03E-07	6.1357E-04
556577.94	4204300.63	30929.62293	0.30384	0.20500	0.68436	0.70096	6.12E-04	1.14E-07	9.33E-08	3.69E-07	3.60E-07	6.1290E-04
556616.14	4204261.11	30887.07320	0.35304	0.23411	0.86054	0.88156	6.11E-04	1.32E-07	1.07E-07	4.64E-07	4.53E-07	6.1228E-04
556558.84	4204320.39	30856.49681	0.28301	0.19253	0.61437	0.62904	6.11E-04	1.06E-07	8.77E-08	3.31E-07	3.23E-07	6.1137E-04
556635.24	4204241.35	30803.64938	0.38265	0.25144	0.97182	0.99528	6.09E-04	1.44E-07	1.14E-07	5.24E-07	5.11E-07	6.1077E-04
556539.74	4204340.15	30770.19236	0.26438	0.18131	0.55427	0.56725	6.09E-04	9.92E-08	8.25E-08	2.99E-07	2.91E-07	6.0958E-04
556520.64	4204359.91	30681.40287	0.24768	0.17119	0.50250	0.51399	6.07E-04	9.29E-08	7.79E-08	2.71E-07	2.64E-07	6.0776E-04
556654.34	4204221.59	30550.04163	0.41579	0.27064	1.10101	1.12696	6.04E-04	1.56E-07	1.23E-07	5.94E-07	5.79E-07	6.0591E-04
556711.64	4204182.07	30542.49419	0.54461	0.34551	1.65805	1.69680	6.04E-04	2.04E-07	1.57E-07	8.94E-07	8.72E-07	6.0643E-04
556749.84	4204162.31	30460.52093	0.66612	0.41567	2.28269	2.33889	6.03E-04	2.50E-07	1.89E-07	1.23E-06	1.20E-06	6.0556E-04
556480.49	4204404.32	30377.21081	0.21698	0.15245	0.41361	0.42262	6.01E-04	8.14E-08	6.94E-08	2.23E-07	2.17E-07	6.0163E-04
556673.44	4204201.83	30074.71767	0.45287	0.29186	1.25118	1.27958	5.95E-04	1.70E-07	1.33E-07	6.75E-07	6.57E-07	5.9669E-04
557475.79	4203968.39	29894.32394	4.29313	7.30015	1.68098	1.60700	5.91E-04	1.61E-06	3.32E-06	9.06E-07	8.26E-07	5.9815E-04
556788.04	4204142.55	29772.28880	0.83496	0.51163	3.38631	3.47919	5.89E-04	3.13E-07	2.33E-07	1.83E-06	1.79E-06	5.9323E-04
556577.94	4204280.87	29639.84944	0.30379	0.20412	0.68639	0.70210	5.86E-04	1.14E-07	9.29E-08	3.70E-07	3.61E-07	5.8738E-04
556558.84	4204300.63	29630.95722	0.28307	0.19177	0.61692	0.63092	5.86E-04	1.06E-07	8.73E-08	3.33E-07	3.24E-07	5.8712E-04
556597.04	4204261.11	29588.61703	0.32689	0.21777	0.76686	0.78440	5.85E-04	1.23E-07	9.91E-08	4.13E-07	4.03E-07	5.8647E-04
556539.74	4204320.39	29584.41231	0.26446	0.18061	0.55693	0.56938	5.85E-04	9.92E-08	8.22E-08	3.00E-07	2.93E-07	5.8612E-04
556520.64	4204340.15	29541.17204	0.24781	0.17057	0.50517	0.51626	5.84E-04	9.30E-08	7.77E-08	2.72E-07	2.65E-07	5.8520E-04
557442.62	4203964.58	29527.32669	5.31429	7.36971	1.87797	1.78780	5.84E-04	1.99E-06	3.36E-06	1.01E-06	9.19E-07	5.9150E-04
556478.59	4204389.76	29509.49340	0.21597	0.15130	0.41229	0.42098	5.84E-04	8.10E-08	6.89E-08	2.22E-07	2.16E-07	5.8446E-04
556616.14	4204241.35	29466.69394	0.35280	0.23296	0.86018	0.87962	5.83E-04	1.32E-07	1.06E-07	4.64E-07	4.52E-07	5.8417E-04
557538.03	4203967.40	29445.59765	3.05233	6.45695	1.36465	1.31273	5.83E-04	1.14E-06	2.94E-06	7.36E-07	6.74E-07	5.8810E-04
556730.74	4204162.31	29423.72668	0.59956	0.37602	1.92514	1.96784	5.82E-04	2.25E-07	1.71E-07	1.04E-06	1.01E-06	5.8462E-04
557569.64	4203968.39	29401.54119	2.64711	6.27644	1.24649	1.20221	5.82E-04	9.93E-07	2.86E-06	6.72E-07	6.18E-07	5.8687E-04
556818.43	4204132.04	29401.25579	1.02036	0.61698	5.07407	5.24005	5.82E-04	3.83E-07	2.81E-07	2.74E-06	2.69E-06	5.8782E-04
556692.54	4204182.07	29378.79714	0.49475	0.31555	1.42815	1.45895	5.81E-04	1.86E-07	1.44E-07	7.70E-07	7.50E-07	5.8313E-04
557508.39	4203966.42	29373.79374	3.52215	6.52534	1.48918	1.42862	5.81E-04	1.32E-06	2.97E-06	8.03E-07	7.34E-07	5.8701E-04
557408.19	4203963.74	29367.93798	6.78232	7.12947	2.12449	2.01319	5.81E-04	2.54E-06	3.25E-06	1.15E-06	1.03E-06	5.8904E-04
556635.24	4204221.59	29266.64211	0.38206	0.24997	0.96870	0.99007	5.79E-04	1.43E-07	1.14E-07	5.22E-07	5.09E-07	5.8035E-04
557607.19	4203969.38	29117.64099	2.24857	5.79451	1.11879	1.08210	5.76E-04	8.43E-07	2.64E-06	6.03E-07	5.56E-07	5.8075E-04
556654.34	4204201.83	28890.55688	0.41477	0.26878	1.09417	1.11736	5.72E-04	1.56E-07	1.22E-07	5.90E-07	5.74E-07	5.7306E-04
556768.94	4204142.55	28808.58051	0.74025	0.45585	2.73982	2.80487	5.70E-04	2.78E-07	2.08E-07	1.48E-06	1.44E-06	5.7340E-04
557637.81	4203969.38	28784.71400	1.99303	5.36661	1.02930	0.99750	5.70E-04	7.48E-07	2.44E-06	5.55E-07	5.13E-07	5.7378E-04
556558.84	4204280.87	28444.42881	0.28285	0.19095	0.61816	0.63141	5.63E-04	1.06E-07	8.69E-08	3.33E-07	3.24E-07	5.6364E-04
556539.74	4204300.63	28443.78723	0.26431	0.17987	0.55857	0.57044	5.63E-04	9.91E-08	8.19E-08	3.01E-07	2.93E-07	5.6356E-04
556520.64	4204320.39	28435.81008	0.24771	0.16989	0.50697	0.51760	5.63E-04	9.29E-08	7.73E-08	2.73E-07	2.66E-07	5.6333E-04
556711.64	4204162.31	28415.65186	0.54208	0.34192	1.64044	1.67352	5.62E-04	2.03E-07	1.56E-07	8.85E-07	8.60E-07	5.6433E-04
556577.94	4204261.11	28394.46674	0.30345	0.20317	0.68683	0.70155	5.62E-04	1.14E-07	9.25E-08	3.70E-07	3.60E-07	5.6274E-04
556673.44	4204182.07	28281.72777	0.45121	0.28946	1.23950	1.26433	5.60E-04	1.69E-07	1.32E-07	6.68E-07	6.50E-07	5.6119E-04
556597.04	4204241.35	28278.76820	0.32642	0.21668	0.76598	0.78221	5.60E-04	1.22E-07	9.86E-08	4.13E-07	4.02E-07	5.6055E-04
556475.42	4204365.70	28132.47881	0.21404	0.14936	0.40921	0.41737	5.57E-04	8.03E-08	6.80E-08	2.21E-07	2.14E-07	5.5720E-04
556616.14	4204221.59	28085.82471	0.35218	0.23171	0.85732	0.87506	5.56E-04	1.32E-07	1.05E-07	4.62E-07	4.50E-07	5.5685E-04
556749.84	4204142.55	27954.14581	0.66183	0.40989	2.26507	2.31213	5.53E-04	2.48E-07	1.87E-07	1.22E-06	1.19E-06	5.5594E-04
556635.24	4204201.83	27773.28794	0.38104	0.24838	0.96262	0.98176	5.50E-04	1.43E-07	1.13E-07	5.19E-07	5.04E-07	5.5079E-04
557675.35	4203964.44	27752.89563	1.71472	4.50918	0.92082	0.89416	5.49E-04	6.43E-07	2.05E-06	4.97E-07	4.59E-07	5.5276E-04
556692.54	4204162.31	27468.09084	0.49241	0.31254	1.41134	1.43752	5.43E-04	1.85E-07	1.42E-07	7.61E-07	7.39E-07	5.4530E-04
557715.86	4203967.40	27399.17600	1.48999	4.10185	0.83413	0.81174	5.42E-04	5.59E-07	1.87E-06	4.50E-07	4.17E-07	5.4541E-04
556520.64	4204300.63	27372.98740	0.24742	0.16918	0.50793	0.51806	5.42E-04	9.28E-08	7.70E-08	2.74E-07	2.66E-07	5.4230E-04
556539.74	4204280.87	27347.94778	0.26398	0.17911	0.55919	0.57044	5.41E-04	9.90E-08	8.15E-08	3.02E-07	2.93E-07	5.4187E-04
556558.84	4204261.11	27296.00296	0.28240	0.19007	0.61808	0.63052	5.40E-04	1.06E-07	8.65E-08	3.33E-07	3.24E-07	5.4092E-04
556654.34	4204182.07	27263.52952	0.41312	0.26667	1.08357	1.10388	5.39E-04	1.55E-07	1.21E-07	5.84E-07	5.67E-07	5.4086E-04
556577.94	4204241.35	27187.43424	0.30286	0.20216	0.68561	0.69928	5.38E-04	1.14E-07	9.20E-08	3.70E-07	3.59E-07	5.3886E-04
556730.74	4204142.55	27162.35896	0.59564	0.37123	1.90283	1.93796	5.37E-04	2.23E-07	1.69E-07	1.03E-06	9.96E-07	5.3984E-04
556477.32	4204342.27	27143.36557	0.21530	0.14964	0.41427	0.42219	5.37E-04	8.08E-08	6.81E-08	2.23E-07	2.17E-07	5.3764E-04
557387.20	4203947.78	27018.34212	7.74611	5.46064	2.16146	2.04173	5.35E-04	2.91E-06	2.49E-06	1.17E-06	1.05E-06	5.4218E-04
557758.34	4203970.37	26999.84192	1.30509	3.67367	0.75799	0.73907	5.34E-04	4.90E-07	1.67E-06	4.09E-07	3.80E-07	5.3716E-04
556597.04	4204221.59	26996.67334	0.32561	0.21548	0.76294	0.77780	5.34E-04	1.22E-07	9.81E-08	4.11E-07	4.00E-07	5.3518E-04
556788.04	4204122.79	26865.19044	0.82661	0.50132	3.39621	3.47375	5.32E-04	3.10E-07	2.28E-07	1.83E-06	1.78E-06	5.3570E-04
556616.14	4204201.83	26728.91335	0.35115	0.23030	0.85183	0.86778	5.29E-04	1.32E-07	1.05E-07	4.59E-07	4.46E-07	5.2999E-04
556673.44	4204162.31	26554.12683	0.44901	0.28688	1.22404	1.24517	5.25E-04	1.68E-07	1.31E-07	6.60E-07	6.40E-07	5.2699E-04
556829.03	4204113.30	26537.38450	1.08524	0.64529	6.16585	6.36249	5.25E-04	4.07E-07	2.94E-07	3.32E-06	3.27E-06	5.3236E-04
556711.64	4204142.55	26380.35499	0.53861	0.33798	1.61766	1.64466	5.22E-04	2.02E-07	1.54E-07	8.72E-07	8.45E-07	5.2403E-04
556520.64	4204280.87	26348.26604	0.24696	0.16845	0.50802	0.51763	5.21E-04	9.26E-08	7.67E-08	2.74E-07	2.66E-07	5.2203E-04
556635.24	4204182.07	26305.84150	0.37953	0.24659	0.95338	0.97022	5.20E-04	1.42E-07	1.12E-07	5.14E-07	4.99E-07	5.2175E-04
556539.74	4204261.11	26289.21195	0.26346	0.17831	0.55876	0.56934	5.20E-04	9.88E-08	8.12E-08	3.01E-07	2.93E-07	5.2093E-04
556768.94	4204122.79	26205.12033	0.73342	0.44784	2.72518	2.77718	5.18E-04	2.75E-07	2.04E-07	1.47E-06	1.43E-06	5.2186E-04
556814.03	4204113.30	26203.33083	0.97609	0.58342	4.83855	4.96919	5.18E-04	3.66E-07	2.66E-07	2.61E-06	2.55E-06	5.2425E-04
556558.84	4204241.35	26183.35074	0.28174	0.18915	0.61667	0.62825	5.18E-04	1.06E-07	8.61E-08	3.33E-07	3.23E-07	5.1890E-04
556476.30	4204322.88	26157.57304	0.21425	0.14858	0.41294	0.42048	5.18E-04	8.04E-08	6.76E-08	2.23E-07	2.16E-07	5.1813E-04
556577.94	4204221.59	26012.57536	0.30201	0.20108	0.68273	0.69528	5.15E-04	1.13E-07	9.15E-08	3.68E-07	3.57E-07	5.1561E-04
556799.03	4204113.30	25836.72990	0.88210	0.53017	3.91028	3.99931	5.11E-04	3.31E-07	2.41E-07	2.11E-06	2.05E-06	5.1593E-04
556597.04	4204201.83	25758.49372	0.32458	0.21424	0.75801	0.77144	5.10E-04	1.22E-07	9.75E-08	4.09E-07	3.96E-07	5.1067E-04
556654.34	4204162.31	25695.13708	0.41107	0.26446	1.06979	1.08715	5.08E-04	1.54E-07	1.20E-07	5.77E-07	5.59E-07	5.0981E-04
556692.54	4204142.55	25629.61885	0.48934	0.30926	1.38993	1.41129	5.07E-04	1.84E-07	1.41E-07	7.49E-07	7.25E-07	5.0890E-04
556749.84	4204122.79	25609.52546	0.65613	0.40355	2.23991	2.27644	5.07E-04	2.46E-07	1.84E-07	1.21E-06	1.17E-06	5.0951E-04

556784.03	4204113.30	25463.61075	0.80112	0.48431	3.23328	3.29564	5.04E-04	3.01E-07	2.20E-07	1.74E-06	1.69E-06	5.0777E-04
556473.61	4204309.42	25405.08459	0.21212	0.14700	0.40810	0.41527	5.03E-04	7.96E-08	6.69E-08	2.20E-07	2.13E-07	5.0324E-04
556616.14	4204182.07	25401.85713	0.34977	0.22879	0.84386	0.85798	5.03E-04	1.31E-07	1.04E-07	4.55E-07	4.41E-07	5.0373E-04
556520.64	4204261.11	25363.12007	0.24638	0.16770	0.50730	0.51636	5.02E-04	9.24E-08	7.63E-08	2.74E-07	2.65E-07	5.0254E-04
556539.74	4204241.35	25256.95781	0.26275	0.17746	0.55721	0.56710	5.00E-04	9.86E-08	8.08E-08	3.00E-07	2.91E-07	5.0050E-04
556558.84	4204221.59	25092.82033	0.28084	0.18815	0.61385	0.62454	4.96E-04	1.05E-07	8.57E-08	3.31E-07	3.21E-07	4.9732E-04
556730.74	4204122.79	25042.46917	0.59080	0.36613	1.87444	1.90131	4.95E-04	2.22E-07	1.67E-07	1.01E-06	9.77E-07	4.9786E-04
556769.03	4204113.30	25040.78841	0.73002	0.44402	2.71704	2.76190	4.95E-04	2.74E-07	2.02E-07	1.47E-06	1.42E-06	4.9881E-04
556673.44	4204142.55	24885.04441	0.44624	0.28411	1.20467	1.22201	4.92E-04	1.67E-07	1.29E-07	6.50E-07	6.28E-07	4.9394E-04
556635.24	4204162.31	24877.54029	0.37763	0.24468	0.94132	0.95582	4.92E-04	1.42E-07	1.11E-07	5.08E-07	4.91E-07	4.9347E-04
556577.94	4204201.83	24865.38013	0.30094	0.19994	0.67817	0.68959	4.92E-04	1.13E-07	9.10E-08	3.66E-07	3.54E-07	4.9290E-04
556473.07	4204294.35	24718.07122	0.21139	0.14632	0.40692	0.41382	4.89E-04	7.93E-08	6.66E-08	2.19E-07	2.13E-07	4.8964E-04
556597.04	4204182.07	24546.96935	0.32328	0.21291	0.75106	0.76304	4.86E-04	1.21E-07	9.69E-08	4.05E-07	3.92E-07	4.8669E-04
556711.64	4204122.79	24460.71154	0.53449	0.33383	1.58983	1.61046	4.84E-04	2.00E-07	1.52E-07	8.57E-07	8.27E-07	4.8601E-04
556520.64	4204241.35	24400.71453	0.24564	0.16691	0.50566	0.51416	4.83E-04	9.21E-08	7.60E-08	2.73E-07	2.64E-07	4.8349E-04
556539.74	4204221.59	24243.12283	0.26183	0.17653	0.55451	0.56368	4.80E-04	9.82E-08	8.04E-08	2.99E-07	2.90E-07	4.8044E-04
556829.03	4204098.30	24236.49265	1.06964	0.62875	6.30658	6.47927	4.80E-04	4.01E-07	2.86E-07	3.40E-06	3.33E-06	4.8695E-04
556654.34	4204142.55	24174.47535	0.40857	0.26209	1.05273	1.06714	4.78E-04	1.53E-07	1.19E-07	5.68E-07	5.48E-07	4.7970E-04
556472.53	4204281.98	24162.73268	0.21068	0.14572	0.40554	0.41221	4.78E-04	7.90E-08	6.63E-08	2.19E-07	2.12E-07	4.7865E-04
556616.14	4204162.31	24102.41048	0.34805	0.22715	0.83349	0.84579	4.77E-04	1.31E-07	1.03E-07	4.49E-07	4.35E-07	4.7800E-04
556814.03	4204098.30	24049.80428	0.96375	0.57045	4.89211	4.99995	4.76E-04	3.62E-07	2.60E-07	2.64E-06	2.57E-06	4.8167E-04
556558.84	4204201.83	24028.61738	0.27976	0.18710	0.60970	0.61948	4.75E-04	1.05E-07	8.52E-08	3.29E-07	3.18E-07	4.7626E-04
556692.54	4204122.79	23875.59363	0.48566	0.30577	1.36398	1.38045	4.72E-04	1.82E-07	1.39E-07	7.35E-07	7.09E-07	4.7416E-04
556799.03	4204098.30	23820.48447	0.87198	0.51978	3.91786	3.98717	4.71E-04	3.27E-07	2.37E-07	2.11E-06	2.05E-06	4.7603E-04
556577.94	4204182.07	23750.45314	0.29970	0.19876	0.67209	0.68236	4.70E-04	1.12E-07	9.05E-08	3.62E-07	3.51E-07	4.7084E-04
556784.03	4204098.30	23578.92860	0.79269	0.47588	3.21780	3.26401	4.67E-04	2.97E-07	2.17E-07	1.74E-06	1.68E-06	4.7045E-04
556635.24	4204142.55	23488.51395	0.37538	0.24264	0.92658	0.93878	4.65E-04	1.41E-07	1.10E-07	5.00E-07	4.82E-07	4.6597E-04
556520.64	4204221.59	23468.48923	0.24479	0.16610	0.50320	0.51114	4.64E-04	9.18E-08	7.56E-08	2.71E-07	2.63E-07	4.6504E-04
556471.99	4204264.22	23408.92463	0.20981	0.14499	0.40371	0.41006	4.63E-04	7.87E-08	6.60E-08	2.18E-07	2.11E-07	4.6374E-04
556597.04	4204162.31	23358.98378	0.32173	0.21149	0.74219	0.75273	4.62E-04	1.21E-07	9.63E-08	4.00E-07	3.87E-07	4.6318E-04
556673.44	4204122.79	23294.61766	0.44312	0.28124	1.18190	1.19550	4.61E-04	1.66E-07	1.28E-07	6.37E-07	6.14E-07	4.6245E-04
556769.03	4204098.30	23293.38548	0.72310	0.43722	2.69156	2.72363	4.61E-04	2.71E-07	1.99E-07	1.45E-06	1.40E-06	4.6420E-04
556539.74	4204201.83	23263.44053	0.26083	0.17560	0.55084	0.55929	4.60E-04	9.78E-08	7.99E-08	2.97E-07	2.87E-07	4.6105E-04
557388.04	4203913.35	23014.40891	6.94987	3.51363	1.88465	1.77993	4.55E-04	2.61E-06	1.60E-06	1.02E-06	9.15E-07	4.6149E-04
556558.84	4204182.07	23005.09677	0.27863	0.18606	0.60445	0.61333	4.55E-04	1.05E-07	8.47E-08	3.26E-07	3.15E-07	4.5600E-04
556616.14	4204142.55	22820.14560	0.34595	0.22533	0.82072	0.83122	4.52E-04	1.30E-07	1.03E-07	4.43E-07	4.27E-07	4.5262E-04
556468.76	4204250.76	22715.68152	0.20712	0.14317	0.39687	0.40285	4.49E-04	7.77E-08	6.52E-08	2.14E-07	2.07E-07	4.5001E-04
556654.34	4204122.79	22709.41200	0.40571	0.25959	1.03270	1.04423	4.49E-04	1.52E-07	1.18E-07	5.57E-07	5.37E-07	4.5069E-04
556577.94	4204162.31	22655.90806	0.29826	0.19749	0.66446	0.67360	4.48E-04	1.12E-07	8.99E-08	3.58E-07	3.46E-07	4.4917E-04
556520.64	4204201.83	22558.30240	0.24384	0.16526	0.49991	0.50728	4.46E-04	9.15E-08	7.52E-08	2.70E-07	2.61E-07	4.4703E-04
556539.74	4204182.07	22304.85796	0.25970	0.17463	0.54615	0.55390	4.41E-04	9.74E-08	7.95E-08	2.94E-07	2.85E-07	4.4207E-04
556473.07	4204235.16	22262.81148	0.20946	0.14448	0.40325	0.40916	4.40E-04	7.86E-08	6.58E-08	2.17E-07	2.10E-07	4.4106E-04
556829.03	4204083.30	22212.15616	1.05283	0.61196	6.43665	6.57175	4.39E-04	3.95E-07	2.79E-07	3.47E-06	3.38E-06	4.4700E-04
556597.04	4204142.55	22185.35458	0.31987	0.20993	0.73139	0.74053	4.39E-04	1.20E-07	9.56E-08	3.94E-07	3.80E-07	4.3994E-04
556635.24	4204122.79	22146.81562	0.37287	0.24052	0.90948	0.91947	4.38E-04	1.40E-07	1.10E-07	4.90E-07	4.72E-07	4.3940E-04
556814.03	4204083.30	22118.20603	0.94995	0.55698	4.92550	5.00149	4.38E-04	3.56E-07	2.54E-07	2.66E-06	2.57E-06	4.4346E-04
556558.84	4204162.31	21992.68507	0.27729	0.18494	0.59789	0.60589	4.35E-04	1.04E-07	8.42E-08	3.22E-07	3.11E-07	4.3596E-04
556799.03	4204083.30	21992.25665	0.86065	0.50895	3.90717	3.95135	4.35E-04	3.23E-07	2.32E-07	2.11E-06	2.03E-06	4.3982E-04
556784.03	4204083.30	21849.96471	0.78321	0.46705	3.18707	3.21415	4.32E-04	2.94E-07	2.13E-07	1.72E-06	1.65E-06	4.3619E-04
556520.64	4204182.07	21668.06653	0.24279	0.16439	0.49584	0.50265	4.29E-04	9.11E-08	7.48E-08	2.67E-07	2.58E-07	4.2941E-04
556769.03	4204083.30	21664.13937	0.71506	0.42994	2.65318	2.67095	4.29E-04	2.68E-07	1.96E-07	1.43E-06	1.37E-06	4.3191E-04
556616.14	4204122.79	21594.92315	0.34379	0.22354	0.80635	0.81513	4.27E-04	1.29E-07	1.02E-07	4.35E-07	4.19E-07	4.2836E-04
556577.94	4204142.55	21576.82032	0.29661	0.19614	0.65534	0.66339	4.27E-04	1.11E-07	8.93E-08	3.53E-07	3.41E-07	4.2781E-04
556469.84	4204218.47	21485.70657	0.20660	0.14257	0.39560	0.40112	4.25E-04	7.75E-08	6.49E-08	2.13E-07	2.06E-07	4.2567E-04
556539.74	4204162.31	21365.55180	0.25847	0.17362	0.54052	0.54757	4.23E-04	9.70E-08	7.90E-08	2.91E-07	2.81E-07	4.2348E-04
556751.70	4204081.99	21309.94412	0.64632	0.39209	2.19026	2.20153	4.22E-04	2.42E-07	1.79E-07	1.18E-06	1.13E-06	4.2437E-04
556597.04	4204122.79	21065.34204	0.31802	0.20843	0.71939	0.72721	4.17E-04	1.19E-07	9.49E-08	3.88E-07	3.74E-07	4.1777E-04
556558.84	4204142.55	20995.48563	0.27580	0.18374	0.59017	0.59731	4.15E-04	1.03E-07	8.37E-08	3.18E-07	3.07E-07	4.1622E-04
556520.64	4204162.31	20781.43688	0.24159	0.16343	0.49088	0.49715	4.11E-04	9.06E-08	7.44E-08	2.65E-07	2.55E-07	4.1186E-04
557402.31	4203885.64	20578.15187	5.60757	2.65329	1.62268	1.53475	4.07E-04	2.10E-06	1.21E-06	8.75E-07	7.89E-07	4.1213E-04
556577.94	4204122.79	20536.71086	0.29492	0.19479	0.64516	0.65217	4.06E-04	1.11E-07	8.87E-08	3.48E-07	3.35E-07	4.0722E-04
556539.74	4204142.55	20444.48527	0.25714	0.17257	0.53401	0.54039	4.05E-04	9.65E-08	7.86E-08	2.88E-07	2.78E-07	4.0525E-04
556829.03	4204068.30	20420.51029	1.03455	0.59482	6.52919	6.60632	4.04E-04	3.88E-07	2.71E-07	3.52E-06	3.39E-06	4.1161E-04
556814.03	4204068.30	20389.40859	0.93486	0.54313	4.92445	4.95705	4.03E-04	3.51E-07	2.47E-07	2.66E-06	2.55E-06	4.0922E-04
556799.03	4204068.30	20341.93896	0.84832	0.49781	3.87048	3.88368	4.02E-04	3.18E-07	2.27E-07	2.09E-06	2.00E-06	4.0711E-04
556784.03	4204068.30	20275.67762	0.77291	0.45793	3.13740	3.14266	4.01E-04	2.90E-07	2.08E-07	1.69E-06	1.61E-06	4.0497E-04
556769.03	4204068.30	20164.48943	0.70628	0.42237	2.60107	2.60347	3.99E-04	2.65E-07	1.92E-07	1.40E-06	1.34E-06	4.0217E-04
556742.01	4204070.15	20128.02568	0.60776	0.36945	1.95194	1.95490	3.98E-04	2.28E-07	1.68E-07	1.05E-06	1.00E-06	4.0070E-04
556468.22	4204182.95	20077.52972	0.20396	0.14066	0.38786	0.39280	3.97E-04	7.65E-08	6.40E-08	2.09E-07	2.02E-07	3.9780E-04
556558.84	4204122.79	20029.04045	0.27426	0.18254	0.58156	0.58789	3.96E-04	1.03E-07	8.31E-08	3.14E-07	3.02E-07	3.9709E-04
556520.64	4204142.55	19920.60134	0.24035	0.16247	0.48531	0.49104	3.94E-04	9.02E-08	7.40E-08	2.62E-07	2.52E-07	3.9482E-04
556713.49	4204069.61	19827.75722	0.52398	0.32351	1.50487	1.50824	3.92E-04	1.97E-07	1.47E-07	8.11E-07	7.75E-07	3.9424E-04
557379.64	4203879.76	19752.01671	6.21866	2.39393	1.66933	1.57364	3.91E-04	2.33E-06	1.09E-06	9.00E-07	8.09E-07	3.9594E-04
556539.74	4204122.79	19543.65192	0.25574	0.17149	0.52672	0.53245	3.87E-04	9.59E-08	7.81E-08	2.84E-07	2.74E-07	3.8742E-04
556639.22	4204080.37	19515.80787	0.37311	0.23935	0.88841	0.89413	3.86E-04	1.40E-07	1.09E-07	4.79E-07	4.59E-07	3.8732E-04
556668.82	4204072.84	19502.89554	0.42390	0.26792	1.07230	1.07719	3.86E-04	1.59E-07	1.22E-07	5.78E-07	5.53E-07	3.8729E-04
556653.75	4204075.53	19453.01266	0.39668	0.25262	0.97069	0.97597	3.85E-04	1.49E-07	1.15E-07	5.23E-07	5.01E-07	3.8618E-04
556623.07	4204080.91	19258.50760	0.34850	0.22523	0.80361	0.80919	3.81E-04	1.31E-07	1.03E-07	4.33E-07	4.16E-07	3.8213E-04
556467.54	4204158.41	19129.67270	0.20222	0.13939	0.38243	0.38699	3.78E-04	7.59E-08	6.35E-08	2.06E-07	1.99E-07	3.7904E-04
556520.64	4204122.79	19084.67590	0.23912	0.16152	0.47919	0.48441	3.78E-04	8.97E-08	7.35E-08	2.58E-07	2.49E-07	3.7827E-04
556608.54	4204079.30	18903.34258	0.32807	0.21339	0.73532	0.74062	3.74E-04	1.23E-07	9.72E-08	3.96E-07	3.81E-07	3.7501E-04
556799.03	4204053.30	18853.30257	0.83503	0.48638	3.79812	3.77527	3.73E-04	3.13E-07	2.21E-07	2.05E-06	1.94E-06	3.7755E-04
556814.03	4204053.30	18849.11859	0.91881	0.52910	4.87216	4.84850	3.73E-04	3.45E-07	2.41E-07	2.63E-06	2.49E-06	3.7865E-04
556829.03	4204053.30	18835.42004	1.01508	0.57750	6.54981	6.53997	3.73E-04	3.81E-07	2.63E-07	3.53E-06	3.36E-06	3.8021E-04
556784.03	4204053.30	18833.88314	0.76153	0.44840	3.06253	3.04433	3.73E-04	2.86E-07	2.04E-07	1.65E-06	1.56E-06	3.7635E-04
556769.03	4204053.30	18783.00958	0.69667	0.41447	2.53270	2.51942	3.72E-04	2.61E-07	1.89E-07	1.37E-06	1.29E-06	3.7475E-04
556593.47	4204081.45	18737.80264	0.30911	0.20242	0.67603	0.68126	3.71E-04	1.16E-07	9.22E-08	3.65E-07	3.50E-07	3.7166E-04
557351.09	4203870.53	18656.43582	6.99404	2.05887	1.70725	1.60124	3.69E-04	2.62E-06	9.37E-07	9.21E-07	8.23E-07	3.7444E-04
556578.40	4204083.06	18536.49670	0.29170	0.19228	0.62313	0.62823	3.67E-04	1.09E-07	8.75E-08	3.36E-07	3.23E-07	3.6761E-04
556464.31	4204140.65	18369.09457	0.19905	0.13729	0.37350	0.37774	3.63E-04	7.47E-08	6.25E-08	2.01E-07	1.94E-07	3.6398E-04
556563.34	4204084.14	18300.76022	0.27567	0.18286	0.57576	0.58067	3.62E-04	1.03E-07	8.33E-08	3.10E-07	2.98E-07	3.6289E-04
557322.54	4203866.33	18268.52549	8.07618	1.84984	1.80104	1.67569	3.61E-04	3.03E-06	8.42E-07	9.71E-07	8.61E-07	3.6716E-04
556546.65	4204085.75	18053.55847	0.25941	0.17326	0.52933	0.53403	3.57E-04	9.73E-08	7.89E-08	2.85E-07	2.74E-07	3.5794E-04
556531.58	4204084.14	17706.47448	0.24578	0.16514	0.49074	0.49517	3.50E-04	9.22E-08	7.52E-08	2.65E-07	2.54E-07	3.5102E-04
556460.15	4204123.22	17635.21076	0.19541	0.13492	0.36327	0.36719	3.49E-04	7.33E-08	6.14E-08	1.96E-07	1.89E-07	3.4944E-04
557295.66	4203866.33	17632.83678	9.52587	1.73537	1.88275	1.74098	3.49E-04	3.57E-06	7.90E-07	1.02E-06	8.95E-07	3.5515E-04
556515.44	4204084.14	17412.41753	0.23245	0.15717	0.45446	0.45864	3.45E-04	8.72E-08	7.16E-08	2.45E-07	2.36E-07	3.4516E-04
556499.29	4204081.45	17003.15275	0.21988	0.14958	0.42094	0.42484	3.36E-04	8.25E-08	6.81E-08	2.27E-07	2.18E-07	3.3702E-04
556455.70	4204105.67	16934.65183	0.19175	0.13255	0.35288	0.35651	3.35E-04	7.19E-08	6.03E-08	1.90E-07	1.83E-07	3.3557E-04
556486.92	4204084.14	16866.54521	0.21118	0.14433	0.39898	0.40276	3.34E-04	7.92E-08	6.57E-08	2.15E-07	2.07E-07	3.3428E-04
557266.27	4203863.81	16682.05380	10.97561	1.57080	1.92936	1.77021	3.30E-04	4.12E-06	7.15E-07	1.04E-06	9.10E-07	3.3685E-04
556462.70	4204085.22	16424.56203	0.19520	0.13457	0.35932	0.36279	3.25E-04	7.32E-08	6.13E-08	1.94E-07	1.86E-07	3.2549E-04
556813.94	4204016.49	15723.67919	0.87516	0.49382	4.40090	4.21878	3.11E-04	3.28E-07	2.25E-07	2.37E-06	2.17E-06	3.1620E-04
557241.08	4203857.09	15614.85105	10.79427	1.38262	1.89423	1.72530	3.09E-04	4.05E-06	6.29E-07	1.02E-06	8.86E-07	3.1554E-04
557211.69	4203852.05	14835.24030	10.35698	1.22882	1.89738	1.71213	2.94E-04	3.89E-06	5.59E-07	1.02E-06	8.80E-07	2.9987E-04
557178.10	4203844.49	13869.44444	9.27762	1.05544	1.90644	1.70906	2.74E-04	3.48E-06	4.81E-07	1.03E-06	8.78E-07	2.8028E-04
556810.30	4203987.98	13833.21478	0.82096	0.45851	3.51736	3.29919	2.74E-04	3.08E-07	2.09E-07	1.90E-06	1.70E-06	2.7781E-04
557150.39	4203840.30	12898.89831	7.60872	0.94329	1.93235	1.72705	2.55E-04	2.85E-06	4.29E-07	1.04E-06	8.87E-07	2.6043E-04
556805.45	4203964.92	12558.17923	0.76958	0.42791	2.78841	2.59980	2.48E-04	2.89E-07	1.95E-07	1.50E-06	1.34E-06	2.5180E-04
557124.36	4203835.26	12017.05263	5.89559	0.85069	1.85520	1.65104	2.38E-04	2.21E-06	3.87E-07	1.00E-06	8.48E-07	2.4221E-04
556801.81	4203941.87	11458.88701	0.72616	0.40194	2.25087	2.09433	2.27E-04	2.72E-07	1.83E-07	1.21E-06	1.08E-06	2.2947E-04
557099.16	4203832.74	11322.54366	4.63964	0.78132	1.80727	1.60216	2.24E-04	1.74E-06	3.56E-07	9.74E-07	8.23E-07	2.2792E-04
557071.45	4203831.06	10646.11723	3.56534	0.71595	1.74668	1.54357	2.11E-04	1.34E-06	3.26E-07	9.42E-07	7.93E-07	2.1404E-04
556801.81	4203913.96	10302.68103	0.69211	0.37932	1.81797	1.68732	2.04E-04	2.60E-07	1.73E-07	9.80E-07	8.67E-07	2.0613E-04
557049.62	4203826.86	10046.30011	2.80784	0.65815	1.64306	1.45405	1.99E-04	1.05E-06	3.00E-07	8.86E-07	7.47E-07	2.0176E-04
556795.74	4203885.45	9333.45448	0.63795	0.34950	1.41237	1.31789	1.85E-04	2.39E-07	1.59E-07	7.62E-07	6.77E-07	1.8651E-04
557021.91	4203819.30	9292.15022	2.09576	0.58684	1.48231	1.31717	1.84E-04	7.86E-07	2.67E-07	7.99E-07	6.77E-07	1.8638E-04
556993.36	4203819.30	8815.52654	1.69657	0.54112	1.43412	1.27426	1.74E-04	6.36E-07	2.46E-07	7.73E-07	6.55E-07	1.7673E-04

556790.89	4203861.18	8617.26387	0.59612	0.32680	1.16356	1.09024	1.70E-04	2.24E-07	1.49E-07	6.27E-07	5.60E-07	1.7206E-04
556964.80	4203810.90	8198.06104	1.33181	0.48237	1.27113	1.13777	1.62E-04	5.00E-07	2.20E-07	6.85E-07	5.85E-07	1.6419E-04
556786.03	4203832.06	7867.20503	0.55196	0.30295	0.94423	0.88837	1.56E-04	2.07E-07	1.38E-07	5.09E-07	4.56E-07	1.5697E-04
556943.81	4203805.87	7835.51032	1.14283	0.44658	1.17065	1.05366	1.55E-04	4.29E-07	2.03E-07	6.31E-07	5.41E-07	1.5684E-04
556911.90	4203798.31	7385.34619	0.92742	0.39901	1.03496	0.94074	1.46E-04	3.48E-07	1.82E-07	5.58E-07	4.83E-07	1.4770E-04
556879.99	4203789.07	7001.64491	0.76369	0.35569	0.90533	0.83213	1.39E-04	2.86E-07	1.62E-07	4.88E-07	4.28E-07	1.3990E-04
556853.12	4203780.67	6756.62721	0.65873	0.32417	0.80951	0.75082	1.34E-04	2.47E-07	1.48E-07	4.36E-07	3.86E-07	1.3490E-04
CONCUNIT ug/	m^3											0.0000E+00
DEPUNIT g/m^	2											0.0000E+00

Richmond Country Club Residential Project

Construction Annual Total PM2.5 Emissions (PM2.5 Total) **Unmitigated Concentrations** **Maximum PM2.5 Total (ug/m3)** **MIR UTM** X Y

Annual Average Onsite Total PM2.5 Emission Rate (grams/m2/sec):	2.39E-08	6.6816E-03	556742.99	4205200.38
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 1 (grams/sec):	6.13E-06			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 2 (grams/sec):	7.44E-06			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 3 (grams/sec):	8.81E-06			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 4 (grams/sec):	8.39E-06			

X	Y	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Onsite Annual PM2.5 Total w/Actual Emissions (ug/m3)	Offsite-Road Segment 1 Annual PM2.5 Total w/Actual Emissions (ug/m3)	Offsite-Road Segment 2 Annual PM2.5 Total w/Actual Emissions (ug/m3)	Offsite-Road Segment 3 Annual PM2.5 Total w/Actual Emissions (ug/m3)	Offsite-Road Segment 4 Annual PM2.5 Total w/Actual Emissions (ug/m3)	**Total DPM (ug/m3)**
556742.99	4205200.38	279326.26727	0.11546	0.10972	0.14306	0.14578	6.68E-03	7.07E-07	8.16E-07	1.26E-06	1.22E-06	6.6816E-03
556750.13	4205224.65	272467.05345	0.11105	0.10619	0.13579	0.13825	6.51E-03	6.80E-07	7.90E-07	1.20E-06	1.16E-06	6.5175E-03
556734.43	4205177.53	271709.43970	0.11964	0.11296	0.15063	0.15360	6.50E-03	7.33E-07	8.40E-07	1.33E-06	1.29E-06	6.4997E-03
556795.98	4204741.69	254901.73087	0.30115	0.25748	0.55049	0.57315	6.09E-03	1.84E-06	1.91E-06	4.85E-06	4.81E-06	6.1071E-03
556760.13	4205256.06	253679.53737	0.10585	0.10193	0.12803	0.13022	6.06E-03	6.48E-07	7.58E-07	1.13E-06	1.09E-06	6.0681E-03
556789.85	4204755.72	248942.29915	0.28858	0.24757	0.51684	0.53741	5.95E-03	1.77E-06	1.84E-06	4.55E-06	4.51E-06	5.9639E-03
556804.75	4204686.47	239294.60481	0.35193	0.29531	0.70528	0.73856	5.72E-03	2.16E-06	2.20E-06	6.21E-06	6.20E-06	5.7374E-03
556815.27	4204636.52	234575.04099	0.41169	0.33946	0.92377	0.97456	5.61E-03	2.52E-06	2.52E-06	8.13E-06	8.18E-06	5.6291E-03
556795.11	4204717.15	234367.02976	0.31986	0.27083	0.60692	0.63329	5.60E-03	1.96E-06	2.01E-06	5.34E-06	5.31E-06	5.6174E-03
556810.01	4204656.67	233617.78105	0.38517	0.31978	0.82182	0.86409	5.58E-03	2.36E-06	2.38E-06	7.24E-06	7.25E-06	5.6041E-03
556797.74	4204703.13	231901.33795	0.33298	0.28062	0.64685	0.67595	5.54E-03	2.04E-06	2.09E-06	5.70E-06	5.67E-06	5.5594E-03
556822.28	4204603.21	231413.03735	0.46015	0.37470	1.14228	1.21342	5.53E-03	2.82E-06	2.79E-06	1.01E-05	1.02E-05	5.5580E-03
556825.78	4204588.31	231175.70230	0.48504	0.39276	1.27215	1.35670	5.53E-03	2.97E-06	2.92E-06	1.12E-05	1.14E-05	5.5550E-03
556817.02	4204618.11	227089.55338	0.43553	0.35639	1.02898	1.08920	5.43E-03	2.67E-06	2.65E-06	9.06E-06	9.14E-06	5.4523E-03
556828.41	4204570.78	226606.47523	0.51503	0.41401	1.45389	1.55879	5.42E-03	3.16E-06	3.08E-06	1.28E-05	1.31E-05	5.4494E-03
556831.04	4204555.88	224003.57182	0.54329	0.43407	1.65038	1.77939	5.36E-03	3.33E-06	3.23E-06	1.45E-05	1.49E-05	5.3911E-03
556720.15	4205193.24	222184.72390	0.11588	0.10938	0.14530	0.14812	5.31E-03	7.10E-07	8.13E-07	1.28E-06	1.24E-06	5.3156E-03
556728.71	4205220.36	221552.82190	0.11115	0.10570	0.13655	0.13904	5.30E-03	6.81E-07	7.86E-07	1.20E-06	1.17E-06	5.3003E-03
556738.71	4205243.21	220699.10955	0.10738	0.10275	0.13037	0.13267	5.28E-03	6.58E-07	7.64E-07	1.15E-06	1.11E-06	5.2797E-03
556832.80	4204536.60	215997.58007	0.58047	0.45977	1.96983	2.14237	5.16E-03	3.56E-06	3.42E-06	1.73E-05	1.80E-05	5.2060E-03
556835.43	4204523.45	213882.06160	0.61021	0.48069	2.27606	2.49568	5.11E-03	3.74E-06	3.57E-06	2.00E-05	2.09E-05	5.1614E-03
556838.93	4204502.41	208674.42756	0.66107	0.51604	2.98024	3.32752	4.99E-03	4.05E-06	3.84E-06	2.62E-05	2.79E-05	5.0506E-03
556841.56	4204486.64	204583.30957	0.70304	0.54504	3.83726	4.37596	4.89E-03	4.31E-06	4.05E-06	3.38E-05	3.67E-05	4.9697E-03
556846.82	4204465.60	202817.79792	0.76974	0.59170	6.21487	7.42750	4.85E-03	4.72E-06	4.40E-06	5.47E-05	6.23E-05	4.9748E-03
557221.73	4204254.39	201727.11691	7.13531	6.57379	6.54257	6.53226	4.82E-03	4.37E-05	4.89E-05	5.76E-05	5.48E-05	5.0275E-03
557208.53	4204244.85	200550.87778	8.45881	7.67197	7.60241	7.55852	4.79E-03	5.18E-05	5.70E-05	6.69E-05	6.34E-05	5.0336E-03
557193.13	4204234.59	199811.85706	10.56584	9.43972	9.29259	9.18463	4.78E-03	6.47E-05	7.02E-05	8.18E-05	7.71E-05	5.0706E-03
557237.13	4204261.72	197965.51798	6.16509	5.79897	5.71235	5.71680	4.73E-03	3.78E-05	4.31E-05	5.03E-05	4.80E-05	4.9118E-03
556847.70	4204454.21	196809.73499	0.80307	0.61395	8.38486	10.17559	4.70E-03	4.92E-06	4.57E-06	7.38E-05	8.54E-05	4.8737E-03
556764.43	4204760.98	196784.98628	0.27515	0.23469	0.48822	0.50709	4.70E-03	1.69E-06	1.75E-06	4.30E-06	4.26E-06	4.7164E-03
557252.53	4204267.59	192587.40898	5.46100	5.25000	5.09117	5.09828	4.60E-03	3.35E-05	3.90E-05	4.48E-05	4.28E-05	4.7641E-03
557181.39	4204223.59	192424.44390	13.05358	11.62781	11.23244	11.02877	4.60E-03	8.00E-05	8.65E-05	9.89E-05	9.25E-05	4.9580E-03
557270.86	4204273.46	185490.84617	4.84402	4.77097	4.52153	4.52683	4.43E-03	2.97E-05	3.55E-05	3.98E-05	3.80E-05	4.5773E-03
556847.08	4204435.35	182237.70377	0.85342	0.64588	12.32453	14.16987	4.36E-03	5.23E-06	4.80E-06	1.09E-04	1.19E-04	4.5941E-03
556851.51	4204417.62	179293.69595	0.92435	0.69446	17.65347	19.17750	4.29E-03	5.66E-06	5.16E-06	1.55E-04	1.61E-04	4.6134E-03
557288.08	4204277.27	177144.15050	4.37965	4.43567	4.08181	4.08814	4.23E-03	2.68E-05	3.30E-05	3.59E-05	3.43E-05	4.3649E-03
557171.13	4204208.19	174386.60772	16.73212	15.07976	14.01510	13.56191	4.17E-03	1.03E-04	1.12E-04	1.23E-04	1.14E-04	4.6208E-03
556750.41	4204751.33	171993.96259	0.27577	0.23344	0.49428	0.51354	4.11E-03	1.69E-06	1.74E-06	4.35E-06	4.31E-06	4.1238E-03
557300.26	4204282.34	171978.60006	3.96043	4.12513	3.72345	3.73894	4.11E-03	2.43E-05	3.07E-05	3.28E-05	3.14E-05	4.2304E-03
556727.29	4205280.33	168101.71136	0.10102	0.09696	0.12131	0.12336	4.02E-03	6.19E-07	7.21E-07	1.07E-06	1.04E-06	4.0221E-03
556758.95	4204706.70	166090.09969	0.31003	0.25857	0.59295	0.61842	3.97E-03	1.90E-06	1.92E-06	5.22E-06	5.19E-06	3.9848E-03
556855.95	4204385.33	164776.24082	1.05092	0.77753	19.86724	21.04695	3.94E-03	6.44E-06	5.78E-06	1.75E-04	1.77E-04	4.3030E-03
556753.05	4204721.31	164075.72307	0.29667	0.24843	0.55425	0.57721	3.92E-03	1.82E-06	1.85E-06	4.88E-06	4.84E-06	3.9358E-03
556759.79	4204692.65	162105.32282	0.32111	0.26636	0.62831	0.65614	3.88E-03	1.97E-06	1.98E-06	5.53E-06	5.51E-06	3.8903E-03
557316.50	4204284.37	161417.58613	3.52982	3.86709	3.36149	3.37762	3.86E-03	2.16E-05	2.88E-05	2.96E-05	2.83E-05	3.9672E-03
556861.01	4204366.33	159963.10955	1.14922	0.84354	22.11105	23.42206	3.82E-03	7.04E-06	6.27E-06	1.95E-04	1.97E-04	4.2287E-03
556761.19	4204678.03	158626.17938	0.33349	0.27507	0.66943	0.70011	3.79E-03	2.04E-06	2.05E-06	5.90E-06	5.87E-06	3.8080E-03
556731.57	4205298.89	158117.02524	0.09838	0.09471	0.11761	0.11956	3.78E-03	6.03E-07	7.04E-07	1.04E-06	1.00E-06	3.7833E-03
556768.86	4204647.06	156910.40089	0.36531	0.29804	0.78117	0.82006	3.75E-03	2.24E-06	2.22E-06	6.88E-06	6.88E-06	3.7693E-03
557331.73	4204291.48	156471.34197	3.15071	3.57134	3.04186	3.05969	3.74E-03	1.93E-05	2.66E-05	2.68E-05	2.57E-05	3.8389E-03
557223.12	4204216.36	155286.81212	9.50330	9.00878	7.80589	7.66815	3.71E-03	5.82E-05	6.70E-05	6.87E-05	6.43E-05	3.9706E-03
557256.62	4204231.59	153988.10573	6.76385	6.77517	5.75939	5.70505	3.68E-03	4.14E-05	5.04E-05	5.07E-05	4.79E-05	3.8717E-03
556864.18	4204351.14	153665.47905	1.22744	0.89467	22.89097	24.28252	3.67E-03	7.52E-06	6.65E-06	2.02E-04	2.04E-04	4.0931E-03
557271.84	4204238.70	153228.09698	5.95637	6.10665	5.12872	5.09339	3.66E-03	3.65E-05	4.54E-05	4.52E-05	4.27E-05	3.8329E-03
556769.76	4204632.60	152994.29613	0.37959	0.30780	0.83804	0.88134	3.66E-03	2.33E-06	2.29E-06	7.38E-06	7.40E-06	3.6769E-03
556774.54	4204616.02	152861.91949	0.40009	0.32249	0.92194	0.97211	3.65E-03	2.45E-06	2.40E-06	8.12E-06	8.16E-06	3.6755E-03
556778.19	4204603.09	152616.13997	0.41713	0.33461	0.99728	1.05391	3.65E-03	2.56E-06	2.49E-06	8.78E-06	8.84E-06	3.6711E-03
557289.10	4204245.80	151294.42753	5.28152	5.53678	4.56520	4.54272	3.62E-03	3.24E-05	4.12E-05	4.02E-05	3.81E-05	3.7687E-03
556732.00	4204752.21	151265.17248	0.26786	0.22567	0.47803	0.49633	3.62E-03	1.64E-06	1.68E-06	4.21E-06	4.16E-06	3.6279E-03
557241.39	4204220.42	150444.94757	8.03463	7.88575	6.66076	6.56291	3.60E-03	4.92E-05	5.86E-05	5.87E-05	5.51E-05	3.8181E-03
556784.99	4204571.52	149513.29176	0.46098	0.36512	1.22173	1.29911	3.57E-03	2.82E-06	2.71E-06	1.08E-05	1.09E-05	3.6015E-03
557210.94	4204203.17	148086.04063	12.12918	11.37915	9.50893	9.21532	3.54E-03	7.43E-05	8.46E-05	8.37E-05	7.73E-05	3.8601E-03
556787.53	4204553.79	146116.86952	0.48669	0.38248	1.37894	1.47196	3.49E-03	2.98E-06	2.84E-06	1.21E-05	1.24E-05	3.5234E-03
556687.31	4205243.21	145550.95065	0.10564	0.09987	0.13089	0.13331	3.48E-03	6.47E-07	7.43E-07	1.15E-06	1.12E-06	3.4832E-03
556790.69	4204541.12	145265.57265	0.50814	0.39727	1.52314	1.63147	3.47E-03	3.11E-06	2.95E-06	1.34E-05	1.37E-05	3.5059E-03
556867.34	4204334.04	145165.29940	1.31652	0.95160	23.29821	24.70860	3.47E-03	8.07E-06	7.08E-06	2.05E-04	2.07E-04	3.8980E-03
557306.35	4204246.82	144088.38663	4.83240	5.25875	4.15317	4.13281	3.44E-03	2.96E-05	3.91E-05	3.66E-05	3.47E-05	3.5846E-03
556697.30	4205268.91	143319.43669	0.10205	0.09710	0.12406	0.12625	3.43E-03	6.25E-07	7.22E-07	1.09E-06	1.06E-06	3.4297E-03
557355.08	4204290.46	143117.59764	2.87950	3.44935	2.74694	2.76104	3.42E-03	1.76E-05	2.56E-05	2.42E-05	2.32E-05	3.5120E-03
556793.23	4204525.29	142401.76078	0.53446	0.41489	1.72719	1.85798	3.40E-03	3.27E-06	3.08E-06	1.52E-05	1.56E-05	3.4414E-03
556755.93	4204645.66	142333.60477	0.35712	0.29002	0.76020	0.79737	3.40E-03	2.19E-06	2.16E-06	6.69E-06	6.69E-06	3.4204E-03
557319.55	4204249.86	140135.02998	4.44740	4.98465	3.83671	3.82067	3.35E-03	2.72E-05	3.71E-05	3.38E-05	3.21E-05	3.4802E-03
556711.58	4205297.46	140071.22430	0.09812	0.09404	0.11775	0.11971	3.35E-03	6.01E-07	6.99E-07	1.04E-06	1.00E-06	3.3519E-03
556766.11	4204600.00	138293.62026	0.40871	0.32611	0.97321	1.02733	3.31E-03	2.50E-06	2.42E-06	8.57E-06	8.62E-06	3.3282E-03
557370.30	4204294.52	137524.11239	2.65431	3.28422	2.53759	2.55150	3.29E-03	1.63E-05	2.44E-05	2.23E-05	2.14E-05	3.3721E-03
556717.10	4204750.46	136929.16827	0.26285	0.22040	0.46879	0.48655	3.27E-03	1.61E-06	1.64E-06	4.13E-06	4.08E-06	3.2849E-03
557196.73	4204187.94	136898.04701	16.02525	15.08471	12.01208	11.44239	3.27E-03	9.82E-05	1.12E-04	1.06E-04	9.60E-05	3.6848E-03
556728.31	4204712.88	136307.00394	0.29034	0.24063	0.54546	0.56782	3.26E-03	1.78E-06	1.79E-06	4.80E-06	4.76E-06	3.2717E-03
556791.33	4204508.83	134129.00419	0.55517	0.42704	1.92348	2.07448	3.21E-03	3.40E-06	3.18E-06	1.69E-05	1.74E-05	3.2474E-03
556797.03	4204491.73	134052.60765	0.59234	0.45250	2.29897	2.49512	3.20E-03	3.63E-06	3.36E-06	2.02E-05	2.09E-05	3.2529E-03
557336.81	4204252.91	133552.60486	3.94887	4.66784	3.44840	3.43684	3.19E-03	2.42E-05	3.47E-05	3.04E-05	2.88E-05	3.3108E-03
556805.63	4204462.97	132410.35618	0.66040	0.49841	3.23012	3.53856	3.17E-03	4.05E-06	3.71E-06	2.84E-05	2.97E-05	3.2313E-03
556734.50	4204678.88	132217.76414	0.31674	0.25929	0.62806	0.65576	3.16E-03	1.94E-06	1.93E-06	5.53E-06	5.50E-06	3.1757E-03
557388.57	4204296.55	130394.67679	2.46399	3.17141	2.34526	2.35760	3.12E-03	1.51E-05	2.36E-05	2.07E-05	1.98E-05	3.1963E-03
557173.02	4205341.60	129440.49884	0.10908	0.10782	0.11522	0.11634	3.09E-03	6.68E-07	8.02E-07	1.01E-06	9.76E-07	3.0979E-03
557195.09	4205328.14	128760.11472	0.11113	0.11049	0.11572	0.11671	3.08E-03	6.81E-07	8.22E-07	1.02E-06	9.79E-07	3.0817E-03
556775.66	4204537.62	127977.32607	0.49076	0.38103	1.43660	1.53297	3.06E-03	3.01E-06	2.83E-06	1.27E-05	1.29E-05	3.0908E-03
556809.13	4204440.18	126906.84393	0.71143	0.53096	4.12115	4.50115	3.03E-03	4.36E-06	3.95E-06	3.63E-05	3.78E-05	3.1162E-03
557216.45	4205316.48	126711.71543	0.11268	0.11274	0.11611	0.11703	3.03E-03	6.90E-07	8.38E-07	1.02E-06	9.82E-07	3.0327E-03
556741.32	4204636.66	126414.29756	0.35371	0.28483	0.75937	0.79622	3.02E-03	2.17E-06	2.12E-06	6.69E-06	6.68E-06	3.0397E-03
556704.83	4204746.08	126148.30141	0.26022	0.21712	0.46538	0.48292	3.02E-03	1.59E-06	1.61E-06	4.10E-06	4.05E-06	3.0271E-03
556777.07	4204525.81	125554.23909	0.50780	0.39208	1.55841	1.66658	3.00E-03	3.11E-06	2.92E-06	1.37E-05	1.40E-05	3.0352E-03
557160.09	4205355.07	125459.58002	0.10676	0.10536	0.11387	0.11502	3.00E-03	6.54E-07	7.83E-07	1.00E-06	9.65E-07	3.0027E-03
556812.64	4204427.03	125197.86867	0.74756	0.55462	4.82269	5.24197	2.99E-03	4.58E-06	4.12E-06	4.25E-05	4.40E-05	3.0882E-03
556745.59	4204614.05	123821.11028	0.37643	0.30040	0.84972	0.89331	2.96E-03	2.31E-06	2.23E-06	7.48E-06	7.50E-06	2.9796E-03
557141.79	4204170.05	123780.81583	33.62563	33.58189	27.90410	24.67476	2.96E-03	2.06E-04	2.50E-04	2.46E-04	2.07E-04	3.8676E-03
557476.33	4204953.07	123693.66833	0.18318	0.22282	0.21828	0.22241	2.96E-03	1.12E-06	1.66E-06	1.92E-06	1.87E-06	2.9636E-03
556712.86	4204710.07	123369.92820	0.28439	0.23443	0.53386	0.55545	2.95E-03	1.74E-06	1.74E-06	4.70E-06	4.66E-06	2.9621E-03
557409.89	4204298.58	123330.60532	2.28958	3.07237	2.16317	2.17355	2.95E-03	1.40E-05	2.28E-05	1.90E-05	1.82E-05	3.0225E-03
556748.40	4204600.84	122566.10375	0.39092	0.31031	0.91155	0.95993	2.93E-03	2.39E-06	2.31E-06	8.03E-06	8.06E-06	2.9509E-03
557359.14	4204250.88	121630.84296	3.50791	4.47178	3.04604	3.03451	2.91E-03	2.15E-05	3.32E-05	2.68E-05	2.55E-05	3.0148E-03
557178.40	4205350.76	121579.79888	0.10772	0.10648	0.11332	0.11441	2.91E-03	6.60E-07	7.92E-07	9.98E-07	9.60E-07	2.9099E-03
557200.48	4205337.30	121443.76902	0.10981	0.10909	0.11384	0.11486	2.90E-03	6.73E-07	8.11E-07	1.00E-06	9.64E-07	2.9067E-03
557476.76	4204978.92	121374.90402	0.17673	0.21066	0.20618	0.20992	2.90E-03	1.08E-06	1.57E-06	1.82E-06	1.76E-06	2.9078E-03
557491.66	4204930.28	120958.10251	0.19414	0.23600	0.23012	0.23445	2.89E-03	1.19E-06	1.75E-06	2.03E-06	1.97E-06	2.8986E-03

557219.68	4205325.09	120875.74105	0.11125	0.11132	0.11435	0.11524	2.89E-03	6.82E-07	8.28E-07	1.01E-06	9.67E-07	2.8932E-03
557141.79	4205371.76	120218.01503	0.10381	0.10229	0.11230	0.11344	2.87E-03	6.36E-07	7.61E-07	9.89E-07	9.52E-07	2.8773E-03
556683.03	4205294.61	119824.62991	0.09777	0.09309	0.11845	0.12050	2.86E-03	5.99E-07	6.92E-07	1.04E-06	1.01E-06	2.8679E-03
557373.35	4204259.00	119537.07939	3.13309	4.11583	2.76908	2.76381	2.86E-03	1.92E-05	3.06E-05	2.44E-05	2.32E-05	2.9550E-03
556719.04	4204674.38	119088.38684	0.31050	0.25258	0.61584	0.64259	2.85E-03	1.90E-06	1.88E-06	5.42E-06	5.39E-06	2.8615E-03
557240.68	4205314.32	118330.10128	0.11204	0.11324	0.11411	0.11499	2.83E-03	6.86E-07	8.42E-07	1.00E-06	9.65E-07	2.8323E-03
556755.99	4204562.35	118168.83150	0.43671	0.34108	1.13475	1.20143	2.82E-03	2.68E-06	2.54E-06	9.99E-06	1.01E-05	2.8502E-03
557269.25	4204194.92	117970.00915	7.97401	8.66014	5.95017	5.78842	2.82E-03	4.89E-05	6.44E-05	5.24E-05	4.86E-05	3.0344E-03
557165.48	4205364.22	117678.70834	0.10549	0.10409	0.11207	0.11318	2.81E-03	6.46E-07	7.74E-07	9.87E-07	9.50E-07	2.8166E-03
556654.47	4205246.06	116711.40850	0.10359	0.09729	0.13091	0.13342	2.79E-03	6.35E-07	7.23E-07	1.15E-06	1.12E-06	2.7937E-03
557286.20	4204200.22	116692.11545	6.88560	7.77567	5.22317	5.10315	2.79E-03	4.22E-05	5.78E-05	4.60E-05	4.28E-05	2.9785E-03
556665.89	4205273.19	116373.38399	0.10010	0.09466	0.12370	0.12593	2.78E-03	6.13E-07	7.04E-07	1.09E-06	1.06E-06	2.7855E-03
557476.33	4205039.40	115848.63476	0.16426	0.18792	0.18490	0.18677	2.77E-03	1.01E-06	1.40E-06	1.63E-06	1.57E-06	2.7751E-03
557126.71	4205385.22	115427.79642	0.10143	0.09991	0.11110	0.11231	2.76E-03	6.21E-07	7.43E-07	9.78E-07	9.42E-07	2.7627E-03
556810.01	4204409.51	115080.09280	0.77073	0.56539	4.95325	5.31897	2.75E-03	4.72E-06	4.20E-06	4.36E-05	4.46E-05	2.8483E-03
557485.97	4205021.43	114979.91222	0.16875	0.19523	0.19105	0.19319	2.75E-03	1.03E-06	1.45E-06	1.68E-06	1.62E-06	2.7545E-03
557428.16	4204291.48	114685.16663	2.23744	3.16523	2.06879	2.07492	2.74E-03	1.37E-05	2.35E-05	1.82E-05	1.74E-05	2.8145E-03
557257.59	4204185.91	114610.41503	9.28829	9.92705	6.66416	6.43708	2.74E-03	5.69E-05	7.38E-05	5.87E-05	5.40E-05	2.9833E-03
556726.14	4204634.98	114504.04500	0.34340	0.27507	0.73149	0.76604	2.74E-03	2.10E-06	2.05E-06	6.44E-06	6.43E-06	2.7544E-03
557208.55	4205345.37	114277.18956	0.10856	0.10792	0.11195	0.11293	2.73E-03	6.65E-07	8.02E-07	9.86E-07	9.48E-07	2.7353E-03
557186.48	4205358.83	114126.74340	0.10658	0.10540	0.11150	0.11254	2.73E-03	6.53E-07	7.84E-07	9.82E-07	9.44E-07	2.7317E-03
556687.30	4204742.57	113596.54661	0.25472	0.21128	0.45557	0.47250	2.72E-03	1.56E-06	1.57E-06	4.01E-06	3.96E-06	2.7268E-03
556684.45	4205311.74	113445.58126	0.09540	0.09107	0.11487	0.11680	2.71E-03	5.84E-07	6.77E-07	1.01E-06	9.80E-07	2.7153E-03
557243.37	4205322.94	113332.95432	0.11059	0.11179	0.11238	0.11324	2.71E-03	6.78E-07	8.31E-07	9.90E-07	9.50E-07	2.7128E-03
557476.33	4205060.44	113201.85896	0.15960	0.18030	0.17788	0.18007	2.71E-03	9.78E-07	1.34E-06	1.57E-06	1.51E-06	2.7116E-03
557497.80	4205007.85	112979.25956	0.17289	0.20098	0.19585	0.19828	2.70E-03	1.06E-06	1.49E-06	1.72E-06	1.66E-06	2.7068E-03
557224.53	4205337.48	112886.07630	0.10934	0.10933	0.11189	0.11274	2.70E-03	6.70E-07	8.13E-07	9.85E-07	9.46E-07	2.7021E-03
557303.69	4204202.34	112760.05465	6.09271	7.22490	4.63764	4.54109	2.70E-03	3.73E-05	5.37E-05	4.08E-05	3.81E-05	2.8656E-03
556774.23	4204492.99	112695.67959	0.54498	0.41317	1.87339	2.00782	2.69E-03	3.34E-06	3.07E-06	1.65E-05	1.68E-05	2.7339E-03
557155.73	4204161.98	112544.27437	30.87041	31.53162	22.72346	20.19687	2.69E-03	1.89E-04	2.34E-04	2.00E-04	1.69E-04	3.4837E-03
557519.28	4204935.10	112538.61334	0.19425	0.23446	0.22551	0.22954	2.69E-03	1.19E-06	1.74E-06	1.99E-06	1.93E-06	2.6972E-03
557147.17	4205380.91	112508.72462	0.10262	0.10109	0.11057	0.11171	2.69E-03	6.29E-07	7.52E-07	9.74E-07	9.37E-07	2.6929E-03
557269.22	4205307.86	111592.60137	0.11218	0.11445	0.11335	0.11401	2.67E-03	6.87E-07	8.51E-07	9.98E-07	9.57E-07	2.6712E-03
557509.20	4204989.88	111502.60762	0.17853	0.20919	0.20285	0.20541	2.67E-03	1.09E-06	1.56E-06	1.79E-06	1.72E-06	2.6718E-03
557475.01	4205076.22	111411.91151	0.15621	0.17490	0.17256	0.17482	2.66E-03	9.57E-07	1.30E-06	1.52E-06	1.47E-06	2.6687E-03
557109.30	4205397.78	111309.76679	0.09911	0.09756	0.11014	0.11140	2.66E-03	6.07E-07	7.25E-07	9.70E-07	9.35E-07	2.6642E-03
556694.31	4204710.07	111120.73822	0.27515	0.22568	0.51326	0.53352	2.66E-03	1.69E-06	1.68E-06	4.52E-06	4.48E-06	2.6688E-03
557173.56	4205372.30	110410.26913	0.10444	0.10306	0.11039	0.11146	2.64E-03	6.40E-07	7.66E-07	9.72E-07	9.35E-07	2.6428E-03
557319.59	4204206.04	110349.76614	5.43592	6.72684	4.17778	4.10066	2.64E-03	3.33E-05	5.00E-05	3.68E-05	3.44E-05	2.7926E-03
556759.36	4204523.57	110016.15825	0.48299	0.37026	1.41727	1.50757	2.63E-03	2.96E-06	2.75E-06	1.25E-05	1.27E-05	2.6609E-03
556732.38	4204597.75	109863.87610	0.37840	0.29846	0.87262	0.91729	2.63E-03	2.32E-06	2.22E-06	7.68E-06	7.70E-06	2.6463E-03
557394.66	4204255.95	109839.69109	2.86706	4.04057	2.50753	2.50051	2.63E-03	1.76E-05	3.00E-05	2.21E-05	2.10E-05	2.7165E-03
556704.99	4204671.57	109310.38903	0.30379	0.24586	0.60087	0.62651	2.61E-03	1.86E-06	1.83E-06	5.29E-06	5.26E-06	2.6274E-03
557233.43	4204170.90	109270.39031	13.15590	13.51213	8.59542	8.15855	2.61E-03	8.06E-05	1.00E-04	7.57E-05	6.85E-05	2.9375E-03
556694.45	4205334.59	108905.63016	0.09258	0.08881	0.11053	0.11234	2.60E-03	5.67E-07	6.60E-07	9.73E-07	9.43E-07	2.6067E-03
557442.37	4204286.40	108864.06614	2.19454	3.23578	1.99728	2.00051	2.60E-03	1.34E-05	2.41E-05	1.76E-05	1.68E-05	2.6744E-03
557283.76	4205304.09	108309.32875	0.11236	0.11520	0.11322	0.11395	2.59E-03	6.88E-07	8.57E-07	9.97E-07	9.56E-07	2.5928E-03
556760.13	4205390.27	108041.36928	0.08716	0.08498	0.10303	0.10463	2.58E-03	5.34E-07	6.32E-07	9.07E-07	8.78E-07	2.5858E-03
557475.89	4205095.06	107952.78960	0.14966	0.16833	0.16539	0.16733	2.58E-03	9.17E-07	1.25E-06	1.46E-06	1.40E-06	2.5858E-03
557132.10	4205394.37	107825.31775	0.10030	0.09877	0.10937	0.11054	2.58E-03	6.14E-07	7.34E-07	9.63E-07	9.28E-07	2.5809E-03
557247.68	4205332.09	107741.24932	0.10901	0.11028	0.11042	0.11123	2.58E-03	6.68E-07	8.20E-07	9.72E-07	9.33E-07	2.5791E-03
556822.39	4204365.07	107638.74716	0.91043	0.65385	6.76394	7.15006	2.57E-03	5.58E-06	4.86E-06	5.96E-05	6.00E-05	2.7032E-03
557337.07	4204209.22	107623.91475	4.89500	6.35318	3.78157	3.71851	2.57E-03	3.00E-05	4.72E-05	3.33E-05	3.12E-05	2.7146E-03
557532.86	4204949.56	107567.28952	0.18699	0.22629	0.21651	0.22028	2.57E-03	1.15E-06	1.68E-06	1.91E-06	1.85E-06	2.5781E-03
556741.10	4204563.47	107527.25237	0.41802	0.32513	1.05515	1.11389	2.57E-03	2.56E-06	2.42E-06	9.29E-06	9.35E-06	2.5942E-03
557091.53	4205409.63	107275.68888	0.09694	0.09532	0.10925	0.11060	2.56E-03	5.94E-07	7.09E-07	9.62E-07	9.28E-07	2.5677E-03
556742.99	4205381.70	106624.26329	0.08779	0.08532	0.10369	0.10530	2.55E-03	5.38E-07	6.34E-07	9.13E-07	8.84E-07	2.5519E-03
557408.88	4204257.98	105858.09917	2.67051	3.90533	2.33970	2.33375	2.53E-03	1.64E-05	2.90E-05	2.06E-05	1.96E-05	2.6162E-03
557113.61	4205404.78	105493.45406	0.09830	0.09673	0.10883	0.11006	2.52E-03	6.02E-07	7.19E-07	9.58E-07	9.24E-07	2.5251E-03
557155.25	4205388.99	105479.50236	0.10167	0.10020	0.10889	0.10999	2.52E-03	6.23E-07	7.45E-07	9.59E-07	9.23E-07	2.5249E-03
556673.28	4204740.82	105195.71558	0.24968	0.20623	0.44578	0.46213	2.51E-03	1.53E-06	1.53E-06	3.93E-06	3.88E-06	2.5257E-03
556779.33	4204455.96	105037.87957	0.60442	0.44978	2.44109	2.61974	2.51E-03	3.70E-06	3.34E-06	2.15E-05	2.20E-05	2.5616E-03
557539.44	4204967.97	104507.37247	0.18170	0.21790	0.20759	0.21109	2.50E-03	1.11E-06	1.62E-06	1.83E-06	1.77E-06	2.5047E-03
556683.91	4204706.70	104503.64433	0.27180	0.22203	0.50727	0.52710	2.50E-03	1.67E-06	1.65E-06	4.47E-06	4.42E-06	2.5105E-03
557477.64	4205112.15	104479.25244	0.14456	0.16251	0.15924	0.16105	2.50E-03	8.86E-07	1.21E-06	1.40E-06	1.35E-06	2.5025E-03
557355.62	4204210.81	104411.39363	4.49032	6.13158	3.46010	3.40572	2.50E-03	2.75E-05	4.56E-05	3.05E-05	2.86E-05	2.6282E-03
556710.69	4204633.57	104364.04357	0.33271	0.26517	0.70207	0.73424	2.49E-03	2.04E-06	1.97E-06	6.18E-06	6.16E-06	2.5113E-03
557270.83	4205327.25	102590.27151	0.10883	0.11109	0.10946	0.11013	2.45E-03	6.67E-07	8.26E-07	9.64E-07	9.24E-07	2.4559E-03
557300.99	4205306.79	102177.36312	0.11078	0.11473	0.11150	0.11220	2.44E-03	6.79E-07	8.53E-07	9.82E-07	9.42E-07	2.4461E-03
557478.96	4205125.30	101975.74723	0.14128	0.15871	0.15517	0.15690	2.44E-03	8.66E-07	1.18E-06	1.37E-06	1.32E-06	2.4426E-03
557372.58	4204213.99	101923.35889	4.09709	5.85177	3.17420	3.12865	2.44E-03	2.51E-05	4.35E-05	2.80E-05	2.63E-05	2.5594E-03
557279.45	4205323.48	101688.15012	0.10894	0.11175	0.10948	0.11023	2.43E-03	6.67E-07	8.31E-07	9.64E-07	9.25E-07	2.4344E-03
556824.92	4204347.34	101652.72174	0.95807	0.68112	6.95880	7.33302	2.43E-03	5.87E-06	5.06E-06	6.13E-05	6.15E-05	2.5639E-03
557456.58	4204276.25	101569.69128	2.18156	3.41794	1.93942	1.93849	2.43E-03	1.34E-05	2.54E-05	1.71E-05	1.63E-05	2.5003E-03
556833.15	4204331.51	101092.29423	1.04079	0.73544	8.02696	8.44366	2.42E-03	6.38E-06	5.47E-06	7.07E-05	7.09E-05	2.5701E-03
557140.17	4205402.45	101055.60047	0.09941	0.09788	0.10772	0.10885	2.42E-03	6.09E-07	7.28E-07	9.49E-07	9.13E-07	2.4190E-03
557252.76	4204165.29	101036.81588	11.58986	12.71339	7.32604	6.96610	2.42E-03	7.10E-05	9.45E-05	6.45E-05	5.85E-05	2.7039E-03
557170.39	4204151.72	100886.92666	30.20974	32.07850	18.60059	16.54670	2.41E-03	1.85E-04	2.39E-04	1.64E-04	1.39E-04	3.1381E-03
556690.66	4204667.35	100357.69721	0.29758	0.23946	0.58758	0.61219	2.40E-03	1.82E-06	1.78E-06	5.17E-06	5.14E-06	2.4131E-03
556864.85	4204281.44	100228.84541	1.43940	1.00122	13.29347	13.84945	2.40E-03	8.82E-06	7.44E-06	1.17E-04	1.16E-04	2.6456E-03
557289.14	4205320.79	100125.27937	0.10894	0.11224	0.10943	0.11009	2.39E-03	6.67E-07	8.35E-07	9.64E-07	9.24E-07	2.3970E-03
557096.92	4205418.78	100018.30110	0.09593	0.09429	0.10767	0.10893	2.39E-03	5.88E-07	7.01E-07	9.48E-07	9.14E-07	2.3942E-03
556716.65	4204597.19	99970.04918	0.36412	0.28578	0.82530	0.86581	2.39E-03	2.23E-06	2.12E-06	7.27E-06	7.27E-06	2.4088E-03
556660.18	4205314.60	99595.85437	0.09415	0.08948	0.11431	0.11627	2.38E-03	5.77E-07	6.65E-07	1.01E-06	9.76E-07	2.3842E-03
557563.98	4204953.07	99282.83122	0.18303	0.22396	0.21123	0.21472	2.37E-03	1.12E-06	1.67E-06	1.86E-06	1.80E-06	2.3799E-03
557072.15	4205426.86	98783.39730	0.09395	0.09238	0.10753	0.10887	2.36E-03	5.76E-07	6.87E-07	9.47E-07	9.14E-07	2.3647E-03
556755.86	4204489.19	98249.89657	0.51492	0.38709	1.65221	1.75802	2.35E-03	3.15E-06	2.88E-06	1.45E-05	1.48E-05	2.3841E-03
557481.58	4205146.78	98223.95564	0.13865	0.15292	0.15024	0.15191	2.35E-03	8.49E-07	1.14E-06	1.32E-06	1.27E-06	2.3527E-03
556727.61	4204558.69	98076.95691	0.40674	0.31431	1.01363	1.06781	2.34E-03	2.49E-06	2.34E-06	8.93E-06	8.96E-06	2.3674E-03
556634.48	4205273.19	98030.77372	0.09866	0.09269	0.12463	0.12698	2.34E-03	6.04E-07	6.89E-07	1.10E-06	1.07E-06	2.3470E-03
557319.83	4205304.63	97980.04831	0.11036	0.11505	0.11108	0.11178	2.34E-03	6.76E-07	8.55E-07	9.78E-07	9.38E-07	2.3458E-03
556737.72	4204530.03	97336.39491	0.44501	0.33992	1.21023	1.27957	2.33E-03	2.73E-06	2.53E-06	1.07E-05	1.07E-05	2.3536E-03
557431.21	4204248.85	97132.27397	2.57780	4.10396	2.19374	2.18296	2.32E-03	1.58E-05	3.05E-05	1.93E-05	1.83E-05	2.4060E-03
557124.38	4205415.55	96774.22365	0.09727	0.09562	0.10672	0.10788	2.31E-03	5.96E-07	7.11E-07	9.40E-07	9.05E-07	2.3166E-03
556656.62	4204739.94	96650.65125	0.24307	0.19987	0.43230	0.44784	2.31E-03	1.49E-06	1.49E-06	3.81E-06	3.76E-06	2.3211E-03
557577.13	4204946.93	96547.95243	0.18281	0.22642	0.21229	0.21573	2.31E-03	1.12E-06	1.68E-06	1.87E-06	1.81E-06	2.3146E-03
557270.21	4204163.42	96189.90217	10.05728	11.75123	6.33665	6.04855	2.30E-03	6.16E-05	8.74E-05	5.58E-05	5.08E-05	2.5551E-03
557389.00	4204211.34	95893.01385	3.77635	5.80385	2.90689	2.86484	2.29E-03	2.31E-05	4.32E-05	2.56E-05	2.40E-05	2.4084E-03
556668.75	4205337.44	95783.86914	0.09149	0.08735	0.10998	0.11181	2.29E-03	5.61E-07	6.49E-07	9.69E-07	9.38E-07	2.2929E-03
557484.21	4205161.68	95488.30843	0.13756	0.14943	0.14729	0.14915	2.28E-03	8.43E-07	1.11E-06	1.30E-06	1.25E-06	2.2873E-03
556666.77	4204704.17	95441.69490	0.26453	0.21493	0.49181	0.51062	2.28E-03	1.62E-06	1.60E-06	4.33E-06	4.28E-06	2.2935E-03
556696.64	4204626.27	95197.17466	0.32688	0.25863	0.68996	0.72093	2.28E-03	2.00E-06	1.92E-06	6.08E-06	6.05E-06	2.2918E-03
557476.88	4204272.19	95140.82927	2.06980	3.46357	1.81633	1.81348	2.27E-03	1.27E-05	2.58E-05	1.60E-05	1.52E-05	2.3441E-03
557333.29	4205303.55	95027.22198	0.10987	0.11528	0.11081	0.11128	2.27E-03	6.73E-07	8.57E-07	9.76E-07	9.34E-07	2.2752E-03
557224.53	4205376.78	94841.44249	0.10391	0.10331	0.10607	0.10694	2.27E-03	6.37E-07	7.68E-07	9.34E-07	8.97E-07	2.2705E-03
556782.84	4204415.64	94734.48044	0.66721	0.48563	3.05329	3.25525	2.26E-03	4.09E-06	3.61E-06	2.69E-05	2.73E-05	2.3266E-03
557216.99	4205381.63	94522.23397	0.10337	0.10250	0.10596	0.10686	2.26E-03	6.33E-07	7.62E-07	9.33E-07	8.97E-07	2.2629E-03
557233.14	4205372.48	94438.27913	0.10420	0.10403	0.10575	0.10651	2.26E-03	6.38E-07	7.74E-07	9.31E-07	8.94E-07	2.2609E-03
557187.26	4204145.12	94375.66329	27.93035	29.83981	14.95996	13.41818	2.26E-03	1.71E-04	2.22E-04	1.32E-04	1.13E-04	2.8935E-03
557243.91	4205367.09	93942.61860	0.10432	0.10483	0.10546	0.10623	2.25E-03	6.39E-07	7.79E-07	9.29E-07	8.91E-07	2.2490E-03
557056.53	4205437.63	93898.83106	0.09197	0.09045	0.10645	0.10782	2.24E-03	5.63E-07	6.73E-07	9.37E-07	9.05E-07	2.2478E-03
557077.00	4205433.32	93880.51855	0.09333	0.09173	0.10641	0.10776	2.24E-03	5.72E-07	6.82E-07	9.37E-07	9.04E-07	2.2474E-03
557104.99	4205426.86	93626.16623	0.09516	0.09351	0.10611	0.10732	2.24E-03	5.83E-07	6.95E-07	9.34E-07	9.01E-07	2.2414E-03
556764.43	4204451.58	93393.77016	0.57418	0.42389	2.12352	2.26239	2.23E-03	3.52E-06	3.15E-06	1.87E-05	1.90E-05	2.2770E-03
557346.93	4205299.43	93259.14967	0.11025	0.11614	0.11147	0.11220	2.23E-03	6.75E-07	8.64E-07	9.82E-07	9.42E-07	2.2329E-03
557593.34	4204945.62	92990.10108	0.18235	0.22652	0.21078	0.21408	2.22E-03	1.12E-06	1.68E-06	1.86E-06	1.80E-06	2.2295E-03
557208.37	4205389.71	92928.71610	0.10226	0.10120	0.10552	0.10644	2.22E-03	6.26E-07	7.52E-07	9.29E-07	8.93E-07	2.2248E-03
557484.21	4205180.08	92813.09315	0.13440	0.14503	0.14375	0.14560	2.22E-03	8.23E-07	1.08E-06	1.27E-06	1.22E-06	2.2232E-03

557274.60	4205349.86	92717.75813	0.10502	0.10739	0.10513	0.10581	2.22E-03	6.43E-07	7.98E-07	9.26E-07	8.88E-07	2.2198E-03
556674.92	4204665.95	92355.44928	0.28870	0.23122	0.56583	0.58890	2.21E-03	1.77E-06	1.72E-06	4.98E-06	4.94E-06	2.2213E-03
556703.16	4204593.54	92101.61490	0.35439	0.27660	0.79557	0.83337	2.20E-03	2.17E-06	2.06E-06	7.01E-06	6.99E-06	2.2200E-03
557448.46	4204243.77	91860.50905	2.48850	4.23024	2.08108	2.06826	2.20E-03	1.52E-05	3.15E-05	1.83E-05	1.74E-05	2.2784E-03
557283.22	4205348.25	91298.02970	0.10485	0.10765	0.10480	0.10539	2.18E-03	6.42E-07	8.00E-07	9.23E-07	8.84E-07	2.1858E-03
556645.23	4204738.19	91277.12600	0.23905	0.19589	0.42439	0.43946	2.18E-03	1.46E-06	1.46E-06	3.74E-06	3.69E-06	2.1924E-03
557286.42	4204160.30	91152.18305	8.98924	11.27391	5.59671	5.35549	2.18E-03	5.51E-05	8.38E-05	4.93E-05	4.49E-05	2.4122E-03
557199.76	4205398.32	91003.32893	0.10106	0.09989	0.10496	0.10590	2.18E-03	6.19E-07	7.43E-07	9.24E-07	8.89E-07	2.1787E-03
557292.37	4205343.40	90989.97040	0.10524	0.10836	0.10512	0.10570	2.18E-03	6.45E-07	8.06E-07	9.26E-07	8.87E-07	2.1785E-03
557408.61	4204211.34	90984.34143	3.41975	5.65074	2.63281	2.59640	2.18E-03	2.10E-05	4.20E-05	2.32E-05	2.18E-05	2.2830E-03
557365.78	4205297.27	90007.52542	0.11072	0.11689	0.11217	0.11295	2.15E-03	6.78E-07	8.69E-07	9.88E-07	9.48E-07	2.1552E-03
557485.53	4205196.74	89735.90612	0.13128	0.14101	0.14019	0.14198	2.15E-03	8.04E-07	1.05E-06	1.23E-06	1.19E-06	2.1495E-03
556712.71	4204555.60	89520.08748	0.39219	0.30126	0.95750	1.00622	2.14E-03	2.40E-06	2.24E-06	8.43E-06	8.44E-06	2.1616E-03
557492.11	4204261.03	89113.56956	2.06861	3.71683	1.76556	1.75900	2.13E-03	1.27E-05	2.76E-05	1.55E-05	1.48E-05	2.2010E-03
556652.72	4204702.76	89066.04976	0.25823	0.20896	0.47790	0.49582	2.13E-03	1.58E-06	1.55E-06	4.21E-06	4.16E-06	2.1407E-03
557061.92	4205444.63	88968.92270	0.09133	0.08979	0.10527	0.10660	2.13E-03	5.60E-07	6.68E-07	9.27E-07	8.95E-07	2.1300E-03
557614.82	4204938.60	88926.26557	0.18356	0.22920	0.21104	0.21418	2.13E-03	1.12E-06	1.70E-06	1.86E-06	1.80E-06	2.1324E-03
557192.22	4205406.94	88700.22096	0.09984	0.09854	0.10427	0.10522	2.12E-03	6.12E-07	7.33E-07	9.18E-07	8.83E-07	2.1236E-03
556681.74	4204626.27	88509.95426	0.31593	0.24899	0.65803	0.68658	2.12E-03	1.94E-06	1.85E-06	5.79E-06	5.76E-06	2.1313E-03
557086.15	4205441.40	87912.69418	0.09266	0.09103	0.10488	0.10617	2.10E-03	5.68E-07	6.77E-07	9.24E-07	8.91E-07	2.1047E-03
557379.24	4205296.20	87844.96509	0.11060	0.11724	0.11260	0.11330	2.10E-03	6.78E-07	8.72E-07	9.92E-07	9.51E-07	2.1035E-03
556625.91	4205303.18	87640.80829	0.09422	0.08880	0.11731	0.11941	2.10E-03	5.77E-07	6.60E-07	1.03E-06	1.00E-06	2.0984E-03
557303.25	4204158.43	87076.52810	7.96431	10.79897	4.95205	4.75290	2.08E-03	4.88E-05	8.03E-05	4.36E-05	3.99E-05	2.2942E-03
556861.62	4204266.37	86934.18155	1.42632	0.97789	10.66226	11.13360	2.08E-03	8.74E-06	7.27E-06	9.39E-05	9.34E-05	2.2816E-03
556788.04	4204379.67	86881.56365	0.73155	0.52193	3.58495	3.79222	2.08E-03	4.48E-06	3.88E-06	3.16E-05	3.18E-05	2.1488E-03
556750.13	4205421.68	86837.70333	0.08365	0.08156	0.09860	0.10005	2.08E-03	5.12E-07	6.06E-07	8.68E-07	8.40E-07	2.0788E-03
557649.88	4204767.68	86425.96414	0.25501	0.33638	0.29610	0.30125	2.07E-03	1.56E-06	2.50E-06	2.61E-06	2.53E-06	2.0753E-03
557466.73	4204236.67	86374.60977	2.41540	4.44244	1.97555	1.96045	2.06E-03	1.48E-05	3.30E-05	1.74E-05	1.65E-05	2.1466E-03
557647.25	4204802.30	86325.80618	0.23517	0.30762	0.27295	0.27747	2.06E-03	1.44E-06	2.29E-06	2.40E-06	2.33E-06	2.0722E-03
557649.44	4204784.77	86237.41129	0.24480	0.32157	0.28407	0.28891	2.06E-03	1.50E-06	2.39E-06	2.50E-06	2.42E-06	2.0704E-03
557646.81	4204819.84	86080.38935	0.22609	0.29454	0.26224	0.26646	2.06E-03	1.39E-06	2.19E-06	2.31E-06	2.24E-06	2.0660E-03
557663.46	4204713.78	85981.98331	0.29643	0.39684	0.34099	0.34701	2.06E-03	1.82E-06	2.95E-06	3.00E-06	2.91E-06	2.0662E-03
556660.03	4204664.26	85946.60387	0.28080	0.22390	0.54636	0.56805	2.05E-03	1.72E-06	1.66E-06	4.81E-06	4.77E-06	2.0676E-03
557658.64	4204733.50	85771.28821	0.27849	0.37125	0.32205	0.32777	2.05E-03	1.71E-06	2.76E-06	2.84E-06	2.75E-06	2.0605E-03
556733.70	4204489.19	85646.50574	0.47580	0.35511	1.40175	1.48154	2.05E-03	2.91E-06	2.64E-06	1.23E-05	1.24E-05	2.0778E-03
557647.69	4204835.61	85616.89699	0.21846	0.28352	0.25307	0.25703	2.05E-03	1.34E-06	2.11E-06	2.23E-06	2.16E-06	2.0546E-03
556767.94	4204416.52	85543.75745	0.62146	0.44998	2.50558	2.65917	2.05E-03	3.81E-06	3.35E-06	2.21E-05	2.23E-05	2.0966E-03
556689.11	4204590.73	85469.35418	0.34393	0.26706	0.76235	0.79729	2.04E-03	2.11E-06	1.99E-06	6.71E-06	6.69E-06	2.0607E-03
557657.33	4204750.15	85382.29417	0.26549	0.35241	0.30754	0.31297	2.04E-03	1.63E-06	2.62E-06	2.71E-06	2.63E-06	2.0507E-03
557635.85	4204930.71	85283.51321	0.18519	0.23195	0.21156	0.21458	2.04E-03	1.13E-06	1.72E-06	1.86E-06	1.80E-06	2.0453E-03
557425.04	4204203.93	85120.29956	3.28406	5.92901	2.47121	2.43386	2.03E-03	2.01E-05	4.41E-05	2.18E-05	2.04E-05	2.1413E-03
556716.65	4204524.41	85055.49496	0.42116	0.31870	1.10069	1.15863	2.03E-03	2.58E-06	2.37E-06	9.69E-06	9.72E-06	2.0577E-03
557493.86	4205213.83	84905.24531	0.12745	0.13696	0.13579	0.13767	2.03E-03	7.81E-07	1.02E-06	1.20E-06	1.16E-06	2.0339E-03
557508.35	4204254.94	84848.22128	2.02648	3.85621	1.69777	1.68939	2.03E-03	1.24E-05	2.87E-05	1.50E-05	1.42E-05	2.0986E-03
557664.11	4204529.75	84711.37365	0.51745	0.76177	0.57325	0.58249	2.03E-03	3.17E-06	5.66E-06	5.05E-06	4.89E-06	2.0439E-03
557280.53	4205368.71	84614.71765	0.10200	0.10447	0.10168	0.10221	2.02E-03	6.25E-07	7.77E-07	8.95E-07	8.58E-07	2.0260E-03
557659.82	4204514.05	84609.30458	0.54495	0.81341	0.60091	0.61041	2.02E-03	3.34E-06	6.05E-06	5.29E-06	5.12E-06	2.0425E-03
556635.91	4205333.16	84428.83748	0.09081	0.08613	0.11090	0.11280	2.02E-03	5.56E-07	6.40E-07	9.77E-07	9.47E-07	2.0215E-03
556830.94	4204300.81	84399.67307	1.07626	0.74329	6.90363	7.22848	2.02E-03	6.59E-06	5.53E-06	6.08E-05	6.07E-05	2.1512E-03
557652.07	4204854.90	84392.21339	0.20956	0.27062	0.24198	0.24564	2.02E-03	1.28E-06	2.01E-06	2.13E-06	2.06E-06	2.0250E-03
557243.37	4205392.94	84125.77084	0.10125	0.10113	0.10202	0.10270	2.01E-03	6.20E-07	7.52E-07	8.98E-07	8.62E-07	2.0143E-03
557656.65	4204495.65	84060.47967	0.57886	0.87946	0.63344	0.64311	2.01E-03	3.55E-06	6.54E-06	5.58E-06	5.40E-06	2.0306E-03
556747.78	4204450.70	83729.28239	0.53762	0.39442	1.81357	1.92111	2.00E-03	3.29E-06	2.93E-06	1.60E-05	1.61E-05	2.0400E-03
556691.59	4205393.13	83708.69126	0.08545	0.08240	0.10118	0.10276	2.00E-03	5.24E-07	6.13E-07	8.91E-07	8.62E-07	2.0040E-03
556625.94	4204738.51	83535.53316	0.23081	0.18831	0.40697	0.42103	2.00E-03	1.41E-06	1.40E-06	3.58E-06	3.53E-06	2.0069E-03
556648.76	4205353.15	83489.80214	0.08884	0.08467	0.10733	0.10912	2.00E-03	5.44E-07	6.30E-07	9.45E-07	9.16E-07	1.9990E-03
557233.68	4205400.47	83483.49726	0.10071	0.10002	0.10221	0.10302	2.00E-03	6.17E-07	7.44E-07	9.00E-07	8.64E-07	1.9989E-03
557654.70	4204872.43	83449.88489	0.20204	0.25977	0.23280	0.23622	1.99E-03	1.24E-06	1.93E-06	2.05E-06	1.98E-06	2.0022E-03
557226.14	4205405.32	83236.41236	0.10018	0.09935	0.10238	0.10323	1.99E-03	6.14E-07	7.39E-07	9.02E-07	8.66E-07	1.9930E-03
557255.22	4205389.17	82979.48847	0.10095	0.10162	0.10116	0.10192	1.98E-03	6.18E-07	7.56E-07	8.91E-07	8.55E-07	1.9868E-03
557066.76	4205454.86	82813.53857	0.09028	0.08872	0.10367	0.10497	1.98E-03	5.53E-07	6.60E-07	9.13E-07	8.81E-07	1.9828E-03
557321.33	4204155.94	82674.40612	7.03614	10.45347	4.37019	4.20585	1.98E-03	4.31E-05	7.77E-05	3.85E-05	3.53E-05	2.1710E-03
557297.22	4205364.94	82617.11337	0.10179	0.10496	0.10120	0.10154	1.98E-03	6.24E-07	7.80E-07	8.91E-07	8.52E-07	1.9782E-03
556636.14	4204702.48	82595.26860	0.25022	0.20166	0.45964	0.47641	1.97E-03	1.53E-06	1.50E-06	4.05E-06	4.00E-06	1.9856E-03
556801.49	4204341.01	82215.78858	0.83915	0.58728	4.46827	4.69716	1.97E-03	5.14E-06	4.37E-06	3.93E-05	3.94E-05	2.0537E-03
557652.51	4204923.70	82149.07279	0.18358	0.23297	0.21077	0.21371	1.96E-03	1.12E-06	1.73E-06	1.86E-06	1.79E-06	1.9704E-03
556697.54	4204552.79	82146.07960	0.37734	0.28820	0.90109	0.94471	1.96E-03	2.31E-06	2.14E-06	7.94E-06	7.93E-06	1.9841E-03
556665.44	4204624.30	82131.14136	0.30568	0.23973	0.62900	0.65533	1.96E-03	1.87E-06	1.78E-06	5.54E-06	5.50E-06	1.9781E-03
557659.74	4204477.61	82094.48784	0.60742	0.94421	0.65802	0.66753	1.96E-03	3.72E-06	7.02E-06	5.79E-06	5.60E-06	1.9847E-03
557485.01	4204231.59	82074.12522	2.33068	4.62114	1.87336	1.85727	1.96E-03	1.43E-05	3.44E-05	1.65E-05	1.56E-05	2.0428E-03
557398.25	4205305.53	81875.15625	0.10876	0.11585	0.11074	0.11169	1.96E-03	6.66E-07	8.61E-07	9.75E-07	9.37E-07	1.9608E-03
557200.46	4204129.72	81777.52153	30.28126	34.01840	12.65330	11.27521	1.95E-03	1.86E-04	2.53E-04	1.11E-04	9.46E-05	2.5995E-03
557216.45	4205414.47	81556.06704	0.09903	0.09796	0.10191	0.10279	1.95E-03	6.07E-07	7.28E-07	8.97E-07	8.63E-07	1.9528E-03
557663.02	4204889.52	81464.08982	0.19484	0.24941	0.22342	0.22661	1.95E-03	1.19E-06	1.85E-06	1.97E-06	1.90E-06	1.9544E-03
557658.71	4204461.11	81142.22438	0.64175	1.01601	0.68771	0.69707	1.94E-03	3.93E-06	7.55E-06	6.06E-06	5.85E-06	1.9632E-03
557166.91	4205433.86	80960.04937	0.09596	0.09436	0.10200	0.10299	1.94E-03	5.88E-07	7.02E-07	8.98E-07	8.64E-07	1.9385E-03
557138.38	4205442.47	80833.66933	0.09420	0.09251	0.10229	0.10336	1.93E-03	5.77E-07	6.88E-07	9.01E-07	8.67E-07	1.9355E-03
556788.04	4204359.91	80674.93180	0.75506	0.53193	3.64330	3.83828	1.93E-03	4.63E-06	3.96E-06	3.21E-05	3.22E-05	2.0015E-03
557525.61	4204248.85	80619.70989	1.97263	4.00596	1.62353	1.61378	1.93E-03	1.21E-05	2.98E-05	1.43E-05	1.35E-05	1.9970E-03
557316.06	4205360.63	80513.33012	0.10156	0.10563	0.10084	0.10114	1.92E-03	6.22E-07	7.85E-07	8.88E-07	8.49E-07	1.9279E-03
557657.68	4204443.06	80235.94439	0.68524	1.10729	0.72358	0.73262	1.92E-03	4.20E-06	8.23E-06	6.37E-06	6.15E-06	1.9431E-03
557492.98	4205241.00	80156.97395	0.12259	0.13116	0.13008	0.13185	1.92E-03	7.51E-07	9.75E-07	1.15E-06	1.11E-06	1.9202E-03
557219.53	4204128.25	79900.21190	24.67167	27.83049	10.27617	9.31058	1.91E-03	1.51E-04	2.07E-04	9.05E-05	7.81E-05	2.4368E-03
556718.50	4204494.89	79776.59066	0.44653	0.33276	1.23815	1.30394	1.91E-03	2.74E-06	2.47E-06	1.09E-05	1.09E-05	1.9342E-03
557351.06	4205341.78	79767.52819	0.10238	0.10867	0.10258	0.10288	1.91E-03	6.27E-07	8.08E-07	9.03E-07	8.63E-07	1.9101E-03
557507.00	4205229.61	79680.99512	0.12379	0.13334	0.13159	0.13321	1.90E-03	7.58E-07	9.91E-07	1.16E-06	1.12E-06	1.9089E-03
557670.04	4204904.86	79560.73063	0.18802	0.24034	0.21501	0.21801	1.90E-03	1.15E-06	1.79E-06	1.89E-06	1.83E-06	1.9086E-03
557209.45	4205423.63	79214.44175	0.09789	0.09661	0.10122	0.10211	1.89E-03	6.00E-07	7.18E-07	8.91E-07	8.57E-07	1.8968E-03
557336.92	4204152.82	78970.85450	6.43161	10.44168	3.96939	3.82640	1.89E-03	3.94E-05	7.76E-05	3.50E-05	3.21E-05	2.0720E-03
557658.71	4204425.01	78902.67179	0.73020	1.20728	0.75782	0.76625	1.89E-03	4.47E-06	8.98E-06	6.67E-06	6.43E-06	1.9128E-03
556671.69	4204588.20	78816.21763	0.33089	0.25551	0.72034	0.75189	1.88E-03	2.03E-06	1.90E-06	6.34E-06	6.31E-06	1.9008E-03
557336.52	4205354.71	78674.18820	0.10133	0.10657	0.10097	0.10115	1.88E-03	6.21E-07	7.92E-07	8.89E-07	8.49E-07	1.8839E-03
557712.99	4204685.29	78667.83336	0.31280	0.42558	0.35363	0.35955	1.88E-03	1.92E-06	3.16E-06	3.11E-06	3.02E-06	1.8919E-03
557443.05	4204195.98	78653.38982	3.08664	6.15084	2.27679	2.24016	1.88E-03	1.89E-05	4.57E-05	2.00E-05	1.88E-05	1.9838E-03
556612.53	4204735.53	78636.69604	0.22655	0.18408	0.39858	0.41211	1.88E-03	1.39E-06	1.37E-06	3.51E-06	3.46E-06	1.8896E-03
556735.85	4205433.10	78622.92485	0.08223	0.08006	0.09682	0.09828	1.88E-03	5.04E-07	5.95E-07	8.53E-07	8.25E-07	1.8823E-03
556752.16	4204420.02	78394.98664	0.57607	0.41568	2.08344	2.20286	1.87E-03	3.53E-06	3.09E-06	1.83E-05	1.85E-05	1.9176E-03
556861.62	4204252.38	78237.56910	1.44507	0.97912	9.77895	10.23023	1.87E-03	8.85E-06	7.28E-06	8.61E-05	8.58E-05	2.0585E-03
557712.11	4204703.70	78229.40695	0.29550	0.40047	0.33530	0.34096	1.87E-03	1.81E-06	2.98E-06	2.95E-06	2.86E-06	1.8808E-03
557123.30	4205452.70	77964.42511	0.09251	0.09080	0.10169	0.10283	1.86E-03	5.67E-07	6.75E-07	8.96E-07	8.63E-07	1.8668E-03
557657.16	4204409.03	77815.72983	0.77258	1.30829	0.78996	0.79780	1.86E-03	4.73E-06	9.73E-06	6.96E-06	6.69E-06	1.8884E-03
557676.17	4204922.83	77640.90633	0.18047	0.23017	0.20600	0.20880	1.86E-03	1.11E-06	1.71E-06	1.81E-06	1.75E-06	1.8625E-03
557712.55	4204722.54	77560.09033	0.27932	0.37671	0.31760	0.32297	1.85E-03	1.71E-06	2.80E-06	2.80E-06	2.71E-06	1.8642E-03
556652.24	4204622.61	77558.18922	0.29753	0.23244	0.60602	0.63065	1.85E-03	1.82E-06	1.73E-06	5.34E-06	5.29E-06	1.8683E-03
556621.81	4204697.42	77381.37386	0.24566	0.19695	0.45030	0.46642	1.85E-03	1.51E-06	1.46E-06	3.97E-06	3.91E-06	1.8607E-03
557415.80	4205312.72	77258.80560	0.10762	0.11473	0.10960	0.11043	1.85E-03	6.59E-07	8.53E-07	9.65E-07	9.27E-07	1.8504E-03
557287.53	4205387.55	77207.14251	0.09931	0.10172	0.09852	0.09909	1.85E-03	6.08E-07	7.56E-07	8.68E-07	8.32E-07	1.8488E-03
557297.76	4205384.32	76410.20252	0.09911	0.10207	0.09819	0.09857	1.83E-03	6.07E-07	7.59E-07	8.65E-07	8.27E-07	1.8297E-03
557176.61	4205441.93	76355.04783	0.09515	0.09355	0.10056	0.10151	1.83E-03	5.83E-07	6.96E-07	8.86E-07	8.52E-07	1.8284E-03
557503.28	4204219.41	76337.14875	2.30039	5.10586	1.78895	1.77007	1.82E-03	1.41E-05	3.80E-05	1.58E-05	1.49E-05	1.9076E-03
557355.62	4204151.57	76328.56741	5.80518	10.39970	3.58931	3.46803	1.82E-03	3.56E-05	7.73E-05	3.16E-05	2.91E-05	1.9983E-03
556732.00	4204449.82	76319.25726	0.50592	0.36911	1.58718	1.67411	1.82E-03	3.10E-06	2.74E-06	1.40E-05	1.40E-05	1.8584E-03
557482.02	4205272.12	76268.17677	0.11714	0.12478	0.12339	0.12502	1.82E-03	7.18E-07	9.28E-07	1.09E-06	1.05E-06	1.8271E-03
556768.94	4204379.67	76265.00423	0.66261	0.46920	2.75390	2.90451	1.82E-03	4.06E-06	3.49E-06	2.43E-05	2.44E-05	1.8794E-03
557152.92	4205449.47	76078.14057	0.09372	0.09202	0.10077	0.10182	1.82E-03	5.74E-07	6.84E-07	8.87E-07	8.54E-07	1.8217E-03
557541.85	4204239.71	76063.96338	1.93680	4.28432	1.55887	1.54739	1.82E-03	1.19E-05	3.19E-05	1.37E-05	1.30E-05	1.8888E-03
556681.24	4204551.39	76046.04636	0.36138	0.27465	0.84092	0.87954	1.82E-03	2.21E-06	2.04E-06	7.41E-06	7.38E-06	1.8370E-03
557655.62	4204392.01	75917.04490	0.81127	1.41821	0.81738	0.82444	1.81E-03	4.97E-06	1.05E-05	7.20E-06	6.92E-06	1.8445E-03

556828.79	4204283.59	75460.85564	1.08178	0.73672	6.24449	6.52656	1.80E-03	6.63E-06	5.48E-06	5.50E-05	5.48E-05	1.9258E-03
556708.73	4205427.39	75385.17284	0.08214	0.07964	0.09697	0.09848	1.80E-03	5.03E-07	5.92E-07	8.54E-07	8.26E-07	1.8049E-03
556629.96	4204657.52	75287.07852	0.26706	0.21087	0.51290	0.53220	1.80E-03	1.64E-06	1.57E-06	4.52E-06	4.47E-06	1.8120E-03
557353.75	4205356.86	75155.69593	0.09994	0.10609	0.09975	0.10000	1.80E-03	6.12E-07	7.89E-07	8.78E-07	8.39E-07	1.7998E-03
557309.06	4205382.71	75016.02513	0.09873	0.10227	0.09762	0.09788	1.79E-03	6.05E-07	7.60E-07	8.60E-07	8.21E-07	1.7964E-03
556788.04	4204340.15	74706.97375	0.77652	0.54000	3.65116	3.83409	1.79E-03	4.76E-06	4.02E-06	3.22E-05	3.22E-05	1.8591E-03
557265.45	4205410.17	74457.03307	0.09836	0.09880	0.09810	0.09868	1.78E-03	6.03E-07	7.35E-07	8.64E-07	8.28E-07	1.7830E-03
557459.48	4204190.68	74208.37784	2.91472	6.29755	2.12196	2.08703	1.77E-03	1.79E-05	4.68E-05	1.87E-05	1.75E-05	1.8749E-03
557251.99	4205418.24	74203.68486	0.09815	0.09774	0.09847	0.09920	1.77E-03	6.01E-07	7.27E-07	8.67E-07	8.32E-07	1.7769E-03
557372.45	4204150.95	74197.27119	5.29836	10.33892	3.29072	3.18584	1.77E-03	3.25E-05	7.69E-05	2.90E-05	2.67E-05	1.9388E-03
557428.12	4205318.26	74177.73982	0.10663	0.11403	0.10872	0.10968	1.77E-03	6.53E-07	8.48E-07	9.57E-07	9.20E-07	1.7767E-03
556703.30	4204494.89	74119.49973	0.42459	0.31508	1.12751	1.18379	1.77E-03	2.60E-06	2.34E-06	9.93E-06	9.93E-06	1.7967E-03
557318.22	4205381.09	74073.93798	0.09852	0.10252	0.09743	0.09758	1.77E-03	6.04E-07	7.62E-07	8.58E-07	8.19E-07	1.7739E-03
557183.61	4205445.70	74069.09601	0.09482	0.09323	0.09981	0.10079	1.77E-03	5.81E-07	6.93E-07	8.79E-07	8.46E-07	1.7737E-03
556598.38	4204729.57	74044.56794	0.22328	0.18049	0.39257	0.40569	1.77E-03	1.37E-06	1.34E-06	3.46E-06	3.40E-06	1.7797E-03
556623.06	4205363.14	73526.22587	0.08676	0.08241	0.10560	0.10738	1.76E-03	5.32E-07	6.13E-07	9.30E-07	9.01E-07	1.7607E-03
557658.71	4204376.55	73429.36837	0.84127	1.51586	0.83363	0.83968	1.76E-03	5.15E-06	1.13E-05	7.34E-06	7.05E-06	1.7862E-03
557244.99	4205424.70	73247.60079	0.09745	0.09683	0.09832	0.09908	1.75E-03	5.97E-07	7.20E-07	8.66E-07	8.31E-07	1.7541E-03
557102.30	4205468.86	73063.77986	0.09003	0.08829	0.10076	0.10195	1.75E-03	5.52E-07	6.56E-07	8.87E-07	8.56E-07	1.7496E-03
556606.63	4204696.58	73057.37596	0.23906	0.19100	0.43492	0.45008	1.75E-03	1.46E-06	1.42E-06	3.83E-06	3.78E-06	1.7570E-03
557132.45	4205462.39	72967.50749	0.09165	0.08989	0.10023	0.10129	1.74E-03	5.61E-07	6.68E-07	8.83E-07	8.50E-07	1.7473E-03
556604.50	4205341.73	72906.95744	0.08855	0.08362	0.10923	0.11113	1.74E-03	5.42E-07	6.22E-07	9.62E-07	9.33E-07	1.7460E-03
556673.03	4205413.12	72653.82043	0.08272	0.07968	0.09816	0.09968	1.74E-03	5.07E-07	5.92E-07	8.64E-07	8.36E-07	1.7397E-03
557344.60	4205371.94	72598.59814	0.09831	0.10378	0.09765	0.09786	1.74E-03	6.02E-07	7.72E-07	8.60E-07	8.21E-07	1.7386E-03
557389.28	4204151.57	72522.06361	4.82577	10.14160	3.02604	2.93568	1.73E-03	2.96E-05	7.54E-05	2.66E-05	2.46E-05	1.8900E-03
557523.58	4204214.33	72467.75272	2.19612	5.35690	1.68187	1.66317	1.73E-03	1.35E-05	3.98E-05	1.48E-05	1.40E-05	1.8145E-03
557234.20	4204117.25	72444.90833	23.20507	28.51126	8.71879	7.95321	1.73E-03	1.42E-04	2.12E-04	7.68E-05	6.67E-05	2.2296E-03
556635.94	4204620.08	72436.00479	0.28777	0.22373	0.57881	0.60149	1.73E-03	1.76E-06	1.66E-06	5.10E-06	5.05E-06	1.7452E-03
557159.91	4205457.55	72153.92613	0.09293	0.09121	0.09960	0.10059	1.72E-03	5.69E-07	6.78E-07	8.77E-07	8.44E-07	1.7279E-03
557558.09	4204231.59	71987.50653	1.88862	4.57357	1.49138	1.47885	1.72E-03	1.16E-05	3.40E-05	1.31E-05	1.24E-05	1.7921E-03
557446.71	4205318.46	71846.15591	0.10800	0.11450	0.10995	0.11103	1.72E-03	6.62E-07	8.51E-07	9.68E-07	9.32E-07	1.7210E-03
557659.74	4204361.59	71745.79839	0.88151	1.63762	0.85747	0.86246	1.72E-03	5.40E-06	1.22E-05	7.55E-06	7.24E-06	1.7475E-03
557390.91	4205349.86	71443.66502	0.09954	0.10737	0.10042	0.10070	1.71E-03	6.10E-07	7.98E-07	8.84E-07	8.45E-07	1.7111E-03
557237.45	4205434.40	71369.26724	0.09637	0.09557	0.09781	0.09858	1.71E-03	5.90E-07	7.11E-07	8.61E-07	8.27E-07	1.7092E-03
556768.94	4204359.91	71202.10935	0.68085	0.47612	2.81724	2.96184	1.70E-03	4.17E-06	3.54E-06	2.48E-05	2.49E-05	1.7595E-03
556614.22	4204656.68	70829.38290	0.25864	0.20347	0.49146	0.50938	1.69E-03	1.58E-06	1.51E-06	4.33E-06	4.27E-06	1.7050E-03
557251.80	4204115.78	70783.67929	18.46098	25.18625	7.43614	6.85814	1.69E-03	1.13E-04	1.87E-04	6.55E-05	5.75E-05	2.1156E-03
556665.50	4204548.01	70772.40763	0.34781	0.26289	0.79201	0.82665	1.69E-03	2.13E-06	1.95E-06	6.97E-06	6.94E-06	1.7099E-03
557406.74	4204152.20	70719.33686	4.39226	9.93189	2.78083	2.70297	1.69E-03	2.69E-05	7.38E-05	2.45E-05	2.27E-05	1.8386E-03
557223.99	4205442.47	70587.09823	0.09558	0.09439	0.09803	0.09886	1.69E-03	5.86E-07	7.02E-07	8.63E-07	8.30E-07	1.6904E-03
556733.75	4204417.39	70515.99797	0.53536	0.38348	1.76258	1.85544	1.69E-03	3.28E-06	2.85E-06	1.55E-05	1.56E-05	1.7230E-03
557112.71	4205473.16	70474.00936	0.08988	0.08810	0.09983	0.10099	1.68E-03	5.51E-07	6.55E-07	8.79E-07	8.47E-07	1.6877E-03
556689.47	4204499.78	70445.99175	0.40275	0.29859	1.02516	1.07376	1.68E-03	2.47E-06	2.22E-06	9.03E-06	9.01E-06	1.7068E-03
557482.26	4204186.44	70350.30296	2.72561	6.63656	1.95864	1.92635	1.68E-03	1.67E-05	4.93E-05	1.72E-05	1.62E-05	1.7813E-03
556715.35	4204449.82	70238.30251	0.47499	0.34489	1.39534	1.46642	1.68E-03	2.91E-06	2.56E-06	1.23E-05	1.23E-05	1.7092E-03
557190.61	4204554.32	70188.94920	0.09391	0.09232	0.09862	0.09953	1.68E-03	5.75E-07	6.86E-07	8.68E-07	8.35E-07	1.6809E-03
556841.51	4205485.93	70117.62549	0.07917	0.07809	0.09425	0.09559	1.68E-03	4.85E-07	5.81E-07	8.30E-07	8.02E-07	1.6789E-03
557293.45	4205410.03	70077.01468	0.09659	0.09863	0.09544	0.09582	1.68E-03	5.92E-07	7.33E-07	8.40E-07	8.04E-07	1.6782E-03
557345.14	4205381.63	70042.88008	0.09705	0.10235	0.09618	0.09638	1.67E-03	5.95E-07	7.61E-07	8.47E-07	8.09E-07	1.6775E-03
557659.74	4204343.03	69912.15886	0.93848	1.82240	0.89049	0.89404	1.67E-03	5.75E-06	1.36E-05	7.84E-06	7.50E-06	1.7060E-03
556581.99	4204729.57	69757.59795	0.21689	0.17476	0.37852	0.39084	1.67E-03	1.33E-06	1.30E-06	3.33E-06	3.28E-06	1.6769E-03
557502.71	4205293.15	69416.78113	0.11571	0.12275	0.12215	0.12372	1.66E-03	7.09E-07	9.13E-07	1.08E-06	1.04E-06	1.6632E-03
556860.00	4204237.85	69321.32790	1.43907	0.96165	9.07255	9.49901	1.66E-03	8.82E-06	7.15E-06	7.99E-05	7.97E-05	1.8328E-03
557538.50	4205262.82	69316.65482	0.11670	0.12627	0.12372	0.12534	1.66E-03	7.15E-07	9.39E-07	1.09E-06	1.05E-06	1.6609E-03
556802.96	4204300.27	69218.74701	0.89126	0.60685	4.35064	4.55007	1.65E-03	5.46E-06	4.51E-06	3.83E-05	3.82E-05	1.7412E-03
557303.68	4205406.80	69163.44225	0.09620	0.09903	0.09489	0.09531	1.65E-03	5.89E-07	7.36E-07	8.36E-07	8.00E-07	1.6564E-03
557138.38	4205471.01	69144.43272	0.09090	0.08909	0.09910	0.10019	1.65E-03	5.57E-07	6.62E-07	8.73E-07	8.41E-07	1.6559E-03
557165.84	4205464.55	69023.99298	0.09231	0.09056	0.09858	0.09955	1.65E-03	5.66E-07	6.73E-07	8.68E-07	8.35E-07	1.6530E-03
557657.16	4204329.11	68948.88373	0.99089	1.99893	0.92200	0.92443	1.65E-03	6.07E-06	1.49E-05	8.12E-06	7.76E-06	1.6851E-03
557424.81	4204152.82	68933.66278	4.01073	9.79195	2.56122	2.49382	1.65E-03	2.46E-05	7.28E-05	2.26E-05	2.09E-05	1.7888E-03
556742.99	4205461.66	68917.14294	0.07939	0.07751	0.09368	0.09508	1.65E-03	4.86E-07	5.76E-07	8.25E-07	7.98E-07	1.6502E-03
556591.74	4204693.21	68860.75142	0.23349	0.18573	0.42248	0.43685	1.65E-03	1.43E-06	1.38E-06	3.72E-06	3.67E-06	1.6564E-03
556621.89	4204619.24	68536.37711	0.27877	0.21599	0.55372	0.57470	1.64E-03	1.71E-06	1.61E-06	4.88E-06	4.82E-06	1.6515E-03
556749.84	4204379.67	68450.46363	0.60460	0.42538	2.22092	2.33536	1.64E-03	3.70E-06	3.16E-06	1.96E-05	1.96E-05	1.6824E-03
557464.26	4205325.64	68434.23213	0.10708	0.11372	0.10974	0.11088	1.64E-03	6.56E-07	8.46E-07	9.66E-07	9.30E-07	1.6394E-03
556826.10	4204269.06	68276.85217	1.07547	0.72334	5.71977	5.97235	1.63E-03	6.59E-06	5.38E-06	5.04E-05	5.01E-05	1.7447E-03
557314.99	4205405.19	68025.08694	0.09581	0.09913	0.09437	0.09460	1.63E-03	5.87E-07	7.37E-07	8.31E-07	7.94E-07	1.6292E-03
557388.21	4205366.01	67980.73432	0.09701	0.10473	0.09748	0.09769	1.63E-03	5.94E-07	7.79E-07	8.58E-07	8.20E-07	1.6282E-03
556636.56	4204583.42	67854.32252	0.30496	0.23305	0.63926	0.66475	1.62E-03	1.87E-06	1.73E-06	5.63E-06	5.58E-06	1.6369E-03
557439.78	4204154.69	67741.31100	3.70213	9.49031	2.39256	2.33330	1.62E-03	2.27E-05	7.06E-05	2.11E-05	1.96E-05	1.7533E-03
557271.60	4204112.85	67561.26824	14.49070	23.16618	6.19631	5.76936	1.62E-03	8.88E-05	1.72E-04	5.46E-05	4.84E-05	1.9791E-03
557528.79	4205283.44	67471.19288	0.11624	0.12448	0.12361	0.12506	1.61E-03	7.12E-07	9.26E-07	1.09E-06	1.05E-06	1.6167E-03
557118.10	4205480.16	67439.13385	0.08933	0.08750	0.09898	0.10008	1.61E-03	5.47E-07	6.51E-07	8.72E-07	8.40E-07	1.6151E-03
556681.60	4205437.39	67287.75925	0.08036	0.07768	0.09510	0.09658	1.61E-03	4.92E-07	5.78E-07	8.37E-07	8.10E-07	1.6113E-03
557324.14	4205403.57	67258.72696	0.09556	0.09935	0.09404	0.09425	1.61E-03	5.85E-07	7.39E-07	8.28E-07	7.91E-07	1.6108E-03
557540.83	4204201.14	67255.37056	2.15189	6.09837	1.59808	1.57774	1.61E-03	1.32E-05	4.53E-05	1.41E-05	1.32E-05	1.6937E-03
557200.30	4205460.78	67061.36943	0.09335	0.09178	0.09744	0.09832	1.60E-03	5.72E-07	6.82E-07	8.58E-07	8.25E-07	1.6061E-03
556721.48	4204420.02	66870.83681	0.50718	0.36260	1.57693	1.65634	1.60E-03	3.11E-06	2.70E-06	1.39E-05	1.39E-05	1.6322E-03
557351.06	4205391.86	66796.81049	0.09566	0.10102	0.09459	0.09478	1.60E-03	5.86E-07	7.51E-07	8.33E-07	7.95E-07	1.5998E-03
556598.76	4204655.55	66788.20316	0.25060	0.19643	0.47126	0.48790	1.60E-03	1.54E-06	1.46E-06	4.15E-06	4.09E-06	1.6079E-03
556651.73	4204545.77	66709.21994	0.33568	0.25263	0.74950	0.78093	1.59E-03	2.06E-06	1.88E-06	6.60E-06	6.55E-06	1.6118E-03
556701.32	4204454.21	66599.26231	0.44818	0.32503	1.24841	1.30877	1.59E-03	2.75E-06	2.42E-06	1.10E-05	1.10E-05	1.6193E-03
557146.99	4205476.39	66526.07803	0.09052	0.08874	0.09826	0.09927	1.59E-03	5.55E-07	6.60E-07	8.65E-07	8.33E-07	1.5933E-03
557660.77	4204308.48	66460.47450	1.05662	2.28696	0.95126	0.95168	1.59E-03	6.47E-06	1.70E-05	8.38E-06	7.99E-06	1.6287E-03
557457.85	4204158.43	66456.46223	3.33861	8.90516	2.19984	2.14980	1.59E-03	2.05E-05	6.62E-05	1.94E-05	1.80E-05	1.7128E-03
556768.94	4204340.15	66350.46501	0.69742	0.48154	2.85031	2.98821	1.59E-03	4.27E-06	3.58E-06	2.51E-05	2.51E-05	1.6442E-03
557275.14	4205433.32	66342.42299	0.09539	0.09576	0.09452	0.09505	1.59E-03	5.84E-07	7.12E-07	8.32E-07	7.98E-07	1.5889E-03
557176.07	4205469.93	66274.43039	0.09191	0.09016	0.09763	0.09857	1.58E-03	5.63E-07	6.70E-07	8.60E-07	8.27E-07	1.5873E-03
557476.58	4205331.18	66123.94412	0.10652	0.11302	0.10964	0.11080	1.58E-03	6.53E-07	8.40E-07	9.66E-07	9.30E-07	1.5842E-03
556567.09	4204728.08	65969.80665	0.21155	0.16988	0.36711	0.37878	1.58E-03	1.30E-06	1.26E-06	3.23E-06	3.18E-06	1.5861E-03
557576.36	4204215.35	65880.76631	1.84653	5.36065	1.41200	1.39755	1.57E-03	1.13E-05	3.99E-05	1.24E-05	1.17E-05	1.6503E-03
557287.73	4204110.65	65470.88023	12.30230	22.45507	5.44870	5.10616	1.57E-03	7.54E-05	1.67E-04	4.80E-05	4.28E-05	1.8983E-03
557265.99	4205441.40	65357.85294	0.09490	0.09478	0.09444	0.09508	1.56E-03	5.81E-07	7.05E-07	8.32E-07	7.98E-07	1.5654E-03
557422.67	4205359.55	65268.28471	0.09741	0.10616	0.09885	0.09905	1.56E-03	5.97E-07	7.89E-07	8.70E-07	8.31E-07	1.5634E-03
556662.77	4204514.53	65197.55648	0.36246	0.26911	0.85487	0.89191	1.56E-03	2.22E-06	2.00E-06	7.53E-06	7.48E-06	1.5779E-03
556670.37	4204499.78	65060.11507	0.37882	0.27957	0.92278	0.96364	1.56E-03	2.32E-06	2.08E-06	8.13E-06	8.09E-06	1.5759E-03
557257.91	4205446.78	64902.17279	0.09452	0.09406	0.09447	0.09514	1.55E-03	5.79E-07	6.99E-07	8.32E-07	7.98E-07	1.5545E-03
556606.99	4204618.12	64723.73494	0.26951	0.20807	0.52838	0.54770	1.55E-03	1.65E-06	1.55E-06	4.65E-06	4.60E-06	1.5597E-03
557392.52	4205379.48	64603.07083	0.09549	0.10280	0.09554	0.09576	1.54E-03	5.85E-07	7.64E-07	8.41E-07	8.04E-07	1.5474E-03
556575.46	4204688.32	64504.91102	0.22766	0.18015	0.40966	0.42322	1.54E-03	1.39E-06	1.34E-06	3.61E-06	3.55E-06	1.5520E-03
556621.95	4204584.55	64352.34107	0.29316	0.22346	0.60311	0.62622	1.54E-03	1.80E-06	1.66E-06	5.31E-06	5.25E-06	1.5524E-03
557206.76	4205467.78	64273.90609	0.09257	0.09104	0.09624	0.09715	1.54E-03	5.67E-07	6.77E-07	8.48E-07	8.15E-07	1.5394E-03
557491.59	4205331.55	64237.75899	0.10687	0.11350	0.11107	0.11245	1.54E-03	6.55E-07	8.44E-07	9.78E-07	9.44E-07	1.5391E-03
556749.84	4204359.91	64206.37244	0.61895	0.43016	2.27750	2.38889	1.53E-03	3.79E-06	3.20E-06	2.01E-05	2.00E-05	1.5820E-03
556818.67	4205497.35	64049.91865	0.07767	0.07651	0.09197	0.09331	1.53E-03	4.76E-07	5.69E-07	8.10E-07	7.83E-07	1.5338E-03
557180.91	4205475.86	63969.61598	0.09140	0.08963	0.09689	0.09782	1.53E-03	5.60E-07	6.66E-07	8.53E-07	8.21E-07	1.5322E-03
557122.94	4205490.39	63580.82582	0.08881	0.08684	0.09827	0.09933	1.52E-03	5.44E-07	6.46E-07	8.65E-07	8.34E-07	1.5229E-03
557305.33	4204108.69	63495.01747	10.43187	22.05166	4.78838	4.51428	1.52E-03	6.39E-05	1.64E-04	4.22E-05	3.79E-05	1.8258E-03
556788.04	4204300.63	63405.17025	0.81134	0.54934	3.56730	3.72772	1.52E-03	4.97E-06	4.08E-06	3.14E-05	3.13E-05	1.5875E-03
556706.58	4204425.28	63320.49484	0.47465	0.33906	1.38611	1.45246	1.51E-03	2.91E-06	2.52E-06	1.22E-05	1.22E-05	1.5436E-03
557250.91	4205455.93	63284.71652	0.09355	0.09294	0.09405	0.09474	1.51E-03	5.73E-07	6.91E-07	8.28E-07	7.95E-07	1.5158E-03
556574.58	4204674.29	63014.53377	0.23174	0.18227	0.42159	0.43561	1.51E-03	1.42E-06	1.36E-06	3.71E-06	3.66E-06	1.5166E-03
557482.17	4204156.56	62817.39202	2.97262	8.82251	1.96905	1.92685	1.50E-03	1.82E-05	6.56E-05	1.73E-05	1.62E-05	1.6190E-03
557418.37	4205374.63	62605.97976	0.09504	0.10359	0.09598	0.09621	1.50E-03	5.82E-07	7.70E-07	8.45E-07	8.07E-07	1.4997E-03
556687.30	4204453.33	62591.86880	0.42645	0.30808	1.13935	1.19154	1.50E-03	2.61E-06	2.29E-06	1.00E-05	1.00E-05	1.5213E-03
556552.94	4204723.61	62405.01416	0.20738	0.16580	0.35864	0.36980	1.49E-03	1.27E-06	1.23E-06	3.16E-06	3.10E-06	1.5006E-03
556636.84	4204540.99	62404.77146	0.32379	0.24233	0.70982	0.73825	1.49E-03	1.98E-06	1.80E-06	6.25E-06	6.19E-06	1.5081E-03
556730.74	4204379.67	62299.47369	0.55417	0.38778	1.84520	1.93459	1.49E-03	3.40E-06	2.88E-06	1.62E-05	1.62E-05	1.5281E-03

557552.00	4204184.90	62185.51649	2.13962	7.22653	1.53569	1.51330	1.49E-03	1.31E-05	5.37E-05	1.35E-05	1.27E-05	1.5797E-03
557320.73	4204107.71	62148.58369	9.12960	21.58521	4.31888	4.09028	1.49E-03	5.59E-05	1.60E-04	3.80E-05	3.43E-05	1.7745E-03
556573.71	4204662.90	61780.46737	0.23494	0.18386	0.43111	0.44550	1.48E-03	1.44E-06	1.37E-06	3.80E-06	3.74E-06	1.4873E-03
557593.62	4204203.17	61468.22832	1.79524	6.16675	1.34049	1.32520	1.47E-03	1.10E-05	4.59E-05	1.18E-05	1.11E-05	1.5492E-03
557162.07	4205488.78	61420.72640	0.09000	0.08805	0.09677	0.09771	1.47E-03	5.51E-07	6.55E-07	8.52E-07	8.20E-07	1.4712E-03
557512.59	4205335.32	61227.75536	0.10851	0.11497	0.11464	0.11620	1.46E-03	6.65E-07	8.55E-07	1.01E-06	9.75E-07	1.4672E-03
557390.37	4205397.78	61113.41603	0.09385	0.10035	0.09320	0.09341	1.46E-03	5.75E-07	7.46E-07	8.21E-07	7.84E-07	1.4639E-03
557190.61	4205483.39	60955.76466	0.09068	0.08901	0.09561	0.09656	1.46E-03	5.56E-07	6.62E-07	8.42E-07	8.10E-07	1.4601E-03
557216.45	4205476.39	60948.05638	0.09150	0.09015	0.09450	0.09530	1.46E-03	5.61E-07	6.70E-07	8.32E-07	8.00E-07	1.4599E-03
557132.45	4205496.86	60922.29810	0.08865	0.08660	0.09754	0.09864	1.46E-03	5.43E-07	6.44E-07	8.59E-07	8.28E-07	1.4593E-03
556641.87	4204519.59	60843.08185	0.33781	0.25035	0.76253	0.79343	1.45E-03	2.07E-06	1.86E-06	6.72E-06	6.66E-06	1.4718E-03
556820.72	4204253.99	60771.74451	1.04547	0.69333	5.12018	5.34134	1.45E-03	6.41E-06	5.16E-06	4.51E-05	4.48E-05	1.5543E-03
556651.27	4204499.78	60387.62450	0.35641	0.26194	0.83443	0.86906	1.44E-03	2.18E-06	1.95E-06	7.35E-06	7.29E-06	1.4624E-03
557339.80	4204105.03	60384.41368	8.03209	22.71704	3.86666	3.67702	1.44E-03	4.92E-05	1.69E-04	3.41E-05	3.09E-05	1.7266E-03
557506.32	4204156.48	60182.93538	2.67482	8.88012	1.78593	1.75000	1.44E-03	1.64E-05	6.60E-05	1.57E-05	1.47E-05	1.5516E-03
556605.93	4204579.21	60120.02756	0.28316	0.21460	0.57452	0.59562	1.44E-03	1.73E-06	1.60E-06	5.06E-06	5.00E-06	1.4506E-03
556856.78	4204221.16	60098.71283	1.41022	0.92639	8.47401	8.87014	1.44E-03	8.64E-06	6.89E-06	7.46E-05	7.44E-05	1.6013E-03
556749.84	4204340.15	60080.42980	0.63155	0.43354	2.31348	2.42084	1.44E-03	3.87E-06	3.22E-06	2.04E-05	2.03E-05	1.4841E-03
556572.83	4204645.37	59974.93547	0.24000	0.18635	0.44630	0.46125	1.43E-03	1.47E-06	1.39E-06	3.93E-06	3.87E-06	1.4444E-03
557351.06	4205423.63	59872.65402	0.09289	0.09695	0.09112	0.09160	1.43E-03	5.69E-07	7.21E-07	8.02E-07	7.69E-07	1.4342E-03
556672.40	4204457.71	59552.18776	0.40221	0.29031	1.02755	1.07230	1.42E-03	2.46E-06	2.16E-06	9.05E-06	9.00E-06	1.4463E-03
557355.93	4204104.29	59461.53945	7.22217	23.17007	3.54852	3.38549	1.42E-03	4.42E-05	1.72E-04	3.12E-05	2.84E-05	1.6977E-03
557330.06	4205436.55	59426.26507	0.09261	0.09537	0.09062	0.09110	1.42E-03	5.67E-07	7.09E-07	7.98E-07	7.64E-07	1.4235E-03
557702.02	4204294.05	59373.99797	0.99083	2.29890	0.86712	0.86599	1.42E-03	6.07E-06	1.71E-05	7.64E-06	7.27E-06	1.4575E-03
557418.37	4205392.40	59290.06207	0.09347	0.10120	0.09366	0.09378	1.42E-03	5.73E-07	7.52E-07	8.25E-07	7.87E-07	1.4203E-03
556538.04	4204723.61	59264.00973	0.20163	0.16079	0.34613	0.35662	1.42E-03	1.24E-06	1.20E-06	3.05E-06	2.99E-06	1.4252E-03
557141.79	4205500.62	59231.62518	0.08850	0.08644	0.09682	0.09789	1.42E-03	5.42E-07	6.43E-07	8.53E-07	8.21E-07	1.4189E-03
557467.36	4205373.55	59180.28397	0.09968	0.10558	0.10052	0.10144	1.41E-03	6.11E-07	7.85E-07	8.85E-07	8.51E-07	1.4179E-03
557371.34	4204105.76	59174.52297	6.49440	22.22786	3.28308	3.14232	1.41E-03	3.98E-05	1.65E-04	2.89E-05	2.64E-05	1.6750E-03
556621.38	4204540.43	58910.70109	0.30992	0.23117	0.66410	0.68950	1.41E-03	1.90E-06	1.72E-06	5.85E-06	5.79E-06	1.4236E-03
557224.53	4205481.78	58852.27338	0.09085	0.08955	0.09321	0.09397	1.41E-03	5.57E-07	6.66E-07	8.21E-07	7.89E-07	1.4098E-03
556730.74	4204359.91	58661.89391	0.56545	0.39100	1.89263	1.98036	1.40E-03	3.46E-06	2.91E-06	1.67E-05	1.66E-05	1.4420E-03
557307.99	4205450.55	58526.24608	0.09221	0.09369	0.09050	0.09093	1.40E-03	5.65E-07	6.97E-07	7.97E-07	7.63E-07	1.4020E-03
556653.04	4205455.95	58497.27590	0.07774	0.07495	0.09245	0.09386	1.40E-03	4.76E-07	5.57E-07	8.14E-07	7.88E-07	1.4011E-03
557528.75	4205342.86	58358.23169	0.10699	0.11360	0.11606	0.11785	1.40E-03	6.55E-07	8.45E-07	1.02E-06	9.89E-07	1.3986E-03
557608.84	4204193.02	58271.73553	1.75579	7.07464	1.28548	1.26967	1.39E-03	1.08E-05	5.26E-05	1.13E-05	1.07E-05	1.4784E-03
556690.81	4204418.27	58141.84171	0.44969	0.31881	1.25199	1.30805	1.39E-03	2.76E-06	2.37E-06	1.10E-05	1.10E-05	1.4171E-03
556788.04	4204280.87	58089.30601	0.82385	0.55030	3.50201	3.65245	1.39E-03	5.05E-06	4.09E-06	3.08E-05	3.06E-05	1.4593E-03
557358.06	4205430.63	58046.60111	0.09226	0.09610	0.09041	0.09070	1.39E-03	5.65E-07	7.15E-07	7.96E-07	7.61E-07	1.3905E-03
557183.07	4205495.78	58008.13901	0.08964	0.08775	0.09502	0.09589	1.39E-03	5.49E-07	6.52E-07	8.37E-07	8.05E-07	1.3896E-03
556570.20	4204627.84	57814.85714	0.24389	0.18782	0.45878	0.47411	1.38E-03	1.49E-06	1.40E-06	4.04E-06	3.98E-06	1.3930E-03
556630.20	4205444.53	57812.61024	0.07827	0.07512	0.09357	0.09499	1.38E-03	4.80E-07	5.59E-07	8.24E-07	7.97E-07	1.3847E-03
557390.40	4204105.03	57777.92582	5.75273	21.85985	2.97413	2.85540	1.38E-03	3.52E-05	1.63E-04	2.62E-05	2.40E-05	1.6292E-03
557201.37	4205492.55	57662.84335	0.08975	0.08815	0.09394	0.09479	1.38E-03	5.50E-07	6.55E-07	8.27E-07	7.95E-07	1.3813E-03
557569.26	4204170.69	57594.29939	2.07464	8.80924	1.44777	1.42483	1.38E-03	1.27E-05	6.55E-05	1.27E-05	1.20E-05	1.4798E-03
557489.98	4205373.55	57417.46306	0.10024	0.10628	0.10276	0.10382	1.37E-03	6.14E-07	7.90E-07	9.05E-07	8.71E-07	1.3758E-03
556628.57	4204514.53	57308.42618	0.32631	0.24058	0.72334	0.75141	1.37E-03	2.00E-06	1.79E-06	6.37E-06	6.31E-06	1.3865E-03
557719.04	4204291.47	57251.19005	0.95874	2.24619	0.83345	0.83208	1.37E-03	5.87E-06	1.67E-05	7.34E-06	6.98E-06	1.4056E-03
557395.75	4205416.09	57215.12007	0.09236	0.09812	0.09125	0.09178	1.37E-03	5.66E-07	7.30E-07	8.04E-07	7.70E-07	1.3707E-03
556768.94	4204300.63	57154.81759	0.72398	0.48721	2.84820	2.97219	1.37E-03	4.44E-06	3.62E-06	2.51E-05	2.49E-05	1.4244E-03
556711.64	4204379.67	57145.19992	0.50917	0.35467	1.56305	1.63412	1.37E-03	3.12E-06	2.64E-06	1.38E-05	1.37E-05	1.3994E-03
557474.36	4205383.24	57104.84967	0.09847	0.10441	0.09960	0.10055	1.37E-03	6.03E-07	7.76E-07	8.77E-07	8.44E-07	1.3683E-03
557147.17	4205507.62	56951.22643	0.08786	0.08578	0.09608	0.09714	1.36E-03	5.38E-07	6.38E-07	8.46E-07	8.15E-07	1.3643E-03
556539.17	4204688.23	56938.47106	0.21146	0.16625	0.37221	0.38367	1.36E-03	1.30E-06	1.24E-06	3.28E-06	3.22E-06	1.3702E-03
556570.20	4204614.69	56596.88045	0.24780	0.18970	0.47080	0.48656	1.35E-03	1.52E-06	1.41E-06	4.15E-06	4.08E-06	1.3642E-03
557340.83	4205446.24	56465.46731	0.09147	0.09422	0.08935	0.08974	1.35E-03	5.60E-07	7.01E-07	7.87E-07	7.53E-07	1.3527E-03
557233.68	4205488.78	56399.65294	0.09002	0.08884	0.09168	0.09245	1.35E-03	5.52E-07	6.61E-07	8.07E-07	7.76E-07	1.3511E-03
557404.34	4204102.83	56334.81062	5.32453	22.56794	2.77410	2.66780	1.35E-03	3.26E-05	1.68E-04	2.44E-05	2.24E-05	1.5940E-03
556632.17	4204499.78	56263.09143	0.33541	0.24560	0.75755	0.78709	1.35E-03	2.05E-06	1.83E-06	6.67E-06	6.60E-06	1.3622E-03
556522.40	4204722.87	56158.55861	0.19591	0.15576	0.33382	0.34366	1.34E-03	1.20E-06	1.16E-06	2.94E-06	2.88E-06	1.3507E-03
557290.76	4205469.39	56101.84883	0.09137	0.09149	0.08983	0.09040	1.34E-03	5.60E-07	6.80E-07	7.91E-07	7.59E-07	1.3440E-03
557425.12	4204106.00	55891.80071	4.67572	20.08694	2.52319	2.43460	1.34E-03	2.86E-05	1.49E-04	2.22E-05	2.04E-05	1.5568E-03
556657.50	4204454.21	55795.75403	0.38304	0.27516	0.94619	0.98520	1.33E-03	2.35E-06	2.05E-06	8.33E-06	8.27E-06	1.3549E-03
557316.60	4205460.24	55735.75744	0.09123	0.09256	0.08915	0.08957	1.33E-03	5.59E-07	6.88E-07	7.85E-07	7.52E-07	1.3352E-03
557209.99	4205497.93	55717.11414	0.08922	0.08762	0.09276	0.09358	1.33E-03	5.47E-07	6.51E-07	8.17E-07	7.85E-07	1.3348E-03
557420.52	4205413.94	55704.82704	0.09243	0.09859	0.09186	0.09223	1.33E-03	5.66E-07	7.33E-07	8.09E-07	7.74E-07	1.3346E-03
556675.91	4204424.41	55666.20346	0.42198	0.29930	1.11840	1.16622	1.33E-03	2.59E-06	2.23E-06	9.85E-06	9.79E-06	1.3552E-03
557735.54	4204291.98	55575.77550	0.92125	2.14673	0.79944	0.79809	1.33E-03	5.64E-06	1.60E-05	7.04E-06	6.70E-06	1.3639E-03
556605.09	4204539.87	55565.13283	0.29590	0.22001	0.61983	0.64243	1.33E-03	1.81E-06	1.64E-06	5.46E-06	5.39E-06	1.3426E-03
556540.05	4204668.07	55553.79998	0.21710	0.16928	0.38768	0.39970	1.33E-03	1.33E-06	1.26E-06	3.41E-06	3.35E-06	1.3374E-03
556571.95	4204599.79	55524.75857	0.25322	0.19260	0.48728	0.50367	1.33E-03	1.55E-06	1.43E-06	4.29E-06	4.23E-06	1.3389E-03
557359.68	4205443.55	55423.46887	0.09111	0.09462	0.08905	0.08953	1.32E-03	5.58E-07	7.04E-07	7.84E-07	7.51E-07	1.3278E-03
557536.29	4205359.01	55271.68928	0.10437	0.11089	0.11348	0.11499	1.32E-03	6.39E-07	8.25E-07	9.99E-07	9.65E-07	1.3248E-03
556730.74	4204340.15	55113.33628	0.57518	0.39305	1.92649	2.01170	1.32E-03	3.52E-06	2.92E-06	1.70E-05	1.69E-05	1.3578E-03
556541.80	4204654.92	54846.80010	0.22134	0.17167	0.39928	0.41174	1.31E-03	1.36E-06	1.28E-06	3.52E-06	3.46E-06	1.3208E-03
557444.18	4204105.27	54608.32463	4.24094	20.14597	2.32295	2.24595	1.31E-03	2.60E-05	1.50E-04	2.05E-05	1.88E-05	1.5206E-03
557497.52	4205387.55	54531.66448	0.09853	0.10443	0.10090	0.10206	1.30E-03	6.04E-07	7.76E-07	8.89E-07	8.56E-07	1.3068E-03
557181.45	4205510.32	54340.70688	0.08839	0.08638	0.09419	0.09520	1.30E-03	5.42E-07	6.42E-07	8.29E-07	7.99E-07	1.3019E-03
556634.48	4205465.94	54222.27808	0.07630	0.07343	0.09097	0.09235	1.30E-03	4.67E-07	5.46E-07	8.01E-07	7.75E-07	1.2988E-03
556612.74	4204514.53	54209.57300	0.31093	0.22861	0.67185	0.69668	1.30E-03	1.90E-06	1.70E-06	5.92E-06	5.85E-06	1.3113E-03
557152.02	4205517.85	54020.25035	0.08686	0.08476	0.09504	0.09614	1.29E-03	5.32E-07	6.30E-07	8.37E-07	8.07E-07	1.2942E-03
556711.64	4204359.91	54008.06485	0.51811	0.35681	1.60219	1.67229	1.29E-03	3.17E-06	2.65E-06	1.41E-05	1.40E-05	1.3251E-03
557300.45	4205475.86	53940.31890	0.09048	0.09077	0.08861	0.08916	1.29E-03	5.54E-07	6.75E-07	7.80E-07	7.48E-07	1.2923E-03
557752.04	4204291.98	53932.33834	0.88696	2.05373	0.76790	0.76654	1.29E-03	5.43E-06	1.53E-05	6.76E-06	6.43E-06	1.3232E-03
556854.62	4204207.71	53841.76928	1.38840	0.89971	8.22985	8.61046	1.29E-03	8.51E-06	6.69E-06	7.25E-05	7.23E-05	1.4471E-03
557274.60	4205487.16	53576.21032	0.08967	0.08930	0.08892	0.08951	1.28E-03	5.49E-07	6.64E-07	7.83E-07	7.51E-07	1.2835E-03
557477.59	4205404.24	53572.32319	0.09595	0.10140	0.09657	0.09747	1.28E-03	5.88E-07	7.54E-07	8.50E-07	8.18E-07	1.2837E-03
556815.81	4205531.62	53562.02503	0.07431	0.07328	0.08802	0.08932	1.28E-03	4.55E-07	5.45E-07	7.75E-07	7.50E-07	1.2830E-03
557324.14	4205468.86	53485.88656	0.09042	0.09169	0.08810	0.08852	1.28E-03	5.54E-07	6.82E-07	7.76E-07	7.43E-07	1.2814E-03
557479.38	4204110.40	53336.91474	3.48605	17.64330	2.00323	1.94517	1.28E-03	2.14E-05	1.31E-04	1.76E-05	1.63E-05	1.4616E-03
557458.12	4204103.07	53304.95035	3.97764	21.05204	2.18940	2.11912	1.27E-03	2.44E-05	1.57E-04	1.93E-05	1.78E-05	1.4923E-03
556568.45	4204581.38	53164.75016	0.25609	0.19303	0.49760	0.51415	1.27E-03	1.57E-06	1.44E-06	4.38E-06	4.31E-06	1.2827E-03
557215.91	4205507.09	53152.10277	0.08824	0.08668	0.09144	0.09217	1.27E-03	5.41E-07	6.45E-07	8.05E-07	7.73E-07	1.2734E-03
556788.04	4204261.11	53132.54476	0.83354	0.54933	3.44255	3.58434	1.27E-03	5.11E-06	4.08E-06	3.03E-05	3.01E-05	1.3398E-03
557770.08	4204304.36	53097.57325	0.82269	1.80280	0.72293	0.72227	1.27E-03	5.04E-06	1.34E-05	6.37E-06	6.06E-06	1.3002E-03
556641.72	4204457.71	53084.11215	0.36121	0.25925	0.85910	0.89277	1.27E-03	2.21E-06	1.93E-06	7.57E-06	7.49E-06	1.2882E-03
556692.54	4204379.67	52845.83988	0.46918	0.32563	1.34526	1.40263	1.26E-03	2.87E-06	2.42E-06	1.18E-05	1.18E-05	1.2923E-03
556539.17	4204635.64	52843.08971	0.22485	0.17287	0.41003	0.42277	1.26E-03	1.38E-06	1.29E-06	3.61E-06	3.55E-06	1.2731E-03
557544.90	4205371.40	52783.74853	0.10237	0.10886	0.11201	0.11361	1.26E-03	6.27E-07	8.09E-07	9.86E-07	9.53E-07	1.2652E-03
556506.01	4204718.40	52768.22640	0.19069	0.15093	0.32319	0.33244	1.26E-03	1.17E-06	1.12E-06	2.85E-06	2.79E-06	1.2694E-03
556768.94	4204280.87	52737.67390	0.73290	0.48696	2.82386	2.94088	1.26E-03	4.49E-06	3.62E-06	2.49E-05	2.47E-05	1.3184E-03
556613.07	4204499.78	52650.65157	0.31587	0.23055	0.69047	0.71584	1.26E-03	1.94E-06	1.71E-06	6.08E-06	6.01E-06	1.2744E-03
556659.25	4204427.03	52621.57053	0.39538	0.28003	1.00072	1.04121	1.26E-03	2.42E-06	2.08E-06	8.81E-06	8.74E-06	1.2800E-03
556749.84	4204300.63	52285.56133	0.65134	0.43634	2.33932	2.43724	1.25E-03	3.99E-06	3.24E-06	2.06E-05	2.05E-05	1.2982E-03
557174.45	4205521.62	51996.06522	0.08699	0.08492	0.09380	0.09484	1.24E-03	5.33E-07	6.31E-07	8.26E-07	7.96E-07	1.2458E-03
557498.45	4204109.67	51960.72542	3.19590	18.25107	1.85861	1.80732	1.24E-03	1.96E-05	1.36E-04	1.64E-05	1.52E-05	1.4290E-03
557502.90	4205402.09	51909.70667	0.09679	0.10251	0.09924	0.10014	1.24E-03	5.93E-07	7.62E-07	8.74E-07	8.40E-07	1.2440E-03
556568.45	4204567.36	51850.66819	0.25979	0.19456	0.50968	0.52658	1.24E-03	1.59E-06	1.45E-06	4.49E-06	4.42E-06	1.2515E-03
556644.48	4205484.50	51768.61021	0.07480	0.07220	0.08947	0.09087	1.24E-03	4.58E-07	5.37E-07	7.88E-07	7.63E-07	1.2401E-03
557309.06	4205483.93	51703.97891	0.08946	0.08987	0.08737	0.08789	1.24E-03	5.48E-07	6.68E-07	7.69E-07	7.38E-07	1.2388E-03
556845.79	4205544.47	51615.81316	0.07389	0.07297	0.08774	0.08899	1.23E-03	4.53E-07	5.43E-07	7.73E-07	7.47E-07	1.2364E-03
556538.30	4204621.61	51588.95905	0.22778	0.17403	0.41884	0.43183	1.23E-03	1.40E-06	1.29E-06	3.69E-06	3.62E-06	1.2433E-03
557285.37	4205496.32	50992.19308	0.08857	0.08842	0.08746	0.08802	1.22E-03	5.43E-07	6.57E-07	7.70E-07	7.39E-07	1.2217E-03
556711.64	4204340.15	50940.24144	0.52568	0.35799	1.63219	1.70061	1.22E-03	3.22E-06	2.66E-06	1.44E-05	1.43E-05	1.2523E-03
556570.20	4204554.21	50926.57317	0.26442	0.19687	0.52439	0.54179	1.22E-03	1.62E-06	1.46E-06	4.62E-06	4.55E-06	1.2297E-03
556614.49	4205473.08	50798.32176	0.07512	0.07213	0.08989	0.09129	1.21E-03	4.60E-07	5.36E-07	7.92E-07	7.66E-07	1.2169E-03
557537.32	4204117.00	50774.26298	2.65354	18.05990	1.61377	1.57495	1.21E-03	1.63E-05	1.34E-04	1.42E-05	1.32E-05	1.3918E-03
557512.39	4204107.47	50772.98926	3.02855	20.01285	1.76647	1.71891	1.21E-03	1.86E-05	1.49E-04	1.56E-05	1.44E-05	1.4111E-03

556625.95	4204461.22	50633.71576	0.34110	0.24468	0.78397	0.81322	1.21E-03	2.09E-06	1.82E-06	6.90E-06	6.82E-06	1.2281E-03
556537.42	4204610.22	50534.44949	0.22995	0.17479	0.42554	0.43869	1.21E-03	1.41E-06	1.30E-06	3.75E-06	3.68E-06	1.2182E-03
556646.98	4204427.03	50340.79213	0.37778	0.26708	0.92845	0.96447	1.20E-03	2.31E-06	1.99E-06	8.18E-06	8.09E-06	1.2240E-03
557258.99	4205509.24	50214.66554	0.08761	0.08677	0.08775	0.08837	1.20E-03	5.37E-07	6.45E-07	7.73E-07	7.42E-07	1.2031E-03
557168.53	4205530.78	50191.44234	0.08587	0.08376	0.09350	0.09452	1.20E-03	5.26E-07	6.23E-07	8.23E-07	7.93E-07	1.2026E-03
556692.54	4204359.91	50061.37363	0.47609	0.32686	1.37651	1.43319	1.20E-03	2.92E-06	2.43E-06	1.21E-05	1.20E-05	1.2263E-03
557552.44	4205387.55	50030.13383	0.09992	0.10632	0.10935	0.11079	1.20E-03	6.12E-07	7.91E-07	9.63E-07	9.30E-07	1.1993E-03
557604.06	4204138.27	49827.33195	1.98185	19.55732	1.30248	1.27842	1.19E-03	1.21E-05	1.45E-04	1.15E-05	1.07E-05	1.3709E-03
556500.80	4204683.39	49703.87140	0.19607	0.15289	0.33825	0.34790	1.19E-03	1.20E-06	1.14E-06	2.98E-06	2.92E-06	1.1965E-03
557657.35	4204157.58	49690.27259	1.64606	14.20900	1.13459	1.11759	1.19E-03	1.01E-05	1.06E-04	9.99E-06	9.38E-06	1.3230E-03
557640.48	4204150.98	49607.27218	1.73847	17.57549	1.18126	1.16232	1.19E-03	1.07E-05	1.31E-04	1.04E-05	9.75E-06	1.3474E-03
557556.39	4204116.27	49499.05703	2.46582	21.20025	1.51264	1.47768	1.18E-03	1.51E-05	1.58E-04	1.33E-05	1.24E-05	1.3818E-03
556593.97	4204499.78	49426.21644	0.29763	0.21665	0.63146	0.65334	1.18E-03	1.82E-06	1.61E-06	5.56E-06	5.48E-06	1.1961E-03
556594.68	4204498.61	49420.83910	0.29858	0.21724	0.63463	0.65665	1.18E-03	1.83E-06	1.62E-06	5.59E-06	5.51E-06	1.1960E-03
556493.35	4204699.78	49391.80481	0.18963	0.14868	0.32278	0.33183	1.18E-03	1.16E-06	1.11E-06	2.84E-06	2.78E-06	1.1887E-03
556673.44	4204379.67	49167.73761	0.43335	0.29993	1.17185	1.21870	1.18E-03	2.65E-06	2.23E-06	1.03E-05	1.02E-05	1.2008E-03
557587.92	4204126.54	49064.65140	2.14040	22.67983	1.36509	1.33725	1.17E-03	1.31E-05	1.69E-04	1.20E-05	1.12E-05	1.3779E-03
557621.66	4204139.74	48984.50203	1.86784	22.32420	1.23806	1.21613	1.17E-03	1.14E-05	1.66E-04	1.09E-05	1.02E-05	1.3696E-03
556536.54	4204592.69	48954.88808	0.23330	0.17594	0.43605	0.44945	1.17E-03	1.43E-06	1.31E-06	3.84E-06	3.77E-06	1.1807E-03
556749.84	4204280.87	48746.54507	0.65914	0.43639	2.34114	2.43422	1.17E-03	4.04E-06	3.24E-06	2.06E-05	2.04E-05	1.2137E-03
556768.94	4204261.11	48649.14662	0.74006	0.48563	2.80072	2.91129	1.16E-03	4.53E-06	3.61E-06	2.47E-05	2.44E-05	1.2203E-03
556730.74	4204300.63	48525.23676	0.59074	0.39453	1.96496	2.04360	1.16E-03	3.62E-06	2.93E-06	1.73E-05	1.71E-05	1.2011E-03
557570.32	4204114.07	48364.79367	2.35035	26.48107	1.44517	1.41241	1.16E-03	1.44E-05	1.97E-04	1.27E-05	1.19E-05	1.3921E-03
557268.14	4205516.24	48327.04601	0.08682	0.08609	0.08658	0.08717	1.16E-03	5.32E-07	6.40E-07	7.62E-07	7.31E-07	1.1580E-03
556817.49	4204215.24	48190.83410	1.03670	0.66664	4.74123	4.93638	1.15E-03	6.35E-06	4.96E-06	4.18E-05	4.14E-05	1.2465E-03
556822.95	4205555.89	48130.45896	0.07228	0.07137	0.08543	0.08664	1.15E-03	4.43E-07	5.31E-07	7.52E-07	7.27E-07	1.1531E-03
556496.33	4204661.79	47614.79675	0.19840	0.15324	0.34547	0.35523	1.14E-03	1.22E-06	1.14E-06	3.04E-06	2.98E-06	1.1467E-03
556564.01	4204528.42	47602.80963	0.26582	0.19540	0.53182	0.54898	1.14E-03	1.63E-06	1.45E-06	4.68E-06	4.61E-06	1.1504E-03
556608.42	4204459.46	47582.85314	0.32192	0.23021	0.71729	0.74254	1.14E-03	1.97E-06	1.71E-06	6.32E-06	6.23E-06	1.1538E-03
556628.58	4204429.66	47552.39451	0.35263	0.24907	0.83129	0.86168	1.14E-03	2.16E-06	1.85E-06	7.32E-06	7.23E-06	1.1554E-03
557274.60	4205518.93	47484.35080	0.08650	0.08586	0.08599	0.08658	1.14E-03	5.30E-07	6.38E-07	7.57E-07	7.27E-07	1.1378E-03
556692.54	4204340.15	47378.00730	0.48196	0.32743	1.40195	1.45740	1.13E-03	2.95E-06	2.43E-06	1.23E-05	1.22E-05	1.1626E-03
557244.99	4205527.55	47313.01688	0.08605	0.08486	0.08756	0.08830	1.13E-03	5.27E-07	6.31E-07	7.71E-07	7.41E-07	1.1337E-03
557561.59	4205404.78	47195.49668	0.09740	0.10371	0.10687	0.10839	1.13E-03	5.97E-07	7.71E-07	9.41E-07	9.10E-07	1.1315E-03
556533.91	4204575.16	47193.61155	0.23540	0.17610	0.44335	0.45680	1.13E-03	1.44E-06	1.31E-06	3.90E-06	3.83E-06	1.1387E-03
556800.10	4205557.32	46957.07830	0.07162	0.07064	0.08433	0.08552	1.12E-03	4.39E-07	5.25E-07	7.43E-07	7.18E-07	1.1250E-03
556673.44	4204359.91	46686.76018	0.43870	0.30055	1.19688	1.24316	1.12E-03	2.69E-06	2.23E-06	1.05E-05	1.04E-05	1.1420E-03
556496.33	4204643.16	46473.27107	0.20195	0.15479	0.35516	0.36517	1.11E-03	1.24E-06	1.15E-06	3.13E-06	3.06E-06	1.1196E-03
556849.24	4204190.49	46453.31993	1.32651	0.84394	7.65414	7.99790	1.11E-03	8.13E-06	6.28E-06	6.74E-05	6.71E-05	1.2594E-03
556564.01	4204514.39	46343.16377	0.26874	0.19628	0.54211	0.55945	1.11E-03	1.65E-06	1.46E-06	4.77E-06	4.69E-06	1.1205E-03
556533.91	4204562.01	46155.25296	0.23797	0.17699	0.45149	0.46511	1.10E-03	1.46E-06	1.32E-06	3.98E-06	3.90E-06	1.1140E-03
556654.34	4204379.67	45984.55018	0.40115	0.27710	1.03082	1.06943	1.10E-03	2.46E-06	2.06E-06	9.08E-06	8.97E-06	1.1219E-03
556596.15	4204459.46	45764.12340	0.30900	0.22070	0.67428	0.69711	1.09E-03	1.89E-06	1.64E-06	5.94E-06	5.85E-06	1.1094E-03
556614.55	4204431.42	45614.83404	0.33507	0.23655	0.76757	0.79440	1.09E-03	2.05E-06	1.76E-06	6.76E-06	6.67E-06	1.1077E-03
556749.84	4204261.11	45573.34690	0.66660	0.43636	2.34450	2.43291	1.09E-03	4.08E-06	3.24E-06	2.06E-05	2.04E-05	1.1379E-03
556730.74	4204280.87	45552.02668	0.59703	0.39443	1.97537	2.05029	1.09E-03	3.66E-06	2.93E-06	1.74E-05	1.72E-05	1.1302E-03
557254.68	4205535.08	45474.10668	0.08529	0.08419	0.08642	0.08708	1.09E-03	5.23E-07	6.26E-07	7.61E-07	7.31E-07	1.0897E-03
556663.04	4205528.77	45329.22323	0.07124	0.06917	0.08592	0.08724	1.08E-03	4.36E-07	5.14E-07	7.57E-07	7.32E-07	1.0861E-03
556711.64	4204300.63	45296.40929	0.53789	0.35857	1.67237	1.73596	1.08E-03	3.30E-06	2.67E-06	1.47E-05	1.46E-05	1.1181E-03
556535.67	4204547.11	45212.90302	0.24188	0.17876	0.46349	0.47744	1.08E-03	1.48E-06	1.33E-06	4.08E-06	4.01E-06	1.0918E-03
556831.52	4205574.46	44626.80493	0.07087	0.07003	0.08372	0.08490	1.07E-03	4.34E-07	5.21E-07	7.37E-07	7.12E-07	1.0693E-03
556494.84	4204616.35	44614.39979	0.20605	0.15616	0.36696	0.37720	1.07E-03	1.26E-06	1.16E-06	3.23E-06	3.17E-06	1.0754E-03
556673.44	4204340.15	44284.01362	0.44312	0.30060	1.21751	1.26279	1.06E-03	2.71E-06	2.24E-06	1.07E-05	1.06E-05	1.0849E-03
556788.04	4204221.59	44243.68395	0.84478	0.54237	3.36912	3.49670	1.06E-03	5.18E-06	4.03E-06	2.97E-05	2.93E-05	1.1259E-03
556583.00	4204460.34	44053.36931	0.29576	0.21111	0.63166	0.65218	1.05E-03	1.81E-06	1.57E-06	5.56E-06	5.47E-06	1.0676E-03
556654.34	4204359.91	43753.69786	0.40526	0.27728	1.05073	1.08883	1.05E-03	2.48E-06	2.06E-06	9.25E-06	9.14E-06	1.0689E-03
556598.77	4204431.42	43432.46483	0.31709	0.22361	0.70585	0.72929	1.04E-03	1.94E-06	1.66E-06	6.22E-06	6.12E-06	1.0542E-03
556532.16	4204528.71	43316.64660	0.24265	0.17783	0.46765	0.48144	1.04E-03	1.49E-06	1.32E-06	4.12E-06	4.04E-06	1.0465E-03
556635.24	4204379.67	43207.20198	0.37216	0.25678	0.91413	0.94621	1.03E-03	2.28E-06	1.91E-06	8.05E-06	7.94E-06	1.0531E-03
556711.64	4204280.87	42705.81832	0.54259	0.35815	1.68428	1.74486	1.02E-03	3.32E-06	2.66E-06	1.48E-05	1.46E-05	1.0564E-03
556730.74	4204261.11	42699.47441	0.60191	0.39357	1.98004	2.05091	1.02E-03	3.69E-06	2.93E-06	1.74E-05	1.72E-05	1.0620E-03
556692.54	4204300.63	42436.97460	0.49126	0.32725	1.43822	1.48990	1.01E-03	3.01E-06	2.43E-06	1.27E-05	1.25E-05	1.0451E-03
556565.47	4204465.60	42302.68990	0.27867	0.19915	0.57826	0.59614	1.01E-03	1.71E-06	1.48E-06	5.09E-06	5.00E-06	1.0246E-03
556532.16	4204514.68	42223.87110	0.24479	0.17832	0.47508	0.48895	1.01E-03	1.50E-06	1.33E-06	4.18E-06	4.10E-06	1.0205E-03
556673.44	4204320.39	42039.48358	0.44695	0.30040	1.23480	1.27873	1.01E-03	2.74E-06	2.23E-06	1.09E-05	1.07E-05	1.0316E-03
556489.63	4204585.81	41956.05178	0.20810	0.15564	0.37452	0.38471	1.00E-03	1.27E-06	1.16E-06	3.30E-06	3.23E-06	1.0120E-03
556654.34	4204340.15	41604.24890	0.40860	0.27704	1.06743	1.10468	9.95E-04	2.50E-06	2.06E-06	9.40E-06	9.27E-06	1.0178E-03
556631.63	4205541.62	41524.23285	0.06947	0.06724	0.08396	0.08517	9.93E-04	4.26E-07	5.00E-07	7.39E-07	7.15E-07	9.9506E-04
556533.91	4204501.54	41422.28062	0.24793	0.17962	0.48521	0.49930	9.90E-04	1.52E-06	1.34E-06	4.27E-06	4.19E-06	1.0016E-03
556755.84	4205578.74	41371.79303	0.06887	0.06778	0.08100	0.08216	9.89E-04	4.22E-07	5.04E-07	7.13E-07	6.89E-07	9.9137E-04
556671.60	4205557.32	41327.44717	0.06900	0.06722	0.08288	0.08414	9.88E-04	4.23E-07	5.00E-07	7.30E-07	7.06E-07	9.9034E-04
556768.94	4204221.59	41221.01332	0.74817	0.47951	2.76544	2.86366	9.85E-04	4.58E-06	3.57E-06	2.44E-05	2.40E-05	1.0420E-03
556635.24	4204359.91	41197.89761	0.37532	0.25667	0.93001	0.96159	9.85E-04	2.30E-06	1.91E-06	8.19E-06	8.07E-06	1.0053E-03
556582.12	4204427.91	41034.59641	0.29998	0.21106	0.65048	0.67085	9.81E-04	1.84E-06	1.57E-06	5.73E-06	5.63E-06	9.9574E-04
556650.19	4205553.04	40885.51910	0.06890	0.06692	0.08320	0.08439	9.77E-04	4.22E-07	4.98E-07	7.33E-07	7.08E-07	9.7977E-04
556616.14	4204379.67	40752.47629	0.34596	0.23860	0.81613	0.84296	9.74E-04	2.12E-06	1.77E-06	7.19E-06	7.07E-06	9.9239E-04
556549.69	4204463.85	40325.79106	0.26534	0.18936	0.53917	0.55502	9.64E-04	1.63E-06	1.41E-06	4.75E-06	4.66E-06	9.7647E-04
556491.25	4204556.28	40310.30425	0.21306	0.15746	0.38907	0.39951	9.64E-04	1.31E-06	1.17E-06	3.43E-06	3.35E-06	9.7292E-04
556788.04	4204201.83	40216.65190	0.84609	0.53649	3.35720	3.47804	9.61E-04	5.18E-06	3.99E-06	2.96E-05	2.92E-05	1.0293E-03
556692.54	4204280.87	40121.67994	0.49454	0.32649	1.44897	1.49814	9.59E-04	3.03E-06	2.43E-06	1.28E-05	1.26E-05	9.8994E-04
556711.64	4204261.11	40112.47175	0.54553	0.35675	1.68875	1.74582	9.59E-04	3.34E-06	2.65E-06	1.49E-05	1.46E-05	9.9445E-04
556844.94	4204171.11	39946.88645	1.27470	0.79559	7.33749	7.65534	9.55E-04	7.81E-06	5.92E-06	6.46E-05	6.42E-05	1.0976E-03
556673.44	4204300.63	39902.06400	0.45007	0.29988	1.24827	1.29048	9.54E-04	2.76E-06	2.23E-06	1.10E-05	1.08E-05	9.8071E-04
556654.34	4204320.39	39558.56958	0.41130	0.27651	1.08112	1.11720	9.46E-04	2.52E-06	2.06E-06	9.52E-06	9.37E-06	9.6916E-04
556802.96	4204189.41	39467.90692	0.93351	0.58773	3.96726	4.11422	9.44E-04	5.72E-06	4.37E-06	3.49E-05	3.45E-05	1.0231E-03
556635.24	4204340.15	39266.14747	0.37783	0.25626	0.94340	0.97424	9.39E-04	2.31E-06	1.91E-06	8.31E-06	8.18E-06	9.5940E-04
556488.09	4204541.08	38965.99436	0.21301	0.15644	0.39039	0.40067	9.32E-04	1.30E-06	1.16E-06	3.44E-06	3.36E-06	9.4079E-04
556749.84	4204221.59	38949.48515	0.67056	0.42974	2.31885	2.39600	9.31E-04	4.11E-06	3.20E-06	2.04E-05	2.01E-05	9.7896E-04
556616.14	4204359.91	38935.53274	0.34836	0.23831	0.82874	0.85508	9.31E-04	2.13E-06	1.77E-06	7.30E-06	7.18E-06	9.4918E-04
556561.96	4204426.16	38674.38937	0.28053	0.19721	0.59003	0.60730	9.25E-04	1.72E-06	1.47E-06	5.20E-06	5.10E-06	9.3803E-04
556492.52	4204527.79	38657.66628	0.21720	0.15873	0.40191	0.41250	9.24E-04	1.33E-06	1.18E-06	3.54E-06	3.46E-06	9.3367E-04
556597.04	4204379.67	38559.56981	0.32221	0.22227	0.73281	0.75537	9.22E-04	1.97E-06	1.65E-06	6.45E-06	6.34E-06	9.3823E-04
556728.71	4205591.59	38518.79786	0.06730	0.06614	0.07956	0.08071	9.21E-04	4.12E-07	4.92E-07	7.01E-07	6.77E-07	9.2312E-04
556525.15	4204469.98	38193.95502	0.24529	0.17541	0.48177	0.49500	9.13E-04	1.50E-06	1.30E-06	4.24E-06	4.15E-06	9.2427E-04
556643.05	4205573.03	37896.35400	0.06714	0.06525	0.08131	0.08244	9.06E-04	4.11E-07	4.85E-07	7.16E-07	6.92E-07	9.0826E-04
556673.44	4204280.87	37843.49793	0.45240	0.29901	1.25765	1.29776	9.05E-04	2.77E-06	2.22E-06	1.11E-05	1.09E-05	9.3165E-04
556692.54	4204261.11	37833.18638	0.49654	0.32509	1.45396	1.50019	9.04E-04	3.04E-06	2.42E-06	1.28E-05	1.26E-05	9.3530E-04
556768.94	4204201.83	37812.21682	0.74896	0.47478	2.75487	2.84653	9.04E-04	4.59E-06	3.53E-06	2.43E-05	2.39E-05	9.6021E-04
556654.34	4204300.63	37615.84913	0.41340	0.27575	1.09179	1.12641	8.99E-04	2.53E-06	2.05E-06	9.61E-06	9.45E-06	9.2290E-04
556711.64	4204241.35	37599.15727	0.54716	0.35473	1.68804	1.74120	8.99E-04	3.35E-06	2.64E-06	1.49E-05	1.46E-05	9.3432E-04
556770.12	4205607.29	37487.26533	0.06685	0.06596	0.07833	0.07935	8.96E-04	4.10E-07	4.90E-07	6.90E-07	6.66E-07	8.9843E-04
556745.85	4205603.01	37421.98400	0.06672	0.06570	0.07837	0.07951	8.95E-04	4.09E-07	4.89E-07	6.90E-07	6.67E-07	8.9687E-04
556635.24	4204320.39	37412.00421	0.37974	0.25557	0.95425	0.98408	8.94E-04	2.33E-06	1.90E-06	8.40E-06	8.26E-06	9.1526E-04
556616.14	4204340.15	37185.50620	0.35022	0.23777	0.83933	0.86500	8.89E-04	2.15E-06	1.77E-06	7.39E-06	7.26E-06	9.0752E-04
556730.74	4204221.59	36982.97319	0.60471	0.38802	1.96712	2.02829	8.84E-04	3.70E-06	2.89E-06	1.73E-05	1.70E-05	9.2505E-04
556486.19	4204511.32	36958.22996	0.21495	0.15606	0.39793	0.40809	8.84E-04	1.32E-06	1.16E-06	3.50E-06	3.42E-06	8.9293E-04
556597.04	4204359.91	36910.38636	0.32402	0.22186	0.74278	0.76487	8.82E-04	1.99E-06	1.65E-06	6.54E-06	6.42E-06	8.9898E-04
556577.94	4204379.67	36605.29686	0.30069	0.20761	0.66140	0.68047	8.75E-04	1.84E-06	1.54E-06	5.82E-06	5.71E-06	8.9001E-04
556788.04	4204182.07	36429.59198	0.84440	0.52906	3.35753	3.47086	8.71E-04	5.17E-06	3.93E-06	2.96E-05	2.91E-05	9.3869E-04
556547.06	4204414.76	36336.20268	0.26797	0.18765	0.55416	0.56937	8.69E-04	1.64E-06	1.40E-06	4.88E-06	4.78E-06	8.8135E-04
556558.84	4204399.43	36300.63392	0.27991	0.19484	0.59257	0.60910	8.68E-04	1.71E-06	1.45E-06	5.22E-06	5.11E-06	8.8130E-04
556487.45	4204496.76	36233.86127	0.21706	0.15676	0.40453	0.41474	8.66E-04	1.33E-06	1.17E-06	3.56E-06	3.48E-06	8.7575E-04
556522.52	4204441.94	36005.63306	0.24574	0.17393	0.48655	0.49936	8.61E-04	1.51E-06	1.29E-06	4.28E-06	4.19E-06	8.7203E-04
556749.84	4204201.83	35950.88367	0.67046	0.42557	2.30734	2.37832	8.59E-04	4.11E-06	3.16E-06	2.03E-05	2.00E-05	9.0699E-04
556673.44	4204261.11	35813.80121	0.45371	0.29768	1.26228	1.29992	8.56E-04	2.78E-06	2.21E-06	1.11E-05	1.09E-05	8.8319E-04
556654.34	4204280.87	35792.58191	0.41509	0.27491	1.09974	1.13261	8.56E-04	2.54E-06	2.04E-06	9.68E-06	9.50E-06	8.7944E-04
556635.24	4204300.63	35641.39476	0.38112	0.25470	0.96255	0.99112	8.52E-04	2.33E-06	1.89E-06	8.48E-06	8.32E-06	8.7307E-04
556692.54	4204241.35	35614.27929	0.49750	0.32324	1.45420	1.49711	8.51E-04	3.05E-06	2.40E-06	1.28E-05	1.26E-05	8.8222E-04

556616.14	4204320.39	35505.38221	0.35156	0.23703	0.84786	0.87265	8.49E-04	2.15E-06	1.76E-06	7.47E-06	7.32E-06	8.6750E-04
556597.04	4204340.15	35325.90414	0.32537	0.22128	0.75113	0.77261	8.45E-04	1.99E-06	1.65E-06	6.61E-06	6.48E-06	8.6124E-04
556488.09	4204479.03	35237.29804	0.21884	0.15706	0.41078	0.42096	8.42E-04	1.34E-06	1.17E-06	3.62E-06	3.53E-06	8.5205E-04
556711.64	4204221.59	35140.46646	0.54732	0.35202	1.68198	1.73077	8.40E-04	3.35E-06	2.62E-06	1.48E-05	1.45E-05	8.7538E-04
556577.94	4204359.91	35092.59665	0.30200	0.20711	0.66917	0.68780	8.39E-04	1.85E-06	1.54E-06	5.89E-06	5.77E-06	8.5398E-04
556558.84	4204379.67	34854.37130	0.28117	0.19441	0.59969	0.61589	8.33E-04	1.72E-06	1.45E-06	5.28E-06	5.17E-06	8.4685E-04
556539.74	4204399.43	34613.35335	0.26254	0.18299	0.54043	0.55458	8.27E-04	1.61E-06	1.36E-06	4.76E-06	4.65E-06	8.3985E-04
556768.94	4204182.07	34606.23825	0.74784	0.46922	2.74905	2.83335	8.27E-04	4.58E-06	3.49E-06	2.42E-05	2.38E-05	8.8336E-04
556519.25	4204424.23	34527.85375	0.24431	0.17192	0.48495	0.49728	8.25E-04	1.50E-06	1.28E-06	4.27E-06	4.17E-06	8.3665E-04
556730.74	4204201.83	34293.95974	0.60378	0.38420	1.95493	2.01052	8.20E-04	3.70E-06	2.86E-06	1.72E-05	1.69E-05	8.6048E-04
556737.28	4205625.86	34272.53386	0.06481	0.06386	0.07601	0.07708	8.19E-04	3.97E-07	4.75E-07	6.69E-07	6.47E-07	8.2151E-04
556654.34	4204261.11	34011.88136	0.41606	0.27377	1.10399	1.13482	8.13E-04	2.55E-06	2.04E-06	9.72E-06	9.52E-06	8.3692E-04
556635.24	4204280.87	33961.12892	0.38207	0.25373	0.96837	0.99545	8.12E-04	2.34E-06	1.89E-06	8.53E-06	8.35E-06	8.3299E-04
556483.02	4204465.10	33929.33238	0.21637	0.15459	0.40601	0.41576	8.11E-04	1.33E-06	1.15E-06	3.58E-06	3.49E-06	8.2066E-04
556616.14	4204300.63	33913.02156	0.35251	0.23620	0.85444	0.87815	8.11E-04	2.16E-06	1.76E-06	7.52E-06	7.37E-06	8.2954E-04
556673.44	4204241.35	33851.02034	0.45424	0.29605	1.26282	1.29768	8.09E-04	2.78E-06	2.20E-06	1.11E-05	1.09E-05	8.3624E-04
556597.04	4204320.39	33811.74815	0.32634	0.22057	0.75785	0.77856	8.08E-04	2.00E-06	1.64E-06	6.67E-06	6.53E-06	8.2515E-04
556577.94	4204340.15	33647.34993	0.30295	0.20650	0.67564	0.69371	8.04E-04	1.86E-06	1.54E-06	5.95E-06	5.82E-06	8.1954E-04
556558.84	4204359.91	33457.37406	0.28206	0.19385	0.60566	0.62144	8.00E-04	1.73E-06	1.44E-06	5.33E-06	5.21E-06	8.1355E-04
556692.54	4204221.59	33445.68355	0.49733	0.32091	1.44949	1.48868	8.00E-04	3.05E-06	2.39E-06	1.28E-05	1.25E-05	8.3025E-04
556539.74	4204379.67	33279.52204	0.26343	0.18251	0.54598	0.55981	7.96E-04	1.61E-06	1.36E-06	4.81E-06	4.70E-06	8.0806E-04
556749.84	4204182.07	33136.15583	0.66911	0.42096	2.29643	2.36054	7.92E-04	4.10E-06	3.13E-06	2.02E-05	1.98E-05	8.3942E-04
556520.64	4204399.43	33046.75527	0.24656	0.17216	0.49449	0.50665	7.90E-04	1.51E-06	1.28E-06	4.35E-06	4.25E-06	8.0142E-04
556788.04	4204162.31	32958.99631	0.84084	0.52086	3.37039	3.47479	7.88E-04	5.15E-06	3.87E-06	2.97E-05	2.92E-05	8.5578E-04
556480.49	4204450.54	32872.02646	0.21543	0.15324	0.40515	0.41462	7.86E-04	1.32E-06	1.14E-06	3.57E-06	3.48E-06	7.9535E-04
556711.64	4204201.83	32773.93022	0.54631	0.34884	1.67156	1.71554	7.83E-04	3.35E-06	2.59E-06	1.47E-05	1.44E-05	8.1855E-04
556616.14	4204280.87	32375.08252	0.35300	0.23522	0.85870	0.88115	7.74E-04	2.16E-06	1.75E-06	7.56E-06	7.39E-06	7.9283E-04
556635.24	4204261.11	32359.61269	0.38261	0.25267	0.97160	0.99697	7.74E-04	2.34E-06	1.88E-06	8.56E-06	8.37E-06	7.9474E-04
556597.04	4204300.63	32358.96808	0.32692	0.21976	0.76281	0.78260	7.74E-04	2.00E-06	1.63E-06	6.72E-06	6.57E-06	7.9050E-04
556577.94	4204320.39	32270.96404	0.30359	0.20582	0.68080	0.69819	7.71E-04	1.86E-06	1.53E-06	6.00E-06	5.86E-06	7.8672E-04
556654.34	4204241.35	32252.28291	0.41620	0.27229	1.10424	1.13274	7.71E-04	2.55E-06	2.02E-06	9.72E-06	9.51E-06	7.9483E-04
556558.84	4204340.15	32136.89239	0.28270	0.19324	0.61064	0.62591	7.68E-04	1.73E-06	1.44E-06	5.38E-06	5.25E-06	7.8207E-04
556482.39	4204434.08	32126.43899	0.21741	0.15389	0.41180	0.42126	7.68E-04	1.33E-06	1.14E-06	3.63E-06	3.53E-06	7.7766E-04
556539.74	4204359.91	32010.40006	0.26408	0.18197	0.55066	0.56410	7.65E-04	1.62E-06	1.35E-06	4.85E-06	4.73E-06	7.7780E-04
556673.44	4204221.59	31924.10754	0.45385	0.29404	1.25885	1.29060	7.63E-04	2.78E-06	2.19E-06	1.11E-05	1.08E-05	7.9006E-04
556520.64	4204379.67	31840.82273	0.24724	0.17171	0.49889	0.51074	7.61E-04	1.51E-06	1.28E-06	4.39E-06	4.29E-06	7.7266E-04
556730.74	4204182.07	31793.33834	0.60219	0.38029	1.94175	1.99123	7.60E-04	3.69E-06	2.83E-06	1.71E-05	1.67E-05	8.0038E-04
556768.94	4204162.31	31610.79595	0.74503	0.46296	2.74589	2.82153	7.56E-04	4.56E-06	3.44E-06	2.42E-05	2.37E-05	8.1156E-04
556692.54	4204201.83	31363.94440	0.49636	0.31831	1.44068	1.47583	7.50E-04	3.04E-06	2.37E-06	1.27E-05	1.24E-05	7.8027E-04
556481.75	4204418.88	31237.53161	0.21746	0.15331	0.41347	0.42272	7.47E-04	1.33E-06	1.14E-06	3.64E-06	3.55E-06	7.5643E-04
556597.04	4204280.87	30958.20428	0.32712	0.21884	0.76590	0.78463	7.40E-04	2.00E-06	1.63E-06	6.74E-06	6.58E-06	7.5705E-04
556577.94	4204300.63	30929.62293	0.30384	0.20500	0.68436	0.70096	7.39E-04	1.86E-06	1.52E-06	6.03E-06	5.88E-06	7.5470E-04
556616.14	4204261.11	30887.07320	0.35304	0.23411	0.86054	0.88156	7.38E-04	2.16E-06	1.74E-06	7.58E-06	7.40E-06	7.5727E-04
556558.84	4204320.39	30856.49681	0.28301	0.19253	0.61437	0.62904	7.38E-04	1.73E-06	1.43E-06	5.41E-06	5.28E-06	7.5151E-04
556635.24	4204241.35	30803.64938	0.38265	0.25144	0.97182	0.99528	7.36E-04	2.34E-06	1.87E-06	8.56E-06	8.35E-06	7.5752E-04
556539.74	4204340.15	30770.19236	0.26438	0.18131	0.55427	0.56725	7.36E-04	1.62E-06	1.35E-06	4.88E-06	4.76E-06	7.4820E-04
556520.64	4204359.91	30681.40287	0.24768	0.17119	0.50250	0.51399	7.33E-04	1.52E-06	1.27E-06	4.43E-06	4.31E-06	7.4500E-04
556654.34	4204221.59	30550.04163	0.41579	0.27064	1.10101	1.12696	7.30E-04	2.55E-06	2.01E-06	9.70E-06	9.46E-06	7.5405E-04
556711.64	4204182.07	30542.49419	0.54461	0.34551	1.65805	1.69680	7.30E-04	3.34E-06	2.57E-06	1.46E-05	1.42E-05	7.6490E-04
556749.84	4204162.31	30460.52093	0.66612	0.41567	2.28269	2.33889	7.28E-04	4.08E-06	3.09E-06	2.01E-05	1.96E-05	7.7509E-04
556480.49	4204404.32	30377.21081	0.21698	0.15245	0.41361	0.42262	7.26E-04	1.33E-06	1.13E-06	3.64E-06	3.55E-06	7.3585E-04
556673.44	4204201.83	30074.71767	0.45287	0.29186	1.25118	1.27958	7.19E-04	2.77E-06	2.17E-06	1.10E-05	1.07E-05	7.4567E-04
557475.79	4203968.39	29894.32394	4.29313	7.30015	1.68098	1.60700	7.15E-04	2.63E-05	5.43E-05	1.48E-05	1.35E-05	8.2353E-04
556788.04	4204142.55	29772.28880	0.83496	0.51163	3.38631	3.47919	7.12E-04	5.12E-06	3.80E-06	2.98E-05	2.92E-05	7.7968E-04
556577.94	4204280.87	29639.84944	0.30379	0.20412	0.68639	0.70210	7.09E-04	1.86E-06	1.52E-06	6.04E-06	5.89E-06	7.2389E-04
556558.84	4204300.63	29630.95722	0.28307	0.19177	0.61692	0.63092	7.08E-04	1.73E-06	1.43E-06	5.43E-06	5.29E-06	7.2225E-04
556597.04	4204261.11	29588.61703	0.32689	0.21777	0.76686	0.78440	7.07E-04	2.00E-06	1.62E-06	6.75E-06	6.58E-06	7.2431E-04
556539.74	4204320.39	29584.41231	0.26446	0.18061	0.55693	0.56938	7.07E-04	1.62E-06	1.34E-06	4.90E-06	4.78E-06	7.1989E-04
556520.64	4204340.15	29541.17204	0.24781	0.17057	0.50517	0.51626	7.06E-04	1.52E-06	1.27E-06	4.45E-06	4.33E-06	7.1778E-04
557442.62	4203964.58	29527.32669	5.31429	7.36971	1.87797	1.78780	7.06E-04	3.26E-05	5.48E-05	1.65E-05	1.50E-05	8.2478E-04
556478.59	4204389.76	29509.49340	0.21597	0.15130	0.41229	0.42098	7.05E-04	1.32E-06	1.12E-06	3.63E-06	3.53E-06	7.1507E-04
556616.14	4204241.35	29466.69394	0.35280	0.23296	0.86018	0.87962	7.04E-04	2.16E-06	1.73E-06	7.57E-06	7.38E-06	7.2328E-04
557538.03	4203967.40	29445.59765	3.05233	6.45695	1.36465	1.31273	7.04E-04	1.87E-05	4.80E-05	1.20E-05	1.10E-05	7.9367E-04
556730.74	4204162.31	29423.72668	0.59956	0.37602	1.92514	1.96784	7.03E-04	3.67E-06	2.80E-06	1.70E-05	1.65E-05	7.4334E-04
557569.64	4203968.39	29401.54119	2.64711	6.27644	1.24649	1.20221	7.03E-04	1.62E-05	4.67E-05	1.10E-05	1.01E-05	7.8683E-04
556818.43	4204132.04	29401.25579	1.02036	0.61698	5.07407	5.24005	7.03E-04	6.25E-06	4.59E-06	4.47E-05	4.40E-05	8.0236E-04
556692.54	4204182.07	29378.79714	0.49475	0.31555	1.42815	1.45895	7.02E-04	3.03E-06	2.35E-06	1.26E-05	1.22E-05	7.3253E-04
557508.39	4203966.42	29373.79374	3.52215	6.52534	1.48918	1.42862	7.02E-04	2.16E-05	4.85E-05	1.31E-05	1.20E-05	7.9741E-04
557408.19	4203963.74	29367.93798	6.78232	7.12947	2.12449	2.01319	7.02E-04	4.16E-05	5.30E-05	1.87E-05	1.69E-05	8.3224E-04
556635.24	4204221.59	29266.64211	0.38206	0.24997	0.96870	0.99007	7.00E-04	2.34E-06	1.86E-06	8.53E-06	8.31E-06	7.2069E-04
557607.19	4203969.38	29117.64099	2.24857	5.79451	1.11879	1.08210	6.96E-04	1.38E-05	4.31E-05	9.85E-06	9.08E-06	7.7188E-04
556654.34	4204201.83	28890.55688	0.41477	0.26878	1.09417	1.11736	6.91E-04	2.54E-06	2.00E-06	9.64E-06	9.38E-06	7.1421E-04
556768.94	4204142.55	28808.58051	0.74025	0.45585	2.73982	2.80487	6.89E-04	4.54E-06	3.39E-06	2.41E-05	2.35E-05	7.4429E-04
557637.81	4203969.38	28784.71400	1.99303	5.36661	1.02930	0.99750	6.88E-04	1.22E-05	3.99E-05	9.06E-06	8.37E-06	7.5768E-04
556558.84	4204280.87	28444.42881	0.28285	0.19095	0.61816	0.63141	6.80E-04	1.73E-06	1.42E-06	5.44E-06	5.30E-06	6.9389E-04
556539.74	4204300.63	28443.78723	0.26431	0.17987	0.55857	0.57044	6.80E-04	1.62E-06	1.34E-06	4.92E-06	4.79E-06	6.9264E-04
556520.64	4204320.39	28435.81008	0.24771	0.16989	0.50697	0.51760	6.80E-04	1.52E-06	1.26E-06	4.46E-06	4.34E-06	6.9138E-04
556711.64	4204162.31	28415.65186	0.54208	0.34192	1.64044	1.67352	6.79E-04	3.32E-06	2.54E-06	1.44E-05	1.40E-05	7.1366E-04
556577.94	4204261.11	28394.46674	0.30345	0.20317	0.68683	0.70155	6.79E-04	1.86E-06	1.51E-06	6.05E-06	5.89E-06	6.9411E-04
556673.44	4204182.07	28281.72777	0.45121	0.28946	1.23950	1.26433	6.76E-04	2.76E-06	2.15E-06	1.09E-05	1.06E-05	7.0255E-04
556597.04	4204241.35	28278.76820	0.32642	0.21668	0.76598	0.78221	6.76E-04	2.00E-06	1.61E-06	6.75E-06	6.56E-06	6.9296E-04
556475.42	4204365.70	28132.47881	0.21404	0.14936	0.40921	0.41737	6.73E-04	1.31E-06	1.11E-06	3.60E-06	3.50E-06	6.8207E-04
556616.14	4204221.59	28085.82471	0.35218	0.23171	0.85732	0.87506	6.71E-04	2.16E-06	1.72E-06	7.55E-06	7.34E-06	6.9020E-04
556749.84	4204142.55	27954.14581	0.66183	0.40989	2.26507	2.31213	6.68E-04	4.05E-06	3.05E-06	1.99E-05	1.94E-05	7.1473E-04
556635.24	4204201.83	27773.28794	0.38104	0.24838	0.96262	0.98176	6.64E-04	2.33E-06	1.85E-06	8.48E-06	8.24E-06	6.8485E-04
557675.35	4203964.44	27752.89563	1.71472	4.50918	0.92082	0.89416	6.63E-04	1.05E-05	3.35E-05	8.11E-06	7.50E-06	7.2311E-04
556692.54	4204162.31	27468.09084	0.49241	0.31254	1.41134	1.43752	6.57E-04	3.02E-06	2.32E-06	1.24E-05	1.21E-05	6.8649E-04
557715.86	4203967.40	27399.17600	1.48999	4.10185	0.83413	0.81174	6.55E-04	9.13E-06	3.05E-05	7.35E-06	6.81E-06	7.0879E-04
556520.64	4204300.63	27372.98740	0.24742	0.16918	0.50793	0.51806	6.54E-04	1.52E-06	1.26E-06	4.47E-06	4.35E-06	6.6598E-04
556539.74	4204280.87	27347.94778	0.26398	0.17911	0.55919	0.57044	6.54E-04	1.62E-06	1.33E-06	4.92E-06	4.79E-06	6.6644E-04
556558.84	4204261.11	27296.00296	0.28240	0.19007	0.61808	0.63052	6.53E-04	1.73E-06	1.41E-06	5.44E-06	5.29E-06	6.6642E-04
556654.34	4204182.07	27263.52952	0.41312	0.26667	1.08357	1.10388	6.52E-04	2.53E-06	1.98E-06	9.54E-06	9.26E-06	6.7508E-04
556577.94	4204241.35	27187.43424	0.30286	0.20216	0.68561	0.69928	6.50E-04	1.86E-06	1.50E-06	6.04E-06	5.87E-06	6.6521E-04
556730.74	4204142.55	27162.35896	0.59564	0.37123	1.90283	1.93796	6.49E-04	3.65E-06	2.76E-06	1.68E-05	1.63E-05	6.8878E-04
556477.32	4204342.27	27143.36557	0.21530	0.14964	0.41427	0.42219	6.49E-04	1.32E-06	1.11E-06	3.65E-06	3.54E-06	6.5852E-04
557387.20	4203947.78	27018.34212	7.74611	5.46064	2.16146	2.04173	6.46E-04	4.75E-05	4.06E-05	1.90E-05	1.71E-05	7.7013E-04
557758.34	4203970.37	26999.84192	1.30509	3.67367	0.75799	0.73907	6.45E-04	8.00E-06	2.73E-05	6.68E-06	6.20E-06	6.9365E-04
556597.04	4204221.59	26996.67334	0.32561	0.21548	0.76294	0.77780	6.45E-04	1.99E-06	1.60E-06	6.72E-06	6.53E-06	6.6223E-04
556788.04	4204122.79	26865.19044	0.82661	0.50132	3.39621	3.47375	6.42E-04	5.06E-06	3.73E-06	2.99E-05	2.91E-05	7.1009E-04
556616.14	4204201.83	26728.91335	0.35115	0.23030	0.85183	0.86778	6.39E-04	2.15E-06	1.71E-06	7.50E-06	7.28E-06	6.5763E-04
556673.44	4204162.31	26554.12683	0.44901	0.28688	1.22404	1.24517	6.35E-04	2.75E-06	2.13E-06	1.08E-05	1.04E-05	6.6092E-04
556829.03	4204113.30	26537.38450	1.08524	0.64529	6.16585	6.36249	6.34E-04	6.65E-06	4.80E-06	5.43E-05	5.34E-05	7.5354E-04
556711.64	4204142.55	26380.35499	0.53861	0.33798	1.61766	1.64466	6.31E-04	3.30E-06	2.51E-06	1.42E-05	1.38E-05	6.6451E-04
556520.64	4204280.87	26348.26604	0.24696	0.16845	0.50802	0.51763	6.30E-04	1.51E-06	1.25E-06	4.47E-06	4.34E-06	6.4147E-04
556635.24	4204182.07	26305.84150	0.37953	0.24659	0.95338	0.97022	6.29E-04	2.33E-06	1.83E-06	8.40E-06	8.14E-06	6.4957E-04
556539.74	4204261.11	26289.21195	0.26346	0.17831	0.55876	0.56934	6.28E-04	1.61E-06	1.33E-06	4.92E-06	4.78E-06	6.4111E-04
556768.94	4204122.79	26205.12033	0.73342	0.44784	2.72518	2.77718	6.26E-04	4.49E-06	3.33E-06	2.40E-05	2.33E-05	6.8159E-04
556814.03	4204113.30	26203.33083	0.97609	0.58342	4.83855	4.96919	6.26E-04	5.98E-06	4.34E-06	4.26E-05	4.17E-05	7.2105E-04
556558.84	4204241.35	26183.35074	0.28174	0.18915	0.61667	0.62825	6.26E-04	1.73E-06	1.41E-06	5.43E-06	5.27E-06	6.3978E-04
556476.30	4204322.88	26157.57304	0.21425	0.14858	0.41294	0.42048	6.25E-04	1.31E-06	1.10E-06	3.64E-06	3.53E-06	6.3491E-04
556577.94	4204221.59	26012.57536	0.30201	0.20108	0.68273	0.69528	6.22E-04	1.85E-06	1.50E-06	6.01E-06	5.83E-06	6.3705E-04
556799.03	4204113.30	25836.72990	0.88210	0.53017	3.91028	3.99931	6.18E-04	5.40E-06	3.94E-06	3.44E-05	3.36E-05	6.9500E-04
556597.04	4204201.83	25758.49372	0.32458	0.21424	0.75801	0.77144	6.16E-04	1.99E-06	1.59E-06	6.68E-06	6.47E-06	6.3252E-04
556654.34	4204162.31	25695.13708	0.41107	0.26446	1.06979	1.08715	6.14E-04	2.52E-06	1.97E-06	9.42E-06	9.12E-06	6.3730E-04
556692.54	4204142.55	25629.61885	0.48934	0.30926	1.38993	1.41129	6.13E-04	3.00E-06	2.30E-06	1.22E-05	1.18E-05	6.4208E-04
556749.84	4204122.79	25609.52546	0.65613	0.40355	2.23991	2.27644	6.12E-04	4.02E-06	3.00E-06	1.97E-05	1.91E-05	6.5807E-04
556784.03	4204113.30	25463.61075	0.80112	0.48431	3.23328	3.29564	6.09E-04	4.91E-06	3.60E-06	2.85E-05	2.77E-05	6.7337E-04
556473.61	4204309.42	25405.08459	0.21212	0.14700	0.40810	0.41527	6.07E-04	1.30E-06	1.09E-06	3.59E-06	3.48E-06	6.1681E-04

556616.14	4204182.07	25401.85713	0.34977	0.22879	0.84386	0.85798	6.07E-04	2.14E-06	1.70E-06	7.43E-06	7.20E-06	6.2573E-04
556520.64	4204261.11	25363.12007	0.24638	0.16770	0.50730	0.51636	6.06E-04	1.51E-06	1.25E-06	4.47E-06	4.33E-06	6.1789E-04
556539.74	4204241.35	25256.95781	0.26275	0.17746	0.55721	0.56710	6.04E-04	1.61E-06	1.32E-06	4.91E-06	4.76E-06	6.1639E-04
556558.84	4204221.59	25092.82033	0.28084	0.18815	0.61385	0.62454	6.00E-04	1.72E-06	1.40E-06	5.41E-06	5.24E-06	6.1364E-04
556730.74	4204122.79	25042.46917	0.59080	0.36613	1.87444	1.90131	5.99E-04	3.62E-06	2.72E-06	1.65E-05	1.60E-05	6.3747E-04
556769.03	4204113.30	25040.78841	0.73002	0.44402	2.71704	2.76190	5.99E-04	4.47E-06	3.30E-06	2.39E-05	2.32E-05	6.5351E-04
556673.44	4204142.55	24885.04441	0.44624	0.28411	1.20467	1.22201	5.95E-04	2.73E-06	2.11E-06	1.06E-05	1.03E-05	6.2061E-04
556635.24	4204162.31	24877.54029	0.37763	0.24468	0.94132	0.95582	5.95E-04	2.31E-06	1.82E-06	8.29E-06	8.02E-06	6.1517E-04
556577.94	4204201.83	24865.38013	0.30094	0.19994	0.67817	0.68959	5.94E-04	1.84E-06	1.49E-06	5.97E-06	5.79E-06	6.0952E-04
556473.07	4204294.35	24718.07122	0.21139	0.14632	0.40692	0.41382	5.91E-04	1.30E-06	1.09E-06	3.58E-06	3.47E-06	6.0035E-04
556597.04	4204182.07	24546.96935	0.32228	0.21291	0.75106	0.76304	5.87E-04	1.98E-06	1.58E-06	6.61E-06	6.40E-06	6.0340E-04
556711.64	4204122.79	24460.71154	0.53449	0.33383	1.58983	1.61046	5.85E-04	3.27E-06	2.48E-06	1.40E-05	1.35E-05	6.1803E-04
556520.64	4204241.35	24400.71453	0.24564	0.16691	0.50566	0.51416	5.83E-04	1.50E-06	1.24E-06	4.45E-06	4.31E-06	5.9484E-04
556539.74	4204221.59	24243.12283	0.26183	0.17653	0.55451	0.56368	5.80E-04	1.60E-06	1.31E-06	4.88E-06	4.73E-06	5.9209E-04
556829.03	4204098.30	24236.49265	1.06964	0.62875	6.30658	6.47927	5.79E-04	6.55E-06	4.68E-06	5.55E-05	5.44E-05	7.0054E-04
556654.34	4204142.55	24174.47535	0.40857	0.26209	1.05273	1.06714	5.78E-04	2.50E-06	1.95E-06	9.27E-06	8.95E-06	6.0060E-04
556472.53	4204281.98	24162.73268	0.21068	0.14572	0.40554	0.41221	5.78E-04	1.29E-06	1.08E-06	3.57E-06	3.46E-06	5.8704E-04
556616.14	4204162.31	24102.41048	0.34805	0.22715	0.83349	0.84579	5.76E-04	2.13E-06	1.69E-06	7.34E-06	7.10E-06	5.9445E-04
556814.03	4204098.30	24049.80428	0.96375	0.57045	4.89211	4.99995	5.75E-04	5.90E-06	4.24E-06	4.31E-05	4.20E-05	6.7012E-04
556558.84	4204201.83	24028.61738	0.27976	0.18710	0.60970	0.61948	5.74E-04	1.71E-06	1.39E-06	5.37E-06	5.20E-06	5.8810E-04
556692.54	4204122.79	23875.59363	0.48566	0.30577	1.36398	1.38045	5.71E-04	2.98E-06	2.27E-06	1.20E-05	1.16E-05	5.9962E-04
556799.03	4204098.30	23820.48447	0.87198	0.51978	3.91786	3.98717	5.69E-04	5.34E-06	3.86E-06	3.45E-05	3.35E-05	6.4662E-04
556577.94	4204182.07	23750.45314	0.29970	0.19876	0.67209	0.68236	5.68E-04	1.84E-06	1.48E-06	5.92E-06	5.73E-06	5.8274E-04
556784.03	4204098.30	23578.92860	0.79269	0.47588	3.21780	3.26401	5.64E-04	4.86E-06	3.54E-06	2.83E-05	2.74E-05	6.2780E-04
556635.24	4204142.55	23488.51395	0.37538	0.24264	0.92658	0.93878	5.62E-04	2.30E-06	1.80E-06	8.16E-06	7.88E-06	5.8166E-04
556520.64	4204221.59	23468.48923	0.24479	0.16610	0.50320	0.51114	5.61E-04	1.50E-06	1.24E-06	4.43E-06	4.29E-06	5.7250E-04
556471.99	4204264.22	23408.92463	0.20981	0.14499	0.40371	0.41006	5.60E-04	1.29E-06	1.08E-06	3.56E-06	3.44E-06	5.6898E-04
556597.04	4204162.31	23358.98378	0.32173	0.21149	0.74219	0.75273	5.58E-04	1.97E-06	1.57E-06	6.54E-06	6.32E-06	5.7482E-04
556673.44	4204122.79	23294.61766	0.44312	0.28124	1.18190	1.19550	5.57E-04	2.71E-06	2.09E-06	1.04E-05	1.00E-05	5.8213E-04
556769.03	4204098.30	23293.38548	0.72310	0.43722	2.69156	2.72363	5.57E-04	4.43E-06	3.25E-06	2.37E-05	2.29E-05	6.1109E-04
556539.74	4204201.83	23263.44053	0.26083	0.17560	0.55084	0.55929	5.56E-04	1.60E-06	1.31E-06	4.85E-06	4.69E-06	5.6859E-04
557388.04	4203913.35	23014.40891	6.94987	3.51363	1.88465	1.77993	5.50E-04	4.26E-05	2.61E-05	1.66E-05	1.49E-05	6.5042E-04
556558.84	4204182.07	23005.09677	0.27863	0.18606	0.60445	0.61333	5.50E-04	1.71E-06	1.38E-06	5.32E-06	5.15E-06	5.6352E-04
556616.14	4204142.55	22820.14560	0.34595	0.22533	0.82072	0.83122	5.46E-04	2.12E-06	1.68E-06	7.23E-06	6.98E-06	5.6354E-04
556468.76	4204250.76	22715.68152	0.20712	0.14317	0.39687	0.40285	5.43E-04	1.27E-06	1.06E-06	3.49E-06	3.38E-06	5.5225E-04
556654.34	4204122.79	22709.41200	0.40571	0.25959	1.03270	1.04423	5.43E-04	2.49E-06	1.93E-06	9.09E-06	8.76E-06	5.6517E-04
556577.94	4204162.31	22655.90806	0.29826	0.19749	0.66446	0.67360	5.42E-04	1.83E-06	1.47E-06	5.85E-06	5.65E-06	5.5641E-04
556520.64	4204201.83	22558.30240	0.24384	0.16526	0.49991	0.50728	5.39E-04	1.49E-06	1.23E-06	4.40E-06	4.26E-06	5.5066E-04
556539.74	4204182.07	22304.85796	0.25970	0.17463	0.54615	0.55390	5.33E-04	1.59E-06	1.30E-06	4.81E-06	4.65E-06	5.4557E-04
556473.07	4204235.16	22262.81148	0.20946	0.14448	0.40325	0.40916	5.32E-04	1.28E-06	1.07E-06	3.55E-06	3.43E-06	5.4156E-04
556829.03	4204083.30	22212.15616	1.05283	0.61196	6.43665	6.57175	5.31E-04	6.45E-06	4.55E-06	5.67E-05	5.51E-05	6.5384E-04
556597.04	4204142.55	22185.35458	0.31987	0.20993	0.73139	0.74053	5.30E-04	1.96E-06	1.56E-06	6.44E-06	6.21E-06	5.4654E-04
556635.24	4204122.79	22146.81562	0.37287	0.24052	0.90948	0.91947	5.29E-04	2.28E-06	1.79E-06	8.01E-06	7.72E-06	5.4924E-04
556814.03	4204083.30	22118.20603	0.94995	0.55698	4.92550	5.00149	5.29E-04	5.82E-06	4.14E-06	4.34E-05	4.20E-05	6.2407E-04
556558.84	4204162.31	21992.68507	0.27729	0.18494	0.59789	0.60589	5.26E-04	1.70E-06	1.38E-06	5.27E-06	5.08E-06	5.3918E-04
556799.03	4204083.30	21992.25665	0.86065	0.50895	3.90717	3.95135	5.26E-04	5.27E-06	3.78E-06	3.44E-05	3.32E-05	6.0237E-04
556784.03	4204083.30	21849.96471	0.78321	0.46705	3.18707	3.21415	5.22E-04	4.80E-06	3.47E-06	2.81E-05	2.70E-05	5.8566E-04
556520.64	4204182.07	21668.06653	0.24279	0.16439	0.49584	0.50265	5.18E-04	1.49E-06	1.22E-06	4.37E-06	4.22E-06	5.2929E-04
556769.03	4204083.30	21664.13937	0.71506	0.42994	2.65318	2.67095	5.18E-04	4.38E-06	3.20E-06	2.34E-05	2.24E-05	5.7126E-04
556616.14	4204122.79	21594.92315	0.34379	0.22354	0.80635	0.81513	5.16E-04	2.11E-06	1.66E-06	7.10E-06	6.84E-06	5.3396E-04
556577.94	4204142.55	21576.82032	0.29661	0.19614	0.65534	0.66339	5.16E-04	1.82E-06	1.46E-06	5.77E-06	5.57E-06	5.3043E-04
556469.84	4204218.47	21485.70657	0.20660	0.14257	0.39560	0.40112	5.14E-04	1.27E-06	1.06E-06	3.48E-06	3.37E-06	5.2282E-04
556539.74	4204162.31	21365.55180	0.25847	0.17362	0.54052	0.54757	5.11E-04	1.58E-06	1.29E-06	4.76E-06	4.59E-06	5.2300E-04
556751.70	4204081.99	21309.94412	0.64632	0.39209	2.19026	2.20153	5.09E-04	3.96E-06	2.92E-06	1.93E-05	1.85E-05	5.5408E-04
556597.04	4204122.79	21065.34204	0.31802	0.20843	0.71939	0.72721	5.04E-04	1.95E-06	1.55E-06	6.34E-06	6.10E-06	5.1953E-04
556558.84	4204142.55	20995.48563	0.27580	0.18374	0.59017	0.59731	5.02E-04	1.69E-06	1.37E-06	5.20E-06	5.01E-06	5.1519E-04
556520.64	4204162.31	20781.43688	0.24159	0.16343	0.49088	0.49715	4.97E-04	1.48E-06	1.22E-06	4.32E-06	4.17E-06	5.0799E-04
557402.31	4203885.64	20578.15187	5.60757	2.65329	1.62268	1.53475	4.92E-04	3.44E-05	1.97E-05	1.43E-05	1.29E-05	5.7320E-04
556577.94	4204122.79	20536.71086	0.29492	0.19479	0.64516	0.65217	4.91E-04	1.81E-06	1.45E-06	5.68E-06	5.47E-06	5.0536E-04
556539.74	4204142.55	20444.48527	0.25714	0.17257	0.53401	0.54039	4.89E-04	1.58E-06	1.28E-06	4.70E-06	4.53E-06	5.0084E-04
556829.03	4204068.30	20420.51029	1.03455	0.59482	6.52919	6.60632	4.88E-04	6.34E-06	4.42E-06	5.75E-05	5.54E-05	6.1187E-04
556814.03	4204068.30	20389.40859	0.93486	0.54313	4.92445	4.95705	4.87E-04	5.73E-06	4.04E-06	4.34E-05	4.16E-05	5.8216E-04
556799.03	4204068.30	20341.93896	0.84832	0.49781	3.87048	3.88368	4.86E-04	5.20E-06	3.70E-06	3.41E-05	3.26E-05	5.6187E-04
556784.03	4204068.30	20275.67762	0.77291	0.45793	3.13740	3.14266	4.85E-04	4.74E-06	3.40E-06	2.76E-05	2.64E-05	5.4685E-04
556769.03	4204068.30	20164.48943	0.70628	0.42237	2.60107	2.60347	4.82E-04	4.33E-06	3.14E-06	2.29E-05	2.18E-05	5.3427E-04
556742.01	4204070.15	20128.02568	0.60776	0.36945	1.95194	1.95490	4.81E-04	3.72E-06	2.75E-06	1.72E-05	1.64E-05	5.2125E-04
556468.22	4204182.95	20077.52972	0.20396	0.14066	0.38786	0.39280	4.80E-04	1.25E-06	1.05E-06	3.42E-06	3.30E-06	4.8898E-04
556558.84	4204122.79	20029.04045	0.27426	0.18254	0.58156	0.58789	4.79E-04	1.68E-06	1.36E-06	5.12E-06	4.93E-06	4.9191E-04
556520.64	4204142.55	19920.60134	0.24035	0.16247	0.48531	0.49104	4.76E-04	1.47E-06	1.21E-06	4.27E-06	4.12E-06	4.8730E-04
556713.49	4204069.61	19827.75722	0.52398	0.32351	1.50487	1.50824	4.74E-04	3.21E-06	2.41E-06	1.33E-05	1.27E-05	5.0553E-04
557379.64	4203879.76	19752.01671	6.21866	2.39393	1.66933	1.57364	4.72E-04	3.81E-05	1.78E-05	1.47E-05	1.32E-05	5.5600E-04
556539.74	4204122.79	19543.65192	0.25574	0.17149	0.52672	0.53245	4.67E-04	1.57E-06	1.28E-06	4.64E-06	4.47E-06	4.7916E-04
556639.22	4204080.37	19515.80787	0.37311	0.23935	0.88841	0.89413	4.67E-04	2.29E-06	1.78E-06	7.82E-06	7.50E-06	4.8594E-04
556668.82	4204072.84	19502.89554	0.42390	0.26792	1.07230	1.07719	4.66E-04	2.60E-06	1.99E-06	9.44E-06	9.04E-06	4.8931E-04
556653.75	4204075.53	19453.01266	0.39668	0.25262	0.97069	0.97597	4.65E-04	2.43E-06	1.88E-06	8.55E-06	8.19E-06	4.8609E-04
556623.07	4204080.91	19258.50760	0.34850	0.22523	0.80361	0.80919	4.60E-04	2.14E-06	1.67E-06	7.08E-06	6.79E-06	4.7807E-04
556467.54	4204158.41	19129.67270	0.20222	0.13939	0.38243	0.38699	4.57E-04	1.24E-06	1.04E-06	3.37E-06	3.25E-06	4.6621E-04
556520.64	4204122.79	19084.67590	0.23912	0.16152	0.47919	0.48441	4.56E-04	1.46E-06	1.20E-06	4.22E-06	4.06E-06	4.6719E-04
556608.54	4204079.30	18903.34258	0.32807	0.21339	0.73532	0.74062	4.52E-04	2.01E-06	1.59E-06	6.48E-06	6.21E-06	4.6819E-04
556799.03	4204053.30	18853.30257	0.83503	0.48638	3.79812	3.77527	4.51E-04	5.12E-06	3.62E-06	3.34E-05	3.17E-05	5.2457E-04
556814.03	4204053.30	18849.11859	0.91881	0.52910	4.87216	4.84850	4.51E-04	5.63E-06	3.93E-06	4.29E-05	4.07E-05	5.4376E-04
556829.03	4204053.30	18835.42004	1.01508	0.57750	6.54981	6.53997	4.50E-04	6.22E-06	4.29E-06	5.77E-05	5.49E-05	5.7335E-04
556784.03	4204053.30	18833.88314	0.76153	0.44840	3.06253	3.04433	4.50E-04	4.67E-06	3.33E-06	2.70E-05	2.55E-05	5.1076E-04
556769.03	4204053.30	18783.00958	0.69667	0.41447	2.53270	2.51942	4.49E-04	4.27E-06	3.08E-06	2.23E-05	2.11E-05	4.9982E-04
556593.47	4204081.45	18737.80264	0.30911	0.20242	0.67603	0.68126	4.48E-04	1.89E-06	1.51E-06	5.95E-06	5.72E-06	4.6302E-04
557351.09	4203870.53	18656.43582	6.99404	2.05887	1.70725	1.60124	4.46E-04	4.28E-05	1.53E-05	1.50E-05	1.34E-05	5.3263E-04
556578.40	4204083.06	18536.49670	0.29170	0.19228	0.62313	0.62823	4.43E-04	1.79E-06	1.43E-06	5.49E-06	5.27E-06	4.5711E-04
556464.31	4204140.65	18369.09457	0.19905	0.13729	0.37350	0.37774	4.39E-04	1.22E-06	1.02E-06	3.29E-06	3.17E-06	4.4783E-04
556563.34	4204084.14	18300.76022	0.27567	0.18286	0.57576	0.58067	4.38E-04	1.69E-06	1.36E-06	5.07E-06	4.87E-06	4.5049E-04
557322.54	4203866.33	18268.52549	8.07618	1.84984	1.80104	1.67569	4.37E-04	4.95E-05	1.38E-05	1.59E-05	1.41E-05	5.2988E-04
556546.65	4204085.75	18053.55847	0.25941	0.17326	0.52933	0.53403	4.32E-04	1.59E-06	1.29E-06	4.66E-06	4.48E-06	4.4361E-04
556531.58	4204084.14	17706.47448	0.24578	0.16514	0.49074	0.49517	4.23E-04	1.51E-06	1.23E-06	4.32E-06	4.16E-06	4.3450E-04
556460.15	4204123.22	17635.21076	0.19541	0.13492	0.36327	0.36719	4.22E-04	1.20E-06	1.00E-06	3.20E-06	3.08E-06	4.3007E-04
557295.66	4203866.33	17632.83678	9.52587	1.73537	1.88275	1.74098	4.22E-04	5.84E-05	1.29E-05	1.66E-05	1.46E-05	5.2399E-04
556515.44	4204084.14	17412.41753	0.23245	0.15717	0.45446	0.45864	4.16E-04	1.42E-06	1.17E-06	4.00E-06	3.85E-06	4.2671E-04
556499.29	4204081.45	17003.15275	0.21988	0.14958	0.42094	0.42484	4.06E-04	1.35E-06	1.11E-06	3.71E-06	3.57E-06	4.1621E-04
556455.70	4204105.67	16934.65183	0.19175	0.13255	0.35288	0.35651	4.05E-04	1.17E-06	9.86E-07	3.11E-06	2.99E-06	4.1310E-04
556486.92	4204084.14	16866.54521	0.21118	0.14433	0.39898	0.40276	4.03E-04	1.29E-06	1.07E-06	3.51E-06	3.38E-06	4.1247E-04
557266.27	4203863.81	16682.05380	10.97561	1.57080	1.92936	1.77021	3.99E-04	6.72E-05	1.17E-05	1.70E-05	1.49E-05	5.0957E-04
556462.70	4204085.22	16424.56203	0.19520	0.13457	0.35932	0.36279	3.93E-04	1.20E-06	1.00E-06	3.16E-06	3.04E-06	4.0105E-04
556813.94	4204016.49	15723.67919	0.87516	0.49382	4.40090	4.21878	3.76E-04	5.36E-06	3.67E-06	3.88E-05	3.54E-05	4.5908E-04
557241.08	4203857.09	15614.85105	10.79427	1.38262	1.89423	1.72530	3.73E-04	6.61E-05	1.03E-05	1.67E-05	1.45E-05	4.8086E-04
557211.69	4203852.05	14835.24030	10.35698	1.22882	1.89738	1.71213	3.55E-04	6.35E-05	9.14E-06	1.67E-05	1.44E-05	4.5832E-04
557178.10	4203844.49	13869.44444	9.27762	1.05544	1.90644	1.70906	3.32E-04	5.68E-05	7.85E-06	1.68E-05	1.43E-05	4.2738E-04
556810.30	4203987.98	13833.21478	0.82096	0.45851	3.51736	3.29919	3.31E-04	5.03E-06	3.41E-06	3.10E-05	2.77E-05	3.9780E-04
557150.39	4203840.30	12898.89831	7.60872	0.94329	1.93235	1.72705	3.08E-04	4.66E-05	7.01E-06	1.70E-05	1.45E-05	3.9350E-04
556805.45	4203964.92	12558.17923	0.76958	0.42791	2.78841	2.59980	3.00E-04	4.71E-06	3.18E-06	2.46E-05	2.18E-05	3.5449E-04
557124.36	4203835.26	12017.05263	5.89559	0.85069	1.85520	1.65104	2.87E-04	3.61E-05	6.33E-06	1.63E-05	1.39E-05	3.5992E-04
556801.81	4203941.87	11458.88701	0.72616	0.40194	2.25087	2.09433	2.74E-04	4.45E-06	2.99E-06	1.98E-05	1.76E-05	3.1877E-04
557099.16	4203832.74	11322.54366	4.63964	0.78132	1.80727	1.60216	2.71E-04	2.84E-05	5.81E-06	1.59E-05	1.34E-05	3.3427E-04
557071.45	4203831.06	10646.11723	3.56534	0.71595	1.74668	1.54357	2.55E-04	2.18E-05	5.32E-06	1.54E-05	1.30E-05	3.1001E-04
556801.81	4203913.96	10302.68103	0.69211	0.37932	1.81797	1.68732	2.46E-04	4.24E-06	2.82E-06	1.60E-05	1.42E-05	2.8353E-04
557049.62	4203826.86	10046.30011	2.80784	0.65815	1.64306	1.45405	2.40E-04	1.72E-05	4.89E-06	1.45E-05	1.22E-05	2.8893E-04
556795.74	4203885.45	9333.45448	0.63795	0.34950	1.41237	1.31789	2.23E-04	3.91E-06	2.60E-06	1.24E-05	1.11E-05	2.5313E-04
557021.91	4203819.30	9292.15022	2.09576	0.58684	1.48231	1.31717	2.22E-04	1.28E-05	4.36E-06	1.31E-05	1.11E-05	2.6345E-04
556993.36	4203819.30	8815.52654	1.69657	0.54112	1.43412	1.27426	2.11E-04	1.04E-05	4.02E-06	1.26E-05	1.07E-05	2.4848E-04
556790.89	4203861.18	8617.26387	0.59612	0.32680	1.16356	1.09024	2.06E-04	3.65E-06	2.43E-06	1.02E-05	9.15E-06	2.3148E-04
556964.80	4203810.90	8198.06104	1.33181	0.48237	1.27113	1.13777	1.96E-04	8.16E-06	3.59E-06	1.12E-05	9.55E-06	2.2847E-04

556786.03	4203832.06	7867.20503	0.55196	0.30295	0.94423	0.88837	1.88E-04	3.38E-06	2.25E-06	8.32E-06	7.45E-06	2.0948E-04
556943.81	4203805.87	7835.51032	1.14283	0.44658	1.17065	1.05366	1.87E-04	7.00E-06	3.32E-06	1.03E-05	8.84E-06	2.1679E-04
556911.90	4203798.31	7385.34619	0.92742	0.39901	1.03496	0.94074	1.77E-04	5.68E-06	2.97E-06	9.11E-06	7.89E-06	2.0221E-04
556879.99	4203789.07	7001.64491	0.76369	0.35569	0.90533	0.83213	1.67E-04	4.68E-06	2.64E-06	7.97E-06	6.98E-06	1.8966E-04
556853.12	4203780.67	6756.62721	0.65873	0.32417	0.80951	0.75082	1.62E-04	4.04E-06	2.41E-06	7.13E-06	6.30E-06	1.8140E-04
CONCUNIT ug/	m^3						0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0000E+00
DEPUNIT g/m^	2						0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0000E+00

Scenario 2

Phase 1 Receptors Exposed to Phase 2 Construction

Richmond Country Club Residential Project

Scenario 2—Phase 1 Receptors Exposed to Phase 2 Construction

Estimation of Annual Onsite Construction Emissions

Start of Construction	12/2/2022	
End of Construction	10/19/2023	**Total**
Number of Days	321	321
Number of Hours	7,704	7,704

Size of the construction area source (On-site): 32,569.1 sq-meters

Construction Phase	Year	On-site Construction Activity	Unmitigated Onsite DPM (tons)	Unmitigated Onsite PM2.5 (tons)
Phase 2	2022	On-site Building Construction	0.00799	0.00799
Phase 2	2023	On-site Building Construction	0.0622	0.0622
Phase 2	2023	On-site Architectural Coating	0.00407	0.00407
Phase 2	2023	On-site Paving	0.00469	0.00469

Total Unmitigated DPM (On-site) 7.895E-02 tons

Average Emission 7.169E+04 grams
2.585E-03 grams/sec
7.936E-08 grams/m2-sec

Total Unmitigated PM2.5 (On-site) 7.895E-02 tons

Average Emission 7.169E+04 grams
2.585E-03 grams/sec
7.936E-08 grams/m2-sec

Richmond Country Club Residential Project

Scenario 2—Phase 1 Receptors Exposed to Phase 2 Construction

Estimation of Annual Offsite Construction DPM Emissions (No Mitigation)

Start of Construction	12/2/2022		
End of Construction	10/19/2023	**Total**	
Number of Days	321	321	
Number of Hours	7,704	7,704	

Road Segments

Road Segment 1	Going Away from Site to Richmond Pkwy
Road Segment 2	Coming to Site from Richmond Pkwy
Road Segment 3	Coming to Site from Giant Hwy
Road Segment 4	Going Away from site to Giant Hwy

		Phase 2 2022	Phase 2 2023	Phase 2 2023	Phase 2 2023
	Construction Trip Type	Building Construction	Building Construction	Architectural Coating	Paving
DPM	Haul Truck	0.000000	0.000000	0.000000	0.000000
DPM	Vendor Truck	0.000010	0.000040	0.000000	0.000000
DPM	Worker	0.000010	0.000080	0.000010	0.000010
DPM	Total	0.000020	0.000120	0.000010	0.000010
PM2.5 Total	Haul Truck	0.000000	0.000000	0.000000	0.000000
PM2.5 Total	Vendor Truck	0.000110	0.000940	0.000000	0.000000
PM2.5 Total	Worker	0.000410	0.003670	0.000500	0.000320
PM2.5 Total	Total	0.000520	0.004610	0.000500	0.000320

		Haul Truck (tons)	**Vendor Truck (tons)**	**Worker (tons)**	**Total (tons)**
Total DPM		0.000E+00	5.000E-05	1.100E-04	1.600E-04
Average Emissions	Grams	0.000E+00	4.540E+01	9.988E+01	
	Grams/sec	0.000E+00	1.637E-06	3.601E-06	
	Default Vehicle Travel Distance in CalEEMod	20	7.3	10.8	
	Vehicle Travel Distances in the Construction HRA (miles)				
	Road Segment 1 (mi)	0.39	0.39	0.39	miles
	Road Segment 2 (mi)	0.48	0.48	0.48	miles
	Road Segment 3 (mi)	0.57	0.57	0.57	miles
	Road Segment 4 (mi)	0.54	0.54	0.54	miles
	Trip Distribution (percent)				
	Road Segment 1	25%	25%	25%	
	Road Segment 2	25%	25%	25%	
	Road Segment 3	25%	25%	25%	
	Road Segment 4	25%	25%	25%	
	Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**
	Road Segment 1 (mi)	0.000E+00	2.213E-08	3.291E-08	5.503E-08
	Road Segment 2 (mi)	0.000E+00	2.686E-08	3.994E-08	6.679E-08
	Road Segment 3 (mi)	0.000E+00	3.181E-08	4.730E-08	7.910E-08
	Road Segment 4 (mi)	0.000E+00	3.031E-08	4.507E-08	7.538E-08

		Haul Truck (tons)	**Vendor Truck (tons)**	**Worker (tons)**	**Total (tons)**
Total PM2.5 Total		0.000E+00	1.050E-03	4.900E-03	5.950E-03
Average Emissions	Grams	0.000E+00	9.534E+02	4.449E+03	
	Grams/sec	0.000E+00	3.438E-05	1.604E-04	
	Default Vehicle Travel Distance in CalEEMod	20	7.3	10.8	
	Vehicle Travel Distances in the Construction HRA (miles)				
	Road Segment 1 (mi)	0.39	0.39	0.39	miles
	Road Segment 2 (mi)	0.48	0.48	0.48	miles
	Road Segment 3 (mi)	0.57	0.57	0.57	miles
	Road Segment 4 (mi)	0.54	0.54	0.54	miles
	Trip Distribution (percent)				
	Road Segment 1	25%	25%	25%	
	Road Segment 2	25%	25%	25%	
	Road Segment 3	25%	25%	25%	
	Road Segment 4	25%	25%	25%	
	Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**
	Road Segment 1 (mi)	0.000E+00	4.647E-07	1.466E-06	1.930E-06
	Road Segment 2 (mi)	0.000E+00	5.640E-07	1.779E-06	2.343E-06
	Road Segment 3 (mi)	0.000E+00	6.679E-07	2.107E-06	2.775E-06
	Road Segment 4 (mi)	0.000E+00	6.365E-07	2.008E-06	2.644E-06

Cancer Risk Calculations Using OEHHA/BAAQMD Cancer Risk Assumptions
Richmond Country Club Residential Project
Scenario 2—Phase 1 Receptors Exposed to Phase 2 Construction
Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Infant
UTM: 556863.82 4204848.27

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Cancer Risk (/million)
3rd Trimester	0.054057547	10	361	1	0.25	0.7
0-1	0.054057547	10	1090	1	0.63	5.6
					Total	6.32

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Child
UTM: 556863.82 4204848.27

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Construction Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Unit Risk Factor $(ug/m3)^{-1}$
1	0.054057547	3	572	1	0.88	1.2
					Total	1.23

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Adult
UTM: 556863.82 4204848.27

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Construction Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Unit Risk Factor $(ug/m3)^{-1}$
1	0.054057547	1	261	0.73	0.88	0.1
					Total	0.14

Richmond Country Club Residential Project

Scenario 2—Phase 1 Receptors Exposed to Phase 2 Construction

UTM: 556863.82 4204848.27

Estimates of Chronic Non-Cancer Hazard Index (CNCHI)

Unmitigated

Chronic Non-Cancer Hazard Index at the Maximum Impacted Sensitive Receptor

Reference Exposure Level (REL) for DPM: 5 ug/m3

CNCHI = DPM/REL

X (m)	Y (m)	Average DPM (ug/m3)	Max DPM (ug/m3)	CNCHI
556863.82	4204848.27	0.0541	0.0541	0.01081

Unmitigated

Annual PM2.5 Total (Exhaust + Fugitive Dust)

X (m)	Y (m)	Average PM2.5 Total (ug/m3)	Max PM2.5 (ug/m3)
556863.82	4204848.27	0.0542	0.0542

Richmond Country Club Residential Project

Construction Annual DPM Emissions (PM2.5 Exhaust)

Unmitigated Concentrations

		Maximum DPM (ug/m3)	**MIR UTM** X	Y
Annual Average Onsite Total PM2.5 Emission Rate (grams/m2/sec):	7.94E-08	5.4058E-02	556863.82	4204848.27
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 1 (grams/sec):	5.50E-08			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 2 (grams/sec):	6.68E-08			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 3 (grams/sec):	7.91E-08			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 4 (grams/sec):	7.54E-08			

X	Y	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Onsite Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 1 Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 2 Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 3 Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 4 Annual DPM Exhaust w/Actual Emissions (ug/m3)	**Total DPM (ug/m3)**
556863.82	4204848.27	681102.61084	14.55038	19.66304	10.58506	10.94075	5.41E-02	8.01E-07	1.31E-06	8.37E-07	8.25E-07	5.4058E-02
556867.91	4204832.16	364777.69667	29.24751	42.56385	22.77406	23.73735	2.89E-02	1.61E-06	2.84E-06	1.80E-06	1.79E-06	2.8958E-02
556868.46	4204816.87	286175.86127	10.05446	14.28098	7.76518	7.88897	2.27E-02	5.53E-07	9.54E-07	6.14E-07	5.95E-07	2.2714E-02
556868.19	4204801.86	202425.35252	29.72968	46.98344	24.55446	25.53496	1.61E-02	1.64E-06	3.14E-06	1.94E-06	1.92E-06	1.6074E-02
556865.18	4204783.57	163692.85870	14.19720	21.05288	11.20796	11.32600	1.30E-02	7.81E-07	1.41E-06	8.87E-07	8.54E-07	1.2995E-02
556900.67	4204867.92	126844.03578	32.67278	52.37002	27.33924	28.48423	1.01E-02	1.80E-06	3.50E-06	2.16E-06	2.15E-06	1.0076E-02
556903.13	4204853.18	107795.33525	21.85532	33.82412	17.52059	17.60032	8.55E-03	1.20E-06	2.26E-06	1.39E-06	1.33E-06	8.5610E-03
556907.23	4204836.80	88503.33282	31.43011	50.23287	26.41910	27.55738	7.02E-03	1.73E-06	3.36E-06	2.09E-06	2.08E-06	7.0331E-03
556906.68	4204820.97	75128.59413	24.29883	38.15005	19.57302	19.60310	5.96E-03	1.34E-06	2.55E-06	1.55E-06	1.48E-06	5.9693E-03
556908.04	4204805.41	63238.94049	35.77685	57.07896	30.24734	31.69829	5.02E-03	1.97E-06	3.81E-06	2.39E-06	2.39E-06	5.0293E-03
556905.59	4204788.76	55861.92402	24.72487	38.96315	19.93519	19.91905	4.43E-03	1.36E-06	2.60E-06	1.58E-06	1.50E-06	4.4404E-03
556906.68	4204773.74	49583.42281	34.06703	53.81405	28.87350	30.29900	3.94E-03	1.87E-06	3.59E-06	2.28E-06	2.28E-06	3.9451E-03
556906.95	4204759.82	40826.11959	33.70810	52.60368	28.64265	30.11754	3.24E-03	1.86E-06	3.51E-06	2.27E-06	2.27E-06	3.2500E-03
556905.04	4204744.26	40486.16879	21.15749	33.09300	17.12253	17.11354	3.21E-03	1.16E-06	2.21E-06	1.35E-06	1.29E-06	3.2191E-03
556902.04	4204730.34	33030.01314	36.98443	56.83336	31.57698	33.37754	2.62E-03	2.04E-06	3.80E-06	2.50E-06	2.52E-06	2.6322E-03
556903.54	4204708.45	27435.19342	43.35245	65.09858	37.21246	39.65025	2.18E-03	2.39E-06	4.35E-06	2.94E-06	2.99E-06	2.1900E-03
556907.36	4204694.80	22068.00955	41.68793	49.90919	34.56881	36.84347	1.75E-03	2.29E-06	3.33E-06	2.73E-06	2.78E-06	1.7625E-03
556909.55	4204681.43	19851.64573	38.56938	36.30362	30.71563	32.57840	1.58E-03	2.12E-06	2.42E-06	2.43E-06	2.46E-06	1.5849E-03
556912.55	4204668.87	17861.24587	39.75560	33.96331	31.66067	33.54027	1.42E-03	2.19E-06	2.27E-06	2.50E-06	2.53E-06	1.4270E-03
556914.46	4204649.76	16259.15933	39.14847	32.68644	31.60976	33.37515	1.29E-03	2.15E-06	2.18E-06	2.50E-06	2.52E-06	1.2997E-03
556916.37	4204636.11	14151.51381	44.02824	36.41210	36.24702	38.21374	1.12E-03	2.42E-06	2.43E-06	2.87E-06	2.88E-06	1.1337E-03
556919.38	4204621.91	12923.85643	46.71379	38.95413	39.12237	41.15535	1.03E-03	2.57E-06	2.60E-06	3.09E-06	3.10E-06	1.0370E-03
556927.02	4204606.08	11888.34716	46.78414	39.68588	39.97856	41.87285	9.43E-04	2.57E-06	2.65E-06	3.16E-06	3.16E-06	9.5503E-04
556927.29	4204590.24	11005.02032	37.39014	32.25085	32.49830	33.75653	8.73E-04	2.06E-06	2.15E-06	2.57E-06	2.54E-06	8.8271E-04
556931.12	4204575.23	10110.88055	44.06966	38.92685	39.26001	40.70635	8.02E-04	2.43E-06	2.60E-06	3.11E-06	3.07E-06	8.1362E-04
556940.13	4204557.75	9408.53437	43.62503	39.47213	39.40560	40.85911	7.47E-04	2.40E-06	2.64E-06	3.12E-06	3.08E-06	7.5792E-04
556945.04	4204544.10	8806.24639	38.92656	35.86466	35.03096	36.88255	6.99E-04	2.14E-06	2.40E-06	2.77E-06	2.78E-06	7.0897E-04
556953.78	4204530.72	8317.32668	42.68334	39.10230	38.49175	40.60983	6.60E-04	2.35E-06	2.61E-06	3.04E-06	3.06E-06	6.7115E-04
556963.33	4204517.62	7977.00311	38.63393	34.60402	34.87212	36.60724	6.33E-04	2.13E-06	2.31E-06	2.76E-06	2.76E-06	6.4303E-04
556969.34	4204503.97	7687.19157	34.28147	29.72461	30.67457	32.05433	6.10E-04	1.89E-06	1.99E-06	2.43E-06	2.42E-06	6.1879E-04
556977.80	4204491.41	7316.29340	35.89100	30.22991	31.74184	33.12902	5.81E-04	1.98E-06	2.02E-06	2.51E-06	2.50E-06	5.8964E-04
556985.45	4204475.03	7056.90492	33.33738	27.20750	29.18396	30.37077	5.60E-04	1.83E-06	1.82E-06	2.31E-06	2.29E-06	5.6830E-04
556989.54	4204459.74	6676.23876	34.44101	27.11764	29.78524	30.88963	5.30E-04	1.90E-06	1.81E-06	2.36E-06	2.33E-06	5.3823E-04
556994.45	4204440.63	6597.19531	20.85203	15.59867	17.27622	17.50596	5.24E-04	1.15E-06	1.04E-06	1.37E-06	1.32E-06	5.2844E-04
556992.27	4204425.34	6461.77898	25.06546	18.96038	20.83633	21.08645	5.13E-04	1.38E-06	1.27E-06	1.65E-06	1.59E-06	5.1870E-04
556993.64	4204410.87	6299.25427	39.49936	30.07191	33.66712	34.53427	5.00E-04	2.17E-06	2.01E-06	2.66E-06	2.60E-06	5.0937E-04
556991.45	4204393.13	6216.58266	26.85127	21.10989	23.18043	23.53374	4.93E-04	1.48E-06	1.41E-06	1.83E-06	1.77E-06	4.9986E-04
556989.27	4204379.20	5999.54606	29.31181	24.04239	26.30225	26.78008	4.76E-04	1.61E-06	1.61E-06	2.08E-06	2.02E-06	4.8346E-04
556989.54	4204364.19	5871.55209	37.42411	29.46611	33.08159	33.23486	4.66E-04	2.06E-06	1.97E-06	2.62E-06	2.51E-06	4.7513E-04
556989.54	4204348.35	5778.30664	29.60587	25.28636	27.82756	28.48239	4.59E-04	1.63E-06	1.69E-06	2.20E-06	2.15E-06	4.6625E-04
556992.00	4204333.07	5483.01696	42.30995	33.07471	37.03082	37.43962	4.35E-04	2.33E-06	2.21E-06	2.93E-06	2.82E-06	4.4543E-04
556950.23	4204398.04	5409.09202	26.53847	22.97594	26.73422	27.95170	4.29E-04	1.46E-06	1.53E-06	2.11E-06	2.11E-06	4.3649E-04
556955.96	4204412.78	5192.46406	39.06024	30.54138	34.83630	35.62226	4.12E-04	2.15E-06	2.04E-06	2.76E-06	2.69E-06	4.2172E-04
556954.60	4204430.26	5112.21851	24.45407	20.96310	26.21154	27.49993	4.06E-04	1.35E-06	1.40E-06	2.07E-06	2.07E-06	4.1261E-04
556954.32	4204444.73	4828.76090	42.03401	33.49372	38.45979	39.80424	3.83E-04	2.31E-06	2.24E-06	3.04E-06	3.00E-06	3.9381E-04
556948.59	4204464.38	4798.74746	25.73652	22.16668	28.85232	29.91323	3.81E-04	1.42E-06	1.48E-06	2.28E-06	2.25E-06	3.8827E-04
556941.76	4204477.49	4566.70181	45.79204	37.26571	42.76171	44.77570	3.62E-04	2.52E-06	2.49E-06	3.38E-06	3.38E-06	3.7419E-04
556933.03	4204491.14	4489.25023	19.83390	16.66170	24.84513	25.43123	3.56E-04	1.09E-06	1.11E-06	1.97E-06	1.92E-06	3.6236E-04
556924.29	4204505.33	4331.96656	43.76223	36.48396	42.45541	44.88629	3.44E-04	2.41E-06	2.44E-06	3.36E-06	3.38E-06	3.5538E-04
556915.01	4204515.71	4104.88290	43.20398	36.68668	43.34494	46.11945	3.26E-04	2.38E-06	2.45E-06	3.43E-06	3.48E-06	3.3751E-04
556864.39	4204863.38	3921.92781	43.71014	36.03779	44.37587	46.07865	3.11E-04	2.41E-06	2.41E-06	3.51E-06	3.47E-06	3.2305E-04

CONCUNIT ug/m ^3

DEPUNIT g/m^2

Richmond Country Club Residential Project

Construction Annual Total PM2.5 Emissions (PM2.5 Total) **Unmitigated Concentrations** **Maximum PM2.5 Total (ug/m3)** **MIR UTM** X Y

Annual Average Onsite Total PM2.5 Emission Rate (grams/m2/sec):	7.94E-08	5.4186E-02	556863.82 4204848.27
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 1 (grams/sec):	1.93E-06		
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 2 (grams/sec):	2.34E-06		
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 3 (grams/sec):	2.77E-06		
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 4 (grams/sec):	2.64E-06		

X	Y	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Onsite Annual PM2.5 Total w/Actual Emissions (ug/m3)	Offsite-Road Segment 1 Annual PM2.5 Total w/Actual Emissions (ug/m3)	Offsite-Road Segment 2 Annual PM2.5 Total w/Actual Emissions (ug/m3)	Offsite-Road Segment 3 Annual PM2.5 Total w/Actual Emissions (ug/m3)	Offsite-Road Segment 4 Annual PM2.5 Total w/Actual Emissions (ug/m3)	**Total DPM (ug/m3)**
556863.82	4204848.27	681102.61084	14.55038	19.66304	10.58506	10.94075	5.41E-02	2.81E-05	4.61E-05	2.94E-05	2.89E-05	5.4186E-02
556867.91	4204832.16	364777.69667	29.24751	42.56385	22.77406	23.73735	2.89E-02	5.65E-05	9.97E-05	6.32E-05	6.28E-05	2.9232E-02
556868.46	4204816.87	286175.86127	10.05446	14.28098	7.76518	7.88897	2.27E-02	1.94E-05	3.35E-05	2.15E-05	2.09E-05	2.2807E-02
556868.19	4204801.86	202425.35252	29.72968	46.98344	24.55446	25.53496	1.61E-02	5.74E-05	1.10E-04	6.81E-05	6.75E-05	1.6368E-02
556865.18	4204783.57	163692.85870	14.19720	21.05288	11.20796	11.32600	1.30E-02	2.74E-05	4.93E-05	3.11E-05	2.99E-05	1.3129E-02
556900.67	4204867.92	126844.03578	32.67278	52.37002	27.33924	28.48423	1.01E-02	6.31E-05	1.23E-04	7.59E-05	7.53E-05	1.0404E-02
556903.13	4204853.18	107795.33525	21.85532	33.82412	17.52059	17.60032	8.55E-03	4.22E-05	7.92E-05	4.86E-05	4.65E-05	8.7715E-03
556907.23	4204836.80	88503.33282	31.43011	50.23287	26.41910	27.55738	7.02E-03	6.07E-05	1.18E-04	7.33E-05	7.29E-05	7.3484E-03
556906.68	4204820.97	75128.59413	24.29883	38.15005	19.57302	19.60310	5.96E-03	4.69E-05	8.94E-05	5.43E-05	5.18E-05	6.2048E-03
556908.04	4204805.41	63238.94049	35.77685	57.07896	30.24734	31.69829	5.02E-03	6.91E-05	1.34E-04	8.39E-05	8.38E-05	5.3893E-03
556905.59	4204788.76	55861.92402	24.72487	38.96315	19.93519	19.91905	4.43E-03	4.77E-05	9.13E-05	5.53E-05	5.27E-05	4.6803E-03
556906.68	4204773.74	49583.42281	34.06703	53.81405	28.87350	30.29900	3.94E-03	6.58E-05	1.26E-04	8.01E-05	8.01E-05	4.2871E-03
556906.95	4204759.82	40826.11959	33.70810	52.60368	28.64265	30.11754	3.24E-03	6.51E-05	1.23E-04	7.95E-05	7.96E-05	3.5875E-03
556905.04	4204744.26	40486.16879	21.15749	33.09300	17.12253	17.11354	3.21E-03	4.08E-05	7.75E-05	4.75E-05	4.53E-05	3.4242E-03
556902.04	4204730.34	33030.01314	36.98443	56.83336	31.57698	33.37754	2.62E-03	7.14E-05	1.33E-04	8.76E-05	8.83E-05	3.0018E-03
556903.54	4204708.45	27435.19342	43.35245	65.09858	37.21246	39.65025	2.18E-03	8.37E-05	1.53E-04	1.03E-04	1.05E-04	2.6216E-03
556907.36	4204694.80	22068.00955	41.68793	49.90919	34.56881	36.84347	1.75E-03	8.05E-05	1.17E-04	9.59E-05	9.74E-05	2.1421E-03
556909.55	4204681.43	19851.64573	38.56938	36.30362	30.71563	32.57840	1.58E-03	7.45E-05	8.51E-05	8.52E-05	8.61E-05	1.9064E-03
556912.55	4204668.87	17861.24587	39.75560	33.96331	31.66067	33.54027	1.42E-03	7.67E-05	7.96E-05	8.79E-05	8.87E-05	1.7504E-03
556914.46	4204649.76	16259.15933	39.14847	32.68644	31.60976	33.37515	1.29E-03	7.56E-05	7.66E-05	8.77E-05	8.82E-05	1.6185E-03
556916.37	4204636.11	14151.51381	44.02824	36.41210	36.24702	38.21374	1.12E-03	8.50E-05	8.53E-05	1.01E-04	1.01E-04	1.4950E-03
556919.38	4204621.91	12923.85643	46.71379	38.95413	39.12237	41.15535	1.03E-03	9.02E-05	9.13E-05	1.09E-04	1.09E-04	1.4245E-03
556927.02	4204606.08	11888.34716	46.78414	39.68588	39.97856	41.87285	9.43E-04	9.03E-05	9.30E-05	1.11E-04	1.11E-04	1.3484E-03
556927.29	4204590.24	11005.02032	37.39014	32.25085	32.49830	33.75653	8.73E-04	7.22E-05	7.56E-05	9.02E-05	8.93E-05	1.2006E-03
556931.12	4204575.23	10110.88055	44.06966	38.92685	39.26001	40.70635	8.02E-04	8.51E-05	9.12E-05	1.09E-04	1.08E-04	1.1953E-03
556940.13	4204557.75	9408.53437	43.62503	39.47213	39.40560	40.85911	7.47E-04	8.42E-05	9.25E-05	1.09E-04	1.08E-04	1.1408E-03
556945.04	4204544.10	8806.24639	38.92656	35.86466	35.03096	36.88255	6.99E-04	7.51E-05	8.40E-05	9.72E-05	9.75E-05	1.0528E-03
556953.78	4204530.72	8317.32668	42.68334	39.10230	38.49175	40.60983	6.60E-04	8.24E-05	9.16E-05	1.07E-04	1.07E-04	1.0483E-03
556963.33	4204517.62	7977.00311	38.63393	34.60402	34.87212	36.60724	6.33E-04	7.46E-05	8.11E-05	9.68E-05	9.68E-05	9.8229E-04
556969.34	4204503.97	7687.19157	34.28147	29.72461	30.67457	32.05433	6.10E-04	6.62E-05	6.96E-05	8.51E-05	8.48E-05	9.1577E-04
556977.80	4204491.41	7316.29340	35.89100	30.22991	31.74184	33.12902	5.81E-04	6.93E-05	7.08E-05	8.81E-05	8.76E-05	8.9643E-04
556985.45	4204475.03	7056.90492	33.33738	27.20750	29.18396	30.37077	5.60E-04	6.44E-05	6.37E-05	8.10E-05	8.03E-05	8.4944E-04
556989.54	4204459.74	6676.23876	34.44101	27.11764	29.78524	30.88963	5.30E-04	6.65E-05	6.35E-05	8.26E-05	8.17E-05	8.2419E-04
556994.45	4204440.63	6597.19531	20.85203	15.59867	17.27622	17.50596	5.24E-04	4.03E-05	3.65E-05	4.79E-05	4.63E-05	6.9460E-04
556992.27	4204425.34	6461.77898	25.06546	18.96038	20.83633	21.08645	5.13E-04	4.84E-05	4.44E-05	5.78E-05	5.58E-05	7.1920E-04
556993.64	4204410.87	6299.25427	39.49936	30.07191	33.66712	34.53427	5.00E-04	7.63E-05	7.05E-05	9.34E-05	9.13E-05	8.3137E-04
556991.45	4204393.13	6216.58266	26.85127	21.10989	23.18043	23.53374	4.93E-04	5.18E-05	4.95E-05	6.43E-05	6.22E-05	7.2120E-04
556989.27	4204379.20	5999.54606	29.31181	24.04239	26.30225	26.78008	4.76E-04	5.66E-05	5.63E-05	7.30E-05	7.08E-05	7.3285E-04
556989.54	4204364.19	5871.55209	37.42411	29.46611	33.08159	33.23486	4.66E-04	7.22E-05	6.90E-05	9.18E-05	8.79E-05	7.8694E-04
556989.54	4204348.35	5778.30664	29.60587	25.28636	27.82756	28.48239	4.59E-04	5.72E-05	5.92E-05	7.72E-05	7.53E-05	7.2751E-04
556992.00	4204333.07	5483.01696	42.30995	33.07471	37.03082	37.43962	4.35E-04	8.17E-05	7.75E-05	1.03E-04	9.90E-05	7.9606E-04
556950.23	4204398.04	5409.09202	26.53847	22.97594	26.73422	27.95170	4.29E-04	5.12E-05	5.38E-05	7.42E-05	7.39E-05	6.8243E-04
556955.96	4204412.78	5192.46406	39.06024	30.54138	34.83630	35.62226	4.12E-04	7.54E-05	7.16E-05	9.67E-05	9.42E-05	7.4990E-04
556954.60	4204430.26	5112.21851	24.45407	20.96310	26.21154	27.49993	4.06E-04	4.72E-05	4.91E-05	7.27E-05	7.27E-05	6.4749E-04
556954.32	4204444.73	4828.76090	42.03401	33.49372	38.45979	39.80424	3.83E-04	8.11E-05	7.85E-05	1.07E-04	1.05E-04	7.5481E-04
556948.59	4204464.38	4798.74746	25.73652	22.16668	28.85232	29.91323	3.81E-04	4.97E-05	5.19E-05	8.01E-05	7.91E-05	6.4161E-04
556941.76	4204477.49	4566.70181	45.79204	37.26571	42.76171	44.77570	3.62E-04	8.84E-05	8.73E-05	1.19E-04	1.18E-04	7.7519E-04
556933.03	4204491.14	4489.25023	19.83390	16.66170	24.84513	25.43123	3.56E-04	3.83E-05	3.90E-05	6.89E-05	6.72E-05	5.6979E-04
556924.29	4204505.33	4331.96656	43.76223	36.48396	42.45541	44.88629	3.44E-04	8.45E-05	8.55E-05	1.18E-04	1.19E-04	7.5025E-04
556915.01	4204515.71	4104.88290	43.20398	36.68668	43.34494	46.11945	3.26E-04	8.34E-05	8.60E-05	1.20E-04	1.22E-04	7.3735E-04
556864.39	4204863.38	3921.92781	43.71014	36.03779	44.37587	46.07865	3.11E-04	8.44E-05	8.44E-05	1.23E-04	1.22E-04	7.2504E-04
CONCUNIT ug/m	^3											

Scenario 3

Phase 2 Receptors Exposed to Phase 1 Construction

Richmond Country Club Residential Project

Scenario 3—Phase 2 Receptors Exposed to Phase 1 Home Construction

Estimation of Annual Onsite Construction Emissions

	Phase 1 Home Construction	
Start of Construction	12/24/2021	
End of Construction	12/1/2022	**Total**
Number of Days	342	342
Number of Hours	8,208	8,208

Size of the construction area source (Phase 1 Home Construction Area): 34,123.7 sq-meters

Construction Phase	**Year**	**On-site Construction Activity**	**Unmitigated Onsite DPM (tons)**	**Unmitigated Onsite PM2.5 (tons)**
Phase 1	2021	On-site Building Construction	0.0027	0.0027
Phase 1	2022	On-site Building Construction	0.0834	0.0834
Phase 1	2022	On-site Architectural Coating	0.0047	0.0047
Phase 1	2022	On-site Paving	0.00522	0.00522

Total Unmitigated DPM (On-site)	9.602E-02	tons
Average Emission	8.719E+04	grams
	2.951E-03	grams/sec
	8.647E-08	grams/m2-sec
Total Unmitigated PM2.5 (On-site)	9.602E-02	tons
Average Emission	8.719E+04	grams
	2.951E-03	grams/sec
	8.647E-08	grams/m2-sec

Richmond Country Club Residential Project

Scenario 3—Phase 2 Receptors Exposed to Phase 1 Construction

Estimation of Annual Offsite Construction DPM Emissions (No Mitigation)

	Phase 1 Home Construction	
Start of Construction	12/24/2021	
End of Construction	12/1/2022	**Total**
Number of Days	342	342
Number of Hours	8,208	8,208

Road Segments

Road Segment 1	Going Away from Site to Richmond Pkwy
Road Segment 2	Coming to Site from Richmond Pkwy
Road Segment 3	Coming to Site from Giant Hwy
Road Segment 4	Going Away from site to Giant Hwy

		Phase 1 2021	Phase 1 2021	Phase 1 2021	Phase 1 2021	Phase 1 2022	Phase 1 2022	Phase 1 2022
	Construction Trip Type	Demolition	Site Preparation	Grading	Building Construction	Building Construction	Architectural Coating	Paving
DPM	Haul Truck	0.00001	0.00141	0.00202	0.00000	0.00000	0.00000	0.00000
DPM	Vendor Truck	0.00000	0.00000	0.00000	0.00003	0.00101	0.00000	0.00000
DPM	Worker	0.00001	0.00000	0.00001	0.00002	0.00064	0.00007	0.00001
DPM	Total	0.00002	0.00141	0.00203	0.00005	0.00165	0.00007	0.00001
PM2.5 Total	Haul Truck	0.00007	0.00956	0.01370	0.00000	0.00000	0.00000	0.00000
PM2.5 Total	Vendor Truck	0.00000	0.00000	0.00000	0.00031	0.01100	0.00000	0.00000
PM2.5 Total	Worker	0.00032	0.00019	0.00065	0.00082	0.02970	0.00310	0.00032
PM2.5 Total	Total	0.00039	0.00975	0.01430	0.00113	0.04070	0.00310	0.00032

		Haul Truck (tons)	**Vendor Truck (tons)**	**Worker (tons)**	**Total (tons)**
Total DPM		3.440E-03	1.040E-03	7.600E-04	5.240E-03
Average Emissions	Grams	3.124E+03	9.443E+02	6.901E+02	
	Grams/sec	1.057E-04	3.196E-05	2.335E-05	
	Default Vehicle Travel Distance in CalEEMod	20	7.3	10.8	
	Vehicle Travel Distances in the Construction HRA (miles)				
	Road Segment 1 (mi)	0.39	0.39	0.39	miles
	Road Segment 2 (mi)	0.48	0.48	0.48	miles
	Road Segment 3 (mi)	0.57	0.57	0.57	miles
	Road Segment 4 (mi)	0.54	0.54	0.54	miles
	Trip Distribution (percent)				
	Road Segment 1	25%	25%	25%	
	Road Segment 2	25%	25%	25%	
	Road Segment 3	25%	25%	25%	
	Road Segment 4	25%	25%	25%	
	Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**
	Road Segment 1 (mi)	5.216E-07	4.320E-07	2.134E-07	1.167E-06
	Road Segment 2 (mi)	6.330E-07	5.243E-07	2.590E-07	1.416E-06
	Road Segment 3 (mi)	7.497E-07	6.210E-07	3.067E-07	1.677E-06
	Road Segment 4 (mi)	7.144E-07	5.917E-07	2.923E-07	1.598E-06

		Haul Truck (tons)	**Vendor Truck (tons)**	**Worker (tons)**	**Total (tons)**
Total PM2.5 Total		2.333E-02	1.131E-02	3.510E-02	6.974E-02
Average Emissions	Grams	2.118E+04	1.027E+04	3.187E+04	
	Grams/sec	7.169E-04	3.475E-04	1.079E-03	
	Default Vehicle Travel Distance in CalEEMod	20	7.3	10.8	
	Vehicle Travel Distances in the Construction HRA (miles)				
	Road Segment 1 (mi)	0.39	0.39	0.39	miles
	Road Segment 2 (mi)	0.48	0.48	0.48	miles
	Road Segment 3 (mi)	0.57	0.57	0.57	miles
	Road Segment 4 (mi)	0.54	0.54	0.54	miles
	Trip Distribution (percent)				
	Road Segment 1	25%	25%	25%	
	Road Segment 2	25%	25%	25%	
	Road Segment 3	25%	25%	25%	
	Road Segment 4	25%	25%	25%	
	Total Average Offsite Vehicle Emissions Along Travel Distance (g/sec)				**Total**
	Road Segment 1 (mi)	3.537E-06	4.698E-06	9.855E-06	1.809E-05
	Road Segment 2 (mi)	4.293E-06	5.702E-06	1.196E-05	2.196E-05
	Road Segment 3 (mi)	5.084E-06	6.753E-06	1.417E-05	2.600E-05
	Road Segment 4 (mi)	4.845E-06	6.435E-06	1.350E-05	2.478E-05

Cancer Risk Calculations Using OEHHA/BAAQMD Cancer Risk Assumptions
Richmond Country Club Residential Project
Scenario 3—Phase 2 Receptors Exposed to Phase 1 Construction
Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Infant
UTM: 556900.67 4204884.58

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Cancer Risk (/million)
3rd Trimester	0.058561985	10	361	1	0.25	0.8
0-1	0.058561985	10	1090	1	0.69	6.6
					Total	7.40

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Child
UTM: 556900.67 4204884.58

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Construction Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Unit Risk Factor $(ug/m3)^{-1}$
1	0.058561985	3	572	1	0.94	1.4
					Total	1.42

Cancer Risk Impacts from Construction at the Maximum Impacted Sensitive Receptor - Adult
UTM: 556900.67 4204884.58

Cancer Potency Factor: 1.1 $(mg/kg\text{-}day)^{-1}$
Exposure Frequency 350 days/year
Averaging Period 25550 days

Construction Annual DPM Emissions (as PM2.5 Exhaust) Unmitigated

Construction Year	Maximum DPM Concentration (ug/m3)	Age Sensitivity Factor	Daily Breathing Rate (L/kg-day)	Time At Home Factor	Exposure Duration (years)	Unit Risk Factor $(ug/m3)^{-1}$
1	0.058561985	1	261	0.73	0.94	0.2
					Total	0.16

Richmond Country Club Residential Project

Scenario 3—Phase 2 Receptors Exposed to Phase 1 Construction

UTM: 556900.67 4204884.58

Estimates of Chronic Non-Cancer Hazard Index (CNCHI)

Unmitigated

Chronic Non-Cancer Hazard Index at the Maximum Impacted Sensitive Receptor

Reference Exposure Level (REL) for DPM: 5 ug/m3

CNCHI = DPM/REL

X (m)	Y (m)	Average DPM (ug/m3)	Max DPM (ug/m3)	CNCHI
556900.67	4204884.58	0.0586	0.0586	0.01171

Unmitigated

Annual PM2.5 Total (Exhaust + Fugitive Dust)

X (m)	Y (m)	Average PM2.5 Total (ug/m3)	Max PM2.5 (ug/m3)
556900.67	4204884.58	0.0586	0.0586

Richmond Country Club Residential Project

Construction Annual DPM Emissions (PM2.5 Exhaust) **Unmitigated Concentrations**

		Maximum DPM (ug/m3)	MIR UTM X	MIR UTM Y
Annual Average Onsite Total PM2.5 Emission Rate (grams/m2/sec):	8.65E-08	5.8562E-02	556900.67	4204884.58
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 1 (grams/sec):	1.17E-06			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 2 (grams/sec):	1.42E-06			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 3 (grams/sec):	1.68E-06			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 4 (grams/sec):	1.60E-06			

X	Y	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Unit Emissions VALUES AVERAGED AVERAGE CONC	Onsite Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 1 Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 2 Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 3 Annual DPM Exhaust w/Actual Emissions (ug/m3)	Offsite-Road Segment 4 Annual DPM Exhaust w/Actual Emissions (ug/m3)	**Total DPM (ug/m3)**
556900.67	4204884.58	677254.2341	0.23021	0.21408	0.33416	0.34386	5.86E-02	2.69E-07	3.03E-07	5.61E-07	5.50E-07	5.8562E-02
556862.73	4204879.12	525499.0753	0.22981	0.21037	0.33830	0.34859	4.54E-02	2.68E-07	2.98E-07	5.67E-07	5.57E-07	4.5440E-02
556897.67	4204899.05	404122.3511	0.22197	0.20697	0.31911	0.32816	3.49E-02	2.59E-07	2.93E-07	5.35E-07	5.25E-07	3.4945E-02
556860.00	4204893.31	353139.4471	0.22186	0.20368	0.32314	0.33273	3.05E-02	2.59E-07	2.88E-07	5.42E-07	5.32E-07	3.0537E-02
556897.67	4204915.15	259159.3207	0.21351	0.19992	0.30345	0.31179	2.24E-02	2.49E-07	2.83E-07	5.09E-07	4.98E-07	2.2410E-02
556858.09	4204910.24	231165.7204	0.21301	0.19632	0.30635	0.31518	2.00E-02	2.49E-07	2.78E-07	5.14E-07	5.04E-07	1.9990E-02
556894.12	4204928.80	191011.4017	0.20658	0.19380	0.29130	0.29914	1.65E-02	2.41E-07	2.74E-07	4.89E-07	4.78E-07	1.6518E-02
556856.72	4204925.53	171387.2487	0.20551	0.19006	0.29235	0.30056	1.48E-02	2.40E-07	2.69E-07	4.90E-07	4.80E-07	1.4821E-02
556891.94	4204945.18	141640.9059	0.19883	0.18709	0.27768	0.28497	1.22E-02	2.32E-07	2.65E-07	4.66E-07	4.55E-07	1.2249E-02
556855.08	4204938.08	138685.8495	0.19959	0.18508	0.28151	0.28918	1.20E-02	2.33E-07	2.62E-07	4.72E-07	4.62E-07	1.1993E-02
556890.30	4204958.01	116218.3542	0.19313	0.18211	0.26785	0.27475	1.00E-02	2.25E-07	2.58E-07	4.49E-07	4.39E-07	1.0050E-02
556850.17	4204952.83	110121.4314	0.19270	0.17907	0.26919	0.27635	9.52E-03	2.25E-07	2.54E-07	4.52E-07	4.42E-07	9.5233E-03
556888.12	4204973.57	93920.9078	0.18637	0.17625	0.25616	0.26258	8.12E-03	2.17E-07	2.50E-07	4.30E-07	4.20E-07	8.1224E-03
556851.81	4204969.21	90761.2220	0.18596	0.17360	0.25699	0.26364	7.85E-03	2.17E-07	2.46E-07	4.31E-07	4.21E-07	7.8492E-03
556849.90	4204983.95	76755.4742	0.17999	0.16850	0.24645	0.25273	6.64E-03	2.10E-07	2.39E-07	4.13E-07	4.04E-07	6.6381E-03
556887.30	4204990.77	76699.2000	0.17935	0.17029	0.24427	0.25021	6.63E-03	2.09E-07	2.41E-07	4.10E-07	4.00E-07	6.6332E-03
556883.75	4205003.60	66921.5723	0.17447	0.16579	0.23611	0.24177	5.79E-03	2.04E-07	2.35E-07	3.96E-07	3.86E-07	5.7877E-03
556847.17	4205000.60	64681.6002	0.17355	0.16296	0.23535	0.24120	5.59E-03	2.03E-07	2.31E-07	3.95E-07	3.86E-07	5.5941E-03
556883.20	4205019.71	57527.3175	0.16874	0.16077	0.22671	0.23202	4.97E-03	1.97E-07	2.28E-07	3.80E-07	3.71E-07	4.9754E-03
556845.80	4205015.89	56210.4943	0.16798	0.15822	0.22579	0.23123	4.86E-03	1.96E-07	2.24E-07	3.79E-07	3.70E-07	4.8615E-03
556879.93	4205035.54	50108.1711	0.16326	0.15582	0.21784	0.22284	4.33E-03	1.91E-07	2.21E-07	3.65E-07	3.56E-07	4.3338E-03
556839.25	4205028.99	49879.2101	0.16320	0.15383	0.21790	0.22305	4.31E-03	1.90E-07	2.18E-07	3.65E-07	3.57E-07	4.3140E-03
556839.80	4205043.46	44698.2804	0.15855	0.14991	0.21016	0.21502	3.86E-03	1.85E-07	2.12E-07	3.53E-07	3.44E-07	3.8660E-03
556877.57	4205050.48	44455.3154	0.15833	0.15140	0.20990	0.21462	3.84E-03	1.85E-07	2.14E-07	3.52E-07	3.43E-07	3.8450E-03
556878.38	4205064.40	40185.5673	0.15411	0.14773	0.20319	0.20767	3.47E-03	1.80E-07	2.09E-07	3.41E-07	3.32E-07	3.4758E-03
556836.25	4205059.29	39719.4139	0.15348	0.14543	0.20187	0.20644	3.43E-03	1.79E-07	2.06E-07	3.39E-07	3.30E-07	3.4355E-03
556833.24	4205074.04	35874.2411	0.14903	0.14147	0.19471	0.19903	3.10E-03	1.74E-07	2.00E-07	3.27E-07	3.18E-07	3.1030E-03
556875.38	4205081.87	35645.0212	0.14897	0.14302	0.19524	0.19947	3.08E-03	1.74E-07	2.03E-07	3.27E-07	3.19E-07	3.0831E-03
556833.24	4205088.78	32701.6584	0.14489	0.13791	0.18811	0.19219	2.83E-03	1.69E-07	1.95E-07	3.16E-07	3.07E-07	2.8286E-03
556869.92	4205096.61	32293.1069	0.14456	0.13899	0.18824	0.19223	2.79E-03	1.69E-07	1.97E-07	3.16E-07	3.07E-07	2.7933E-03
556831.98	4205103.98	29829.9172	0.14075	0.13428	0.18154	0.18539	2.58E-03	1.64E-07	1.90E-07	3.05E-07	2.96E-07	2.5803E-03
556868.83	4205112.45	29337.5257	0.14028	0.13512	0.18159	0.18536	2.54E-03	1.64E-07	1.91E-07	3.05E-07	2.96E-07	2.5377E-03
556867.46	4205125.00	27287.9675	0.13702	0.13222	0.17656	0.18017	2.36E-03	1.60E-07	1.87E-07	2.96E-07	2.88E-07	2.3604E-03
556827.06	4205120.09	27116.7467	0.13640	0.13034	0.17469	0.17832	2.34E-03	1.59E-07	1.85E-07	2.93E-07	2.85E-07	2.3456E-03
556868.01	4205139.47	25235.7684	0.13352	0.12910	0.17124	0.17468	2.18E-03	1.56E-07	1.83E-07	2.87E-07	2.79E-07	2.1830E-03
556826.79	4205133.74	25203.4718	0.13305	0.12741	0.16950	0.17297	2.18E-03	1.55E-07	1.80E-07	2.84E-07	2.76E-07	2.1802E-03
556826.25	4205150.94	23079.9719	0.12901	0.12385	0.16334	0.16657	2.00E-03	1.51E-07	1.75E-07	2.74E-07	2.66E-07	1.9965E-03
556866.10	4205159.13	22761.2543	0.12879	0.12477	0.16402	0.16723	1.97E-03	1.50E-07	1.77E-07	2.75E-07	2.67E-07	1.9690E-03
556866.92	4205174.41	21148.5447	0.12548	0.12178	0.15916	0.16222	1.83E-03	1.46E-07	1.72E-07	2.67E-07	2.59E-07	1.8295E-03
556826.52	4205187.79	19411.1061	0.12107	0.11682	0.15156	0.15442	1.68E-03	1.41E-07	1.65E-07	2.54E-07	2.47E-07	1.6792E-03
556869.10	4205193.25	19404.2139	0.12161	0.11836	0.15352	0.15642	1.68E-03	1.42E-07	1.68E-07	2.58E-07	2.50E-07	1.6786E-03
556830.34	4205203.35	18180.8642	0.11813	0.11426	0.14740	0.15019	1.57E-03	1.38E-07	1.62E-07	2.47E-07	2.40E-07	1.5728E-03
556876.75	4205209.63	18120.9650	0.11868	0.11582	0.14946	0.15223	1.57E-03	1.38E-07	1.64E-07	2.51E-07	2.43E-07	1.5677E-03
556838.53	4205221.09	16955.3089	0.11506	0.11166	0.14328	0.14591	1.47E-03	1.34E-07	1.58E-07	2.40E-07	2.33E-07	1.4668E-03
556886.30	4205227.10	16905.8899	0.11579	0.11328	0.14550	0.14815	1.46E-03	1.35E-07	1.60E-07	2.44E-07	2.37E-07	1.4626E-03
556896.95	4205237.20	16287.2825	0.11441	0.11215	0.14368	0.14627	1.41E-03	1.34E-07	1.59E-07	2.41E-07	2.34E-07	1.4091E-03
556844.53	4205233.92	16146.4120	0.11294	0.10983	0.14042	0.14297	1.40E-03	1.32E-07	1.56E-07	2.36E-07	2.29E-07	1.3969E-03
556850.54	4205248.93	15262.2876	0.11049	0.10769	0.13712	0.13957	1.32E-03	1.29E-07	1.53E-07	2.30E-07	2.23E-07	1.3204E-03
556860.09	4205260.67	14656.3403	0.10884	0.10632	0.13506	0.13745	1.27E-03	1.27E-07	1.51E-07	2.27E-07	2.20E-07	1.2680E-03
556871.56	4205273.78	14024.5927	0.10710	0.10485	0.13290	0.13522	1.21E-03	1.25E-07	1.48E-07	2.23E-07	2.16E-07	1.2134E-03
556884.31	4205284.09	13571.8226	0.10594	0.10391	0.13151	0.13379	1.17E-03	1.24E-07	1.47E-07	2.21E-07	2.14E-07	1.1742E-03
CONCUNIT ug/	m^3											
DEPUNIT g/m^	2											

Richmond Country Club Residential Project

Construction Annual Total PM2.5 Emissions (PM2.5 Total) **Unmitigated Concentrations**

		Maximum PM2.5 Total (ug/m3)	MIR UTM X	MIR UTM Y
Annual Average Onsite Total PM2.5 Emission Rate (grams/m2/sec):	8.65E-08	5.8586E-02	556900.67	4204884.58
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 1 (grams/sec):	1.81E-05			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 2 (grams/sec):	2.20E-05			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 3 (grams/sec):	2.60E-05			
Annual Average Offsite Total PM2.5 Emission Rate - Road Segment 4 (grams/sec):	2.48E-05			

		Unit Emissions	Unit Emissions	Unit Emissions	Unit Emissions	Unit Emissions	Onsite Annual PM2.5 Total w/Actual Emissions	Offsite-Road Segment 1 Annual PM2.5 Total w/Actual Emissions	Offsite-Road Segment 2 Annual PM2.5 Total w/Actual Emissions	Offsite-Road Segment 3 Annual PM2.5 Total w/Actual Emissions	Offsite-Road Segment 4 Annual PM2.5 Total w/Actual Emissions	**Total**
		VALUES AVERAGED	VALUES AVERAGED	VALUES AVERAGED	VALUES AVERAGED	VALUES AVERAGED						**DPM**
X	Y	AVERAGE CONC	AVERAGE CONC	AVERAGE CONC	AVERAGE CONC	AVERAGE CONC	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	**(ug/m3)**
556900.67	4204884.58	677254.2341	0.23021	0.21408	0.33416	0.34386	5.86E-02	4.16E-06	4.70E-06	8.69E-06	8.52E-06	5.8586E-02
556862.73	4204879.12	525499.0753	0.22981	0.21037	0.33830	0.34859	4.54E-02	4.16E-06	4.62E-06	8.80E-06	8.64E-06	4.5465E-02
556897.67	4204899.05	404122.3511	0.22197	0.20697	0.31911	0.32816	3.49E-02	4.02E-06	4.54E-06	8.30E-06	8.13E-06	3.4968E-02
556860.00	4204893.31	353139.4471	0.22186	0.20368	0.32314	0.33273	3.05E-02	4.01E-06	4.47E-06	8.40E-06	8.24E-06	3.0560E-02
556897.67	4204915.15	259159.3207	0.21351	0.19992	0.30345	0.31179	2.24E-02	3.86E-06	4.39E-06	7.89E-06	7.73E-06	2.2433E-02
556858.09	4204910.24	231165.7204	0.21301	0.19632	0.30635	0.31518	2.00E-02	3.85E-06	4.31E-06	7.97E-06	7.81E-06	2.0012E-02
556894.12	4204928.80	191011.4017	0.20658	0.19380	0.29130	0.29914	1.65E-02	3.74E-06	4.25E-06	7.57E-06	7.41E-06	1.6539E-02
556856.72	4204925.53	171387.2487	0.20551	0.19006	0.29235	0.30056	1.48E-02	3.72E-06	4.17E-06	7.60E-06	7.45E-06	1.4842E-02
556891.94	4204945.18	141640.9059	0.19883	0.18709	0.27768	0.28497	1.22E-02	3.60E-06	4.11E-06	7.22E-06	7.06E-06	1.2269E-02
556855.08	4204938.08	138685.8495	0.19959	0.18508	0.28151	0.28918	1.20E-02	3.61E-06	4.06E-06	7.32E-06	7.17E-06	1.2014E-02
556890.30	4204958.01	116218.3542	0.19313	0.18211	0.26785	0.27475	1.00E-02	3.49E-06	4.00E-06	6.96E-06	6.81E-06	1.0070E-02
556850.17	4204952.83	110121.4314	0.19270	0.17907	0.26919	0.27635	9.52E-03	3.49E-06	3.93E-06	7.00E-06	6.85E-06	9.5432E-03
556888.12	4204973.57	93920.9078	0.18637	0.17625	0.25616	0.26258	8.12E-03	3.37E-06	3.87E-06	6.66E-06	6.51E-06	8.1415E-03
556851.81	4204969.21	90761.2220	0.18596	0.17360	0.25699	0.26364	7.85E-03	3.36E-06	3.81E-06	6.68E-06	6.53E-06	7.8683E-03
556849.90	4204983.95	76755.4742	0.17999	0.16850	0.24645	0.25273	6.64E-03	3.26E-06	3.70E-06	6.41E-06	6.26E-06	6.6565E-03
556887.30	4204990.77	76699.2000	0.17935	0.17029	0.24427	0.25021	6.63E-03	3.24E-06	3.74E-06	6.35E-06	6.20E-06	6.6515E-03
556883.75	4205003.60	66921.5723	0.17447	0.16579	0.23611	0.24177	5.79E-03	3.16E-06	3.64E-06	6.14E-06	5.99E-06	5.8054E-03
556847.17	4205000.60	64681.6002	0.17355	0.16296	0.23535	0.24120	5.59E-03	3.14E-06	3.58E-06	6.12E-06	5.98E-06	5.6117E-03
556883.20	4205019.71	57527.3175	0.16874	0.16077	0.22671	0.23202	4.97E-03	3.05E-06	3.53E-06	5.90E-06	5.75E-06	4.9925E-03
556845.80	4205015.89	56210.4943	0.16798	0.15822	0.22579	0.23123	4.86E-03	3.04E-06	3.47E-06	5.87E-06	5.73E-06	4.8785E-03
556879.93	4205035.54	50108.1711	0.16326	0.15582	0.21784	0.22284	4.33E-03	2.95E-06	3.42E-06	5.66E-06	5.52E-06	4.3503E-03
556839.25	4205028.99	49879.2101	0.16320	0.15383	0.21790	0.22305	4.31E-03	2.95E-06	3.38E-06	5.67E-06	5.53E-06	4.3304E-03
556839.80	4205043.46	44698.2804	0.15855	0.14991	0.21016	0.21502	3.86E-03	2.87E-06	3.29E-06	5.46E-06	5.33E-06	3.8819E-03
556877.57	4205050.48	44455.3154	0.15833	0.15140	0.20990	0.21462	3.84E-03	2.86E-06	3.32E-06	5.46E-06	5.32E-06	3.8609E-03
556878.38	4205064.40	40185.5673	0.15411	0.14773	0.20319	0.20767	3.47E-03	2.79E-06	3.24E-06	5.28E-06	5.15E-06	3.4912E-03
556836.25	4205059.29	39719.4139	0.15348	0.14543	0.20187	0.20644	3.43E-03	2.78E-06	3.19E-06	5.25E-06	5.12E-06	3.4508E-03
556833.24	4205074.04	35874.2411	0.14903	0.14147	0.19471	0.19903	3.10E-03	2.70E-06	3.11E-06	5.06E-06	4.93E-06	3.1177E-03
556875.38	4205081.87	35645.0212	0.14897	0.14302	0.19524	0.19947	3.08E-03	2.69E-06	3.14E-06	5.08E-06	4.94E-06	3.0980E-03
556833.24	4205088.78	32701.6584	0.14489	0.13791	0.18811	0.19219	2.83E-03	2.62E-06	3.03E-06	4.89E-06	4.76E-06	2.8429E-03
556869.92	4205096.61	32293.1069	0.14456	0.13899	0.18824	0.19223	2.79E-03	2.62E-06	3.05E-06	4.89E-06	4.76E-06	2.8076E-03
556831.98	4205103.98	29829.9172	0.14075	0.13428	0.18154	0.18539	2.58E-03	2.55E-06	2.95E-06	4.72E-06	4.59E-06	2.5941E-03
556868.83	4205112.45	29337.5257	0.14028	0.13512	0.18159	0.18536	2.54E-03	2.54E-06	2.97E-06	4.72E-06	4.59E-06	2.5516E-03
556867.46	4205125.00	27287.9675	0.13702	0.13222	0.17656	0.18017	2.36E-03	2.48E-06	2.90E-06	4.59E-06	4.46E-06	2.3740E-03
556827.06	4205120.09	27116.7467	0.13640	0.13034	0.17469	0.17832	2.34E-03	2.47E-06	2.86E-06	4.54E-06	4.42E-06	2.3590E-03
556868.01	4205139.47	25235.7684	0.13352	0.12910	0.17124	0.17468	2.18E-03	2.42E-06	2.83E-06	4.45E-06	4.33E-06	2.1961E-03
556826.79	4205133.74	25203.4718	0.13305	0.12741	0.16950	0.17297	2.18E-03	2.41E-06	2.80E-06	4.41E-06	4.29E-06	2.1932E-03
556826.25	4205150.94	23079.9719	0.12901	0.12385	0.16334	0.16657	2.00E-03	2.33E-06	2.72E-06	4.25E-06	4.13E-06	2.0091E-03
556866.10	4205159.13	22761.2543	0.12879	0.12477	0.16402	0.16723	1.97E-03	2.33E-06	2.74E-06	4.27E-06	4.14E-06	1.9816E-03
556866.92	4205174.41	21148.5447	0.12548	0.12178	0.15916	0.16222	1.83E-03	2.27E-06	2.67E-06	4.14E-06	4.02E-06	1.8418E-03
556826.52	4205187.79	19411.1061	0.12107	0.11682	0.15156	0.15442	1.68E-03	2.19E-06	2.56E-06	3.94E-06	3.83E-06	1.6909E-03
556869.10	4205193.25	19404.2139	0.12161	0.11836	0.15352	0.15642	1.68E-03	2.20E-06	2.60E-06	3.99E-06	3.88E-06	1.6905E-03
556830.34	4205203.35	18180.8642	0.11813	0.11426	0.14740	0.15019	1.57E-03	2.14E-06	2.51E-06	3.83E-06	3.72E-06	1.5842E-03
556876.75	4205209.63	18120.9650	0.11868	0.11582	0.14946	0.15223	1.57E-03	2.15E-06	2.54E-06	3.89E-06	3.77E-06	1.5792E-03
556838.53	4205221.09	16955.3089	0.11506	0.11166	0.14328	0.14591	1.47E-03	2.08E-06	2.45E-06	3.73E-06	3.62E-06	1.4780E-03
556886.30	4205227.10	16905.8899	0.11579	0.11328	0.14550	0.14815	1.46E-03	2.09E-06	2.49E-06	3.78E-06	3.67E-06	1.4738E-03
556896.95	4205237.20	16287.2825	0.11441	0.11215	0.14368	0.14627	1.41E-03	2.07E-06	2.46E-06	3.74E-06	3.62E-06	1.4202E-03
556844.53	4205233.92	16146.4120	0.11294	0.10983	0.14042	0.14297	1.40E-03	2.04E-06	2.41E-06	3.65E-06	3.54E-06	1.4078E-03
556850.54	4205248.93	15262.2876	0.11049	0.10769	0.13712	0.13957	1.32E-03	2.00E-06	2.36E-06	3.57E-06	3.46E-06	1.3311E-03
556860.09	4205260.67	14656.3403	0.10884	0.10632	0.13506	0.13745	1.27E-03	1.97E-06	2.33E-06	3.51E-06	3.41E-06	1.2785E-03
556871.56	4205273.78	14024.5927	0.10710	0.10485	0.13290	0.13522	1.21E-03	1.94E-06	2.30E-06	3.46E-06	3.35E-06	1.2237E-03
556884.31	4205284.09	13571.8226	0.10594	0.10391	0.13151	0.13379	1.17E-03	1.92E-06	2.28E-06	3.42E-06	3.32E-06	1.1845E-03
CONCUNIT ug/	m^3											
DEPUNIT g/m^	2											

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A.3 - Additional Air Quality Supporting Information

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Estimation of Demolition Debris

Approximate Size	Area (sq ft)	~H (ft)	Stories	Cubic Feet (sq ft * H)	Cubic Yards (/27)	Empty Space factor	Cubic Yards	
Building space	5,300	10	1	53,000	1,963	648	648	cy
Trees	46,100	80	0	3,688,000	136,593	27,319	27,319	cy
						Total	**27,966**	

Note:
According to FEMA 2010 source, 0.33 empty space factor is applied to cubic yards of building debris. A 0.2 empty space factor was applied to tree removal volumes as reasonable estimate.

Conversion of Tons of Debris to Cubic Yards

Building Demolition	1 cy = 0.4 tons

Totals

Building Demolition	648	cy
Total	**648**	**cy**

Conversions

Building Demolition	**259**	tons of debris
Total	**259**	**tons of debris**

Notes: cy = cubic yards; ft= feet; ~ = approximate; lbs = pounds; sq-feet = square feet; cu-ft = cubic feet

Federal Emergency Management Agency (FEMA). 2010. Debris Estimating Field Guide. September. Website: https://www.fema.gov/pdf/government/grant/pa/fema_329_debris_estimating.pdf. Accessed June 12, 2020.

CalRecycle. 2018. "Calculations: Solid Waste Cleanup Program Weights and Volumes for Project Estimates." Last upated August 20, 2018. Website: https://www.calrecycle.ca.gov/swfacilities/cdi/tools/calculations. Accessed June 12, 2020.

Building square footage to be demolished (It appears that the site is clear other than the area of the golf course which has to be reconfigured)	
Square footage of golf course to be removed for the project	
• Square footage of hardscape to be removed	2,800 sf
• Square footage of softscape to be removed	46,100 sf
Provide information (building square footage) of any other area to be demolished.	2,500 sf

Response above received: 12/11/2020

Notes:
46,100 square feet of soft scape assumed to be total canopy of trees planned for removal. As shown in March 2020 site plans, 13 trees will be removed. Trees are estimated at 80' tall according to Google Earth elevation data. Volume of tree removal material estimated with these numbers and included in Site Preparation phase.

Sr No.	Complaint	Type	Description	Occur Date	Site Number	Alledged Site	Addr	City	Confirmation Status	Distance	Direction
1	228605	ODR	rotten garbage	11/2/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM	2.56 miles	SW
2	228609	ODR	garbage	11/2/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
3	228612	ODR	strong garbage	11/2/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
4	228621	ODR	chemical	11/2/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
5	228624	ODR		11/3/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
6	228625	ODR	compost	11/3/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
7	228626	ODR	rotting	11/3/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
8	228654	ODR	garbage	11/3/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
9	228662	ODR	decomposition	11/4/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
10	228663	ODR	garbage dump	11/4/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
11	228700	ODR	compost	11/7/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
12	228726	ODR	garbage	11/9/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
13	228745	ODR	compost	11/10/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
14	228750	ODR	compost	11/14/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
15	228890	ODR	composting	11/21/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
16	229168	ODR	compost	12/20/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
17	229175	ODR	horrible	12/20/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
18	229178	ODR	garbage	12/20/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
19	229180	ODR	bad	12/20/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
20	229198	ODR	garbage	12/21/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
21	229255	ODR	GARBAGE	12/26/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
22	229299	ODR	compost/chemical	12/27/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
23	229320	ODR	rotten egg	12/28/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
24	229348	ODR	chemical/compost	12/30/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
25	229349	ODR	chemical like	12/30/2016	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
26	229521	ODR	organic fertilizer	1/16/2017	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
27	229523	ODR	chemical	1/16/2017	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
28	230213	ODR	usual garbage	2/23/2017	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
29	230589	ODR		3/13/2017	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
30	230760	ODR	compost	3/17/2017	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
31	231343	ODR	acrid/trash	5/1/2017	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
32	234198	ODR	Manure	2/1/2018	A1840	West Contra Costa County Landfill	1 Parr Boulevard	Richmond	CNFRM		
1	228585	ODR	chemical	11/2/2016	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM	4.16	SW
2	228614	ODR	plastic oil	11/2/2016	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
3	228671	ODR	chemical like	11/4/2016	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
4	229177	ODR	sour	12/20/2016	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
5	230509	ODR	sour, plastic	3/10/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
6	233156	ODR	sour oily	10/23/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
7	233157	ODR	strong sewage	10/23/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
8	233158	ODR	toxic	10/23/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
9	233159	ODR	acrid chemical	10/23/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
10	233160	ODR	petroleum	10/23/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
11	233174	ODR		10/24/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
12	233175	ODR	terrible	10/24/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
13	233192	ODR	acrid	10/24/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
14	233195	ODR	burnt gasoline	10/24/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
15	233197	ODR	stronger	10/24/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
16	233198	ODR	oily sour	10/24/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		
17	233199	ODR	sewage	10/24/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM		

18	233200	ODR	chemical	10/24/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
19	233202	ODR	toxic	10/24/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
20	233204	ODR	burnt compost	10/24/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
21	233208	ODR	gassy	10/25/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
22	233229	ODR	Chemical Odor	10/25/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
23	233241	ODR	strong	10/25/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
24	233243	ODR	poop	10/25/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
25	233244	ODR	chemical	10/25/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
26	233246	ODR	chemical	10/26/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
27	233788	ODR	Chemical Odor	12/13/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
28	234155	ODR	Gas fumes	1/30/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
29	234197	ODR	gasoline	2/1/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
30	239328	ODR	sulfur	3/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
31	239329	ODR	sulfur	3/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
32	239330	ODR	sulfur	3/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
33	239331	ODR	sulfur	3/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
34	239334	ODR	sulfur	3/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
35	239342	ODR	rotten eggs	3/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
36	239630	ODR	flaring	4/4/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
37	233948	OTH	flaring	1/1/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
38	238549	OTH	Huge Flares	12/6/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
39	239627	OTH	flares	4/4/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
40	239628	OTH	flaring	4/4/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
41	239631	OTH	flaring	4/4/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
42	239632	OTH	flare	4/4/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
43	239637	OTH	flaring	4/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
44	239638	OTH	flaring	4/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
45	239639	OTH	flaring	4/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
46	239640	OTH	flaring	4/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
47	239646	OTH	flaring	4/6/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
48	239708	OTH	flaring	4/10/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
49	239709	OTH	flaring	4/10/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
50	239711	OTH	flare	4/10/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
51	239713	OTH	flaring	4/10/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
52	240644	OTH	flaring	7/27/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
53	240645	OTH	flaring	7/27/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
54	240646	OTH	flare	7/27/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
55	240647	OTH	flaring	7/27/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
56	240650	OTH	flaring	7/27/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
57	240660	OTH	flare	7/27/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
58	231426	SMK	flaring	5/3/2017	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
59	234164	SMK	bad gas/smoke smell	1/30/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
60	234165	SMK		1/30/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
61	234300	SMK	flarring	2/8/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
62	234301	SMK	black	2/8/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
63	234303	SMK	Giant plumes of smk	2/8/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
64	234306	SMK	Dark gray smoke	2/8/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
65	234312	SMK	Flaring & hvy smoke	2/8/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
66	235923	SMK	flaring	6/20/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
67	235924	SMK	thick white	6/20/2018	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM
68	239095	SMK	flares	2/5/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM

69	239096	SMK	flaring	2/5/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM				
70	239107	SMK	flaring	2/6/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM				
71	239117	SMK	flaring	2/7/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM				
72	239629	SMK	black	4/4/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM				
73	240549	SMK	black smoke	7/17/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM				
74	240550	SMK	black plume & flair	7/17/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM				
75	240648	SMK	large amount	7/27/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM				
76	240649	SMK		7/27/2019	A0010	Chevron Products Company	841 Chevron Way	Richmond	CNFRM				
1	231606	ODR	sewage	5/16/2017	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM	4.81	SW	4.333333	
2	235317	ODR	sewage, nasty	5/3/2018	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
3	235341	ODR	sewage	5/4/2018	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
4	235528	ODR	sewage	5/18/2018	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
5	238821	ODR	rotten compost/feces	1/10/2019	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
6	241784	ODR	sewage	10/26/2019	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
7	241860	ODR		11/2/2019	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
8	241863	ODR		11/2/2019	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
9	241865	ODR	sewage	11/2/2019	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
10	241867	ODR	sewage	11/2/2019	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
11	241876	ODR	chemical	11/4/2019	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
12	241882	ODR		11/3/2019	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
13	241887	ODR	sewer	11/3/2019	A2482	City of Richmond Water Pollution Control Dist	601 Canal Boulevard	Richmond	CNFRM				
1	234161	SMK	smoke fire recycling	1/30/2018	E3822	Sims Metal Management	600 So 4th Street	Richmond	CNFRM	4.27	S		
1	236369	ODR	cooking oil	7/18/2018	A0927	AAK USA Richmond Corp	1145 Harbour Way, Soutl	Richmond	CNFRM	4.63			
2	241826	ODR	Oil	10/31/2019	A0927	AAK USA Richmond Corp	1145 Harbour Way, Soutl	Richmond	CNFRM	4.63			
1	235689	ODR	chemical odor	5/30/2018	Z4275	Operations Corporation Yard	#6 13th Street	Richmond	CNFRM	3.7			
1	236499	ODR	chemical	7/24/2018	Z4647	Le Chat Nail Product	235 S 2nd	Richmond	CNFRM	3.98			

Appendix B:
Biological Resources Supporting Information

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B.1 - Biological Resources Assessment

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Biological Resources Assessment

MLC HOLDINGS RICHMOND COUNTRY CLUB
RICHMOND, CONTRA COSTA COUNTY, CALIFORNIA





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26210-5

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TABLE OF CONTENTS

1.0 INTRODUCTION 3

2.0 REGULATORY BACKGROUND 3
- 2.1 Sensitive Biological Communities 3
- 2.2 Special-Status Species and Critical Habitat 4
- 2.3 Local Policies, Ordinances, and Regulations 6

3.0 METHODS 6
- 3.1 Biological Communities 7
  - 3.1.1 Non-Sensitive Biological Communities 7
  - 3.1.2 Sensitive Biological Communities 7
- 3.2 Special-Status Species 8
  - 3.2.1 Literature Review 8
  - 3.2.2 Site Assessment 8

4.0 RESULTS 9
- 4.1 Study Area Description 9
- 4.2 Biological Communities 10
- 4.2.1 Non-Sensitive Biological Communities 11
  - 4.2.2 Sensitive Biological Communities 12
- 4.3 Special-Status Species 14
  - 4.3.1 Special-Status Plants 14
  - 4.3.2 Special-Status Wildlife 18
  - 4.3.3 Critical Habitat 19

5.0 POTENTIAL IMPACTS, AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES ..19
- 5.1 Project Description 19
- 5.2 Significance Threshold Criteria 20
- 5.3 Potentially Significant Impacts 21
- 5.4 Mitigation Measures 23

6.0 REFERENCES 25

LIST OF APPENDICES

Appendix A – Project Figures
Appendix B – List of Observed Plant and Wildlife Species
Appendix C – Potential for Special-Status Species to Occur in the Study Area
Appendix D – Site Photographs

LIST OF TABLES

Table 1. Description of CNPS Ranks and Threat Codes 5
Table 1. Description of East Bay CNPS Rare Plant Rankings.....6
Table 3. Summary of Biological Communities in the Study Area.....11

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1.0 INTRODUCTION

WRA, Inc. (WRA) prepared this biological resources assessment (BRA) report on behalf of MLC Holdings, Inc. for a proposed residential development project (Project). The proposed Project involves the subdivision and development of 88 single-family residential lots on an approximately 26.42-acre portion of the Richmond Country Club property located at 1 Markovich Lane (APNs #405-050-019, and -006), in the northern portion of the City of Richmond, Contra Costa County, California (Study Area; Appendix A, Figure 1). The purpose of the assessment was to gather information necessary to assess if any sensitive habitats that would support rare, threatened, or endangered species are present on the site.

This report describes the results of the site visits, which assessed the Study Area for the (1) potential to support special-status species, (2) the potential presence of sensitive biological communities such as wetlands or riparian habitats, and (3) the potential presence of other sensitive biological resources protected by local, state, and federal laws and regulations. Specific findings on the habitat suitability or the presence of special-status species or sensitive habitats may require that protocol-level surveys be conducted.

A BRA provides general information on the potential presence of sensitive species and habitats. The BRA is not an official protocol-level survey for listed species that may be required for project approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit.

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the BRA, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

2.1 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Clean Water Act; state regulations such as the Porter-Cologne Act, the California Fish and Game Code (CFGC), and the CEQA; or local ordinances or policies such as city or county tree ordinances, Special Habitat Management Areas, and General Plan Elements.

Waters of the United States

The U.S. Army Corps of Engineers (Corps) regulates “Waters of the United States” under Section 404 of the Clean Water Act. Waters of the U.S. are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as “other waters” or “non-wetland waters” and are often characterized by an ordinary high water mark (OHWM). Other waters or non-wetland waters, for example, generally include lakes, rivers, and streams. The

placement of fill material into Waters of the U.S generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

Waters of the State

The term “Waters of the State” is defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes “isolated” wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife (CDFW, formerly the California Department of Fish and Game [CDFG]). The CDFW ranks sensitive communities and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2018). In the CNDDB, vegetation alliances are ranked 1 through 5 based on NatureServe's (2016) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (California Code of Regulations [CCR] Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in city or county general plans or ordinances.

2.2 Special-Status Species and Critical Habitat

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. In addition, CDFW Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, CDFW California Fully Protected species, USFWS Birds of Conservation Concern, and CDFW special-status invertebrates, are all considered special-status species. Although these aforementioned species generally have no special legal status, they are given special consideration under CEQA. Bat species are also evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity; bats named as a “High Priority” or “Medium Priority” species for conservation by the WBWG are typically considered special-status and are considered under CEQA. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with

California Rare Plant Ranks (Rank) of 1 through 4 are also considered special-status plant species and must be considered under the CEQA. A description of the CNPS Ranks is provided below in Table 1. In addition to regulations for special-status species, most birds in the United States, including non-special-status native species, have baseline legal protections under the federal Migratory Bird Treaty Act of 1918 (MBTA) and the CFGC. Under these laws/codes, deliberately harming or collecting covered species is prohibited, including their active nests (those with eggs, or young).

Table 1. Description of CNPS Ranks and Threat Codes

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

Locally Rare, Unusual, and Significant Plants

Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties, Eighth Edition (Lake 2010) is a document produced by the East Bay Chapter of the CNPS that lists 608 plant taxa which are considered locally rare, unusual, or significant in Alameda and Contra Costa counties. Of these 608 species, 313 occur in two or fewer regions in Alameda and Contra Costa counties (ranked A1 in the East Bay), 231 occur in five or fewer regions in the two counties or are otherwise threatened (ranked A2 in the East Bay), and 64 are only known form the area historically and are presumed to have been extirpated from the East Bay during the last 100 year (A1x) [see Table 2 below]. A-ranked species receive consideration under sections 15380 and 15125(c) of the CEQA and are considered “locally rare” for the purposes of this report. Any locally rare species observed in the Study Area are discussed in this report.

Table 1. Description of East Bay CNPS Rare Plant Rankings

Rank	Description
A1	Species occurring in two or fewer regions in Alameda and Contra Costa counties
A1x	Species presumed extirpated from Alameda and Contra Costa counties
A1?	Species possibly occurring in Alameda and Contra Costa counties. Identification or location is uncertain
A2	Plants occurring in three to five regions or are otherwise threatened in Alameda and Contra Costa counties.
B	Species occurring in six to nine regions or are otherwise threatened in Alameda and Contra Costa counties (high priority watch list).
C	Species occurring in 10 to 15 regions or are otherwise threatened in Alameda and Contra Costa counties (second priority watch list).

*Ranks preceded by an asterisk (e.g. "*A1") also have a statewide rarity ranking.
*Species on the watch lists (ranks B and C) are not considered to be special-status based on the CEQA guidelines.

Critical Habitat

Critical habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

2.3 Local Policies, Ordinances, and Regulations

City of Richmond Tree Ordinance

The City of Richmond has established regulations governing the trimming, pruning, care, planting, and removal of trees, shrubs and other plants on public property within the city limits. The ordinance prohibits the removal, cutting, trimming, pruning, planting, or injury of any tree shrub or plant on any street, park, boulevard, alley, or public place in the City of Richmond without a permit from the Recreation and Parks Director of the City of Richmond.

3.0 METHODS

WRA biologists conducted site visits on January 10, March 4, and July 18, 2019. The Study Area was traversed on foot to determine (1) plant communities present within the Study Area, (2) whether existing conditions provide suitable habitat for any special-status plant or wildlife species, and (3) whether sensitive habitats are present. All plant and wildlife species encountered were recorded and are summarized in Appendix A. Plant nomenclature follows Baldwin et al. (2012) and subsequent revisions by the Jepson Flora Project (2019), except where noted. For cases in which regulatory agencies, CNPS, or other entities base rarity on older taxonomic treatments, precedence was given to the treatment used by those entities. Special-status species with a

potential for occurrence, determined based on field visits and habitat availability, are described in Appendix B. Representative photographs of the Study Area taken during field visits are included in Appendix C.

3.1 Biological Communities

Prior to the site visit, the *Soil Survey of Contra Costa County, California* (USDA 1977) and SoilWeb (CSRL 2019) were examined to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Study Area. Biological communities present in the Study Area were classified based on existing plant community descriptions described in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) or *A Manual of California Vegetation, Online Edition* (CNPS 2019a). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

3.1.1 Non-Sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations and ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species and are identified or described in Section 4.1.1 below.

3.1.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Special methods used to identify sensitive biological communities are discussed below.

Wetlands and Non-Wetland Waters

Wetlands and non-wetland waters potentially subject to jurisdiction by the Corps, RWQCB, and/or CDFW were mapped following standard methods from the Corps (Environmental Laboratory 1987, Corps 2008a, b). Identification of wetlands focused on the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) indicators of wetland hydrology. Identification of non-wetland waters focused on the presence of an OHWM.

Other Sensitive Biological Communities

The Study Area was evaluated for the presence of other sensitive biological communities, including riparian areas or other sensitive plant communities recognized by CDFW. Prior to the site visit, aerial photographs, local soil maps, and *A Manual of California Vegetation, Online Edition* (CNPS 2019a) were reviewed to assess the potential for sensitive biological communities to occur in the Study Area. All alliances within the Study Area with a ranking of 1 through 3 were considered sensitive biological communities and mapped. These communities are described in Section 4.1.2 below.

3.2 Special-Status Species

3.2.1 Literature Review

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database search. Database searches for known occurrences of special-status species focused on the Antioch South 7.5-minute U.S. Geological Survey (USGS) quadrangle and the eight surrounding quadrangles: Antioch North, Jersey Island, Brentwood, Byron Hot Springs, Tassajara, Diablo, Clayton, Walnut Creek, and Honker Bay. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Study Area:

- CNDDB records (CDFW 2019)
- USFWS Information for Planning and Conservation Report (IPaC; USFWS 2019a)
- National Wetlands Inventory (USFWS 2019b)
- CNPS Rare and Endangered Plant Inventory (CNPS 2019b)
- CDFG publication, *California Bird Species of Special Concern* (Shuford and Gardali 2008)
- USFWS Critical Habitat Mapper (USFWS 2019c)
- CDFW and University of California Press publication, *California Amphibian and Reptile Species of Special Concern* (Thomson *et al.* 2016)
- California Department of Fish and Game publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- Western Bat Working Group, species accounts (WBWG 2019)

3.2.2 Site Assessment

A site visit was made to the Study Area to search for suitable habitats for special-status species. Habitat conditions observed at the Project Site were used to evaluate the potential for presence of special-status species based on these searches and the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then evaluated according to the following criteria:

- **No Potential:** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely:** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential:** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential:** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present:** Species is observed on the site or has been recorded (i.e., CNDDB, other reports) on the site recently.

- **Not Present:** Species was not observed during protocol-level site-wide special-status plant survey conducted during a period sufficient to identify the species.
- **Presence Unknown:** Species was determined to have a moderate or high potential to occur in the Study Area, but the site visits were conducted outside of the documented bloom period.

The site assessment is intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity in order to determine its potential to occur in the Study Area. The January and July site visits constituted protocol-level surveys for special-status plant species. If a special-status species is observed during the site visit, its presence will be recorded and discussed.

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of WRA biologists with experience working with the species and habitats. If necessary, recognized experts in individual species biology were contacted to obtain the most up to date information regarding species biology and ecology.

For some species, a site assessment conducted during the January and July site visits may not be sufficient to determine presence or absence of a species to the specifications of regulatory agencies. For species determined to have a moderate or high potential to occur in the Study Area, not covered by the January or July rare plant surveys, further protocol-level special-status species surveys may be necessary. Special-status species for which further protocol-level surveys may be necessary are described below in Section 5.0.

4.0 RESULTS

A general description of the Study Area and the results of the site assessment are provided in the following sections. Project figures are provided in Appendix A. A list of plant and wildlife species observed is included as Appendix B. The assessment of the potential for special-status plant and wildlife species to occur in the Study Area is provided as Appendix C. Photographs of the Study Area are provided as Appendix D.

4.1 Study Area Description

The Study Area consists of approximately 26.42 acres of land owned by the Richmond Country Club, east of Giant Highway and north of Richmond Parkway, approximately 0.35 miles east of San Pablo Bay. The Study Area was delineated based on the outer extent of the project boundary and limit of grade, shown on the Preliminary Application Conceptual Grading, Drainage, and Utility Plan (CBG 2019). The limit of grade (i.e. Project Area, Project footprint) is 24.82 acres within the larger Study Area. Non-sensitive biological communities including ruderal, non-native annual grassland, a planted blue gum (Eucalyptus globulus) grove, and previously developed areas, including the westernmost portion of the existing golf course, characterize the majority of the site. The Study Area is predominantly west-facing, with gently rolling hills that slope to the west. Remnant patches of native bunchgrass grasslands are also present in the western portion of the Study Area. Historic aerials and the Richmond Country Club website indicate that the site has been in use as a golf course since 1924 (NETR 2019, Richmond Country Club 2019). Undeveloped portions of the Study Area vary in previous anthropogenic disturbance; much of the northern portion of the Study Area has been historically and is currently used as slash piles from golf course vegetation management.

Topography and Soils

The topography in the Study Area consists of gently rolling, low, west facing slopes with elevations ranging from approximately 100 feet to 50 feet above mean sea level (amsl). SoilWeb (USDA 2018a) indicates that the Study Area contains two native soil types composed of one soil series: Tierra loam, 2 to 9 percent slopes, MLRA 14; and Tierra loam, 9 to 15 percent slopes, MLRA14 , as depicted in Appendix A, Figure 2. The majority of observed soils within the Study Area appeared to be native with occasional areas of soil disturbance from previous excavation, scraping, or debris stockpiling. Soil series that make up the soil mapping units are described below.

Tierra Series: The Tierra series consists of deep, moderately well drained soils that formed in alluvial materials from sedimentary rocks. These soils are typically situated on dissected terraces and low hills with slopes of 2 to 50 percent. In a typical profile, the surface layer (Ap/A12 horizon) consists of a strongly to medium acid (pH 5.5 to 6.0), very dark grayish brown (10YR 3/2) to very dark gray (10YR 3/1) fine sandy loam or loam from 0 to 11 inches depth. This is underlain by a B21t/B22t layer of slightly acid (pH 6.5), very dark brown (20YR 2/2) to dark brown (10YR 3/3), clay from 12 to 15 inches depth. This is underlain by a B3 layer of moderately alkaline (pH 8.0) grayish brown (10YR 5/2) heavy clay loam with many prominent reddish brown (5YR 5/4, 4/4) mottles from 25 to 43 inches depth. This is underlain by a C layer of mildly alkaline (pH 7.5), dark brown (10YR 4/3), clay loam with many large prominent reddish brown (2.5YR 5/4) and yellowish brown (10YR 5/4) mottles (CSRL 2019). Tierra loam, 2 to 9 percent slopes, MLRA 14; and Tierra loam, 9 to 15 percent slopes, MLRA14 are not considered hydric soils (USDA 2019b).

Climate and Hydrology

The Study Area is located within the coastal fog belt of the Bay Area. Average annual precipitation for Richmond (047414), located approximately 5 miles south-southwest (SSW), is 23.14 inches, with the majority falling as rain in the winter months (November through March). The mean monthly low and high temperatures in degrees Fahrenheit range from 42.6 in January to 74.1 in July (WRCC 2019). Persistent fog is common during the summer months.

The Study Area is located within the San Pablo Bay watershed (HUC #18050002). The primary hydrologic source for the Study Area is direct precipitation, and runoff from surrounding areas to the east, which includes potential supplemental irrigation runoff from irrigation of the golf course.

4.2 Biological Communities

Table 3 summarizes the area of each biological community type observed in the Study Area. Non-sensitive biological communities include: non-native annual grassland, blue gum grove, developed/landscaped, and disturbed areas. Potentially sensitive biological communities include: seasonal wetland, ephemeral drainage, pond, and arroyo willow thicket. Descriptions of each biological community are included in the following sections and are depicted on Figure 3 of Appendix A.

Table 3. Summary of Biological Communities in the Study Area

Biological Community Type	Area (acres)
Non-sensitive	
Developed/landscaped	8.82
Disturbed	1.54
Non-native grassland	3.46
Blue gum grove	11.93
Subtotal	**25.75**
Potentially Sensitive	
Ephemeral drainage	0.07
Seasonal wetland	0.20
Pond	0.01
Arroyo willow thicket	0.02
Purple needlegrass grassland	0.02
Creeping ryegrass turfs (grassland)	0.35
Subtotal	**0.67**
Total	**26.42**

4.2.1 Non-Sensitive Biological Communities

Blue gum grove (Eucalyptus spp. – Ailanthus altissima – Robinia pseudoacacia Woodland Semi-Natural Alliance; Alliance Rarity Ranking: Global, and State No Rank). The majority of the Study Area, approximately 11.93 acres, consists of a planted windrow of blue gum eucalyptus (*Eucalyptus globulus*), located along the western edge of the existing golf course. Blue gum, is a tall non-native evergreen broadleaf tree, native to Australia, and is considered highly invasive in California (Cal-IPC 2019). Blue gum grove in the Study Area was mapped in accordance with CNPS (2019a) as having eucalyptus species greater than 80 percent relative cover in the tree canopy. Within the Study Area, blue gum groves are dominated by a near monotypic stand of blue gum in the tree canopy, with occasional planted, sub-dominant Monterey pine (*Pinus radiata*) trees. The understory is relatively open, and is dominated by young blue gum saplings, toyon (*Heteromeles arbutifolia*), poison oak (*Toxicodendron diversilobum*), and French broom (*Genista monspessulana*). The herbaceous layer consists of sparse to dense cover of non-native invasive grasses and forbs including slim oat (*Avena barbata*), Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), Bermuda buttercup (*Oxalis pes-caprae*), and fumitory (*Fumaria* sp.). Blue gum grove is not considered a sensitive biological community.

Non-native grassland. The Study Area contains approximately 3.46 acres of non-native grasslands variably dominated by non-native annual, and perennial, rhizomatous species. Non-native grasslands within the Study Area were typically dominated by a variety of non-native annual and perennial grasses, including slim oat, ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), kikuyu grass (*Pennisetum clandestinum*), and crabgrass (*Digitaria sanguinalis*). Common forbs in the herbaceous layer included wild radish (*Raphanus sativus*), hairy cat's ear

(*Hypochaeris radicata*), Indian teasel (*Dipsacus sativus*), Italian thistle, and sheep sorrel (*Rumex acetosella*). Occasional emergent native and non-native shrubs are present at low cover, including coyote brush (*Baccharis pilularis*), French broom (*Genista monspessulana*), and Scotch broom (*Cytisus scoparius*). Non-native grasslands are not considered a sensitive biological community.

Developed/landscaped. The Study Area contains approximately 8.82 acres of developed/landscaped areas in the eastern and southern portions of the Study Area. Developed/landscaped portions of the Study Area include portions of the existing golf course, and associated asphalt golf cart track, in the eastern portion of the Study Area, adjacent to the windrow of blue gum, a single-family residence and associated landscaped ornamental trees and shrubs in the south east corner of the Study Area, and portions of the road and railroad tracks in the public and/or railroad right-of-way at the intersection of Giant Road, and Giant Highway. Vegetation within the developed/landscaped areas is composed of irrigated, mowed perennial grass turfs (i.e. golf course), and planted native and non-native ornamental trees including Monterey pine (*Pinus radiata*), coast redwood (*Sequoia sempervirens*), blackwood acacia (*Acacia melanoxylon*), and cabbage tree (*Cordyline australis*). Developed/landscaped areas are not considered a sensitive biological community.

Disturbed. The Study Area contains approximately 1.54 acres of disturbed areas. Disturbed portions of the Study Area include areas used for soil and vegetation stockpiling associated with golf course maintenance. Disturbed areas within the Study Area have undergone varying levels of anthropogenic disturbance, from soil excavation and vegetation removal, to soil and debris stockpiling. Disturbed areas are typically low in vegetative cover due to the lack of top soil, and thickness of the vegetative debris layer. Vegetation associated with disturbed portions of the Study Area include non-native invasive saplings, shrubs, and forbs including French broom, Scotch broom, blue gum, and kikuyu grass. Disturbed areas are not considered a sensitive biological community.

4.2.2 Sensitive Biological Communities

Ephemeral drainage. The Study Area contains three potentially jurisdictional ephemeral drainage features totaling approximately 0.07 acre (292 linear feet). All three features (originate from culverts. Two of the three features are located in the southernmost portion of the Study Area, where an approximately 10-foot long drainage channel originates from a culvert in the southeast corner of the Study Area, which fans out to sheet flow over uplands to the west. The second ephemeral drainage, located in the southwest corner of the Study Area consists of an erosional headcut likely caused by sheet flow and subsurface flow originating from the culvert in the southeast corner of the Study Area. The third, and longest ephemeral drainage feature originates from a culvert at the western edge of the golf course, and is bordered on its upstream and downstream ends by seasonal wetlands. The precise origin of the contributing hydrology to these features was not ascertained, and contributing hydrology is likely in part influenced by golf course irrigation. These features flow off-site and under the bordering railroad tracks to the east via culverts beneath the railroad tracks, are assumed to ultimately drain into the San Pablo Bay. Areas mapped as ephemeral drainage are likely considered jurisdictional under Sections 401 and 404 of the CWA, the Porter-Cologne Water Quality Control Act, and CDFW jurisdiction under Sections 1600-1616 of the CFGC.

Seasonal wetland. The Study Area contains six potential seasonal wetland features totaling approximately 0.20 acre. Seasonal wetlands in the Study Area are typically situated in slightly concave depressions and low points between convex hillslopes where water drains through.

Seasonal wetlands in the Study Area are typically dominated by facultative hydrophytic grasses and forbs including Italian ryegrass (*Festuca perennis*), English plantain (*Plantago lanceolata*), curly dock (*Rumex crispus*), and Pacific aster (*Symphyotrichum chilense*). Indicators of wetland hydrology observed included surface water, saturation, and high water table, observed during the January site visit, and biotic crusts observed during the July and August site visits. Soils observed within potential seasonal wetland features were typically clay to clay loam soils with dark or depleted matrices with varying levels of redoximorphic concentrations, between 2 and 10 percent. Areas mapped as seasonal wetland were dominated by hydrophytic vegetation, and contained indicators of hydrology, and hydric soils, sufficient to meet the requirements as jurisdictional features under Sections 401 and 404 of the CWA and the Porter-Cologne Water Quality Control Act. Two seasonal wetlands associated with the ephemeral drainage are also likely considered CDFW jurisdiction under Sections 1600-1616 of the CFGC.

Pond. The Study Area contains one presumably man-made pond within the northern portion of the Study Area, totaling approximately 0.01 acre. The pond is situated at the toe of a slope beneath a disturbed hillside, which is currently used as a debris pile. Historical aerial photographs (Google Earth 2019) indicate that this feature was likely excavated in dry land sometime between 1993 and 2002, and has been persistent up to the time of the site visit. The pond was inundated during the January site visit, and water depth appeared to be 2 to 3 feet deep. However, this feature dries down during the dry season, and contained sparse cover (less than 5 percent) of swamp grass (*Crypsis schoenoides*). Although the pond was likely excavated in dry land, incidental to construction activity or fill procurement, the feature appears to be abandoned, and is currently meeting indicators of OHWM. Therefore, the pond may be considered jurisdictional under Sections 401 and 404 of the CWA, the Porter-Cologne Water Quality Control Act, and CDFW jurisdiction under Sections 1600-1616 of the CFGC.

Arroyo willow thicket (*Salix lasiolepis* Shrubland Alliance; Alliance Rarity Ranking: G4, S4). The Study Area contains approximately 0.02 acre of arroyo willow (*Salix lasiolepis*) thicket associated with the man-made pond in the northwest portion of the Study Area. This community was mapped according to CNPS (2019a) as having greater than 50 percent cover of arroyo willow in the tree or shrub community. This small, discrete patch of arroyo willow is composed of a monotypic stand of young, shrub-form arroyo willow, which appears to have become established between 2005 and 2009 (Google Earth 2019). The arroyo willow thicket within the Study Area is located on a slightly convex slope above the pond, and does not meet wetland criteria. However, as it is associated with the pond, the area mapped as arroyo willow thicket may be considered riparian vegetation subject to CDFW jurisdiction under Sections 1600-1616 of the CFGC.

Purple needlegrass grassland (*Stipa* [*Nassella*] *spp. – Melica spp.* Herbaceous Alliance; Alliance Rarity Ranking: G4, S4; Association Rarity Ranking: Sensitive). Purple needlegrass grassland occupies approximately 0.02 acre in the eastern portion of the Study Area, predominantly outside of and to the east of the chain-link fence. This community was mapped within portions of the Study Area containing purple needlegrass (*Stipa* [*Nassella*] *pulchra*) at 10 percent relative cover or greater within the herbaceous layer (CNPS 2019b). Within the Study Area, this community was dominated by purple needlegrass at approximately 20 to 45 percent relative cover with other predominantly non-native grasses and forbs present including slim oat (*Avena barbata*), spring vetch (*Vicia sativa*), and English plantain (*Plantago lanceolata*). Although purple needlegrass grassland was recently lumped by CDFW into the Needlegrass – Melic Grassland Alliance which is considered apparently secure globally and in California (i.e., G4, S4), purple needlegrass grassland within the Study Area fits within the membership rules of the *Stipa* [*Nassella*] *pulchra – Plantago lanceolata* Association, which is considered sensitive by the CDFW (CDFW 2019b). Although, purple needlegrass grassland within the Study Area is relatively

disturbed and contains a low diversity of associated native forbs, this community maybe considered sensitive under CEQA, due to its association-level sensitivity ranking, and impacts to this community may require mitigation.

Creeping ryegrass grassland (*Elymus* [*Leymus*] *cinereus – Elymus* [*Leymus*] *triticoides* Herbaceous Alliance, Ashy ryegrass - creeping ryegrass turfs; Alliance rarity ranking: G3, S3). Creeping ryegrass grassland occupies approximately 0.35 acre in the eastern portion of the Study Area, along predominantly west-facing slopes. This community was mapped within portions of the Study Area containing creeping ryegrass (*Elymus* [*Leymus*] *triticoides*) at 30 percent relative cover or greater within the herbaceous layer (CNPS 2019b). Within the Study Area, this community was dominated by creeping ryegrass at approximately 20 to 40 percent relative cover with other predominantly non-native grasses and forbs present including Italian ryegrass, soft chess (*Bromus hordeaceus*), curly dock, and wild radish (*Raphanus sativus*). Creeping ryegrass grassland within the Study Area is composed of discrete patches within a mosaic of disturbed, non-native annual grasslands. Although creeping ryegrass grassland within the Study Area is relatively disturbed and contains a low diversity of native forbs, creeping ryegrass grassland has a rarity ranking of G3, S3 meaning it is considered apparently vulnerable globally and within California, and this community maybe considered sensitive under CEQA.

4.3 Special-Status Species

4.3.1 Special-Status Plants

Based upon a review of the resources and databases listed in Section 3.2.1 for the Benicia, Briones Valley, Mare Island, Oakland East, Oakland West, Petaluma Point, Richmond, San Francisco North, and San Quentin 7.5-minute USGS quadrangles, it was determined that 95 special-status plant species have been documented from the vicinity of the Study Area; special-status plant species documented from within 5 miles of the site are shown on Figure 3. Of the 95 special-status plant species known from the region, eight were determined to have a moderate or high potential to occur based on habitat suitability and availability. The remaining 87 special-status plant species are unlikely or have no potential to occur within the Study Area due to one or more of the following factors:

- The previously developed and disturbed nature of the site has diminished local habitat availability for special-status plant species, and likely precludes the species from persisting in the Study Area;
- The species has a very limited range of endemism and has never been observed in the vicinity of the Study Area;
- Vegetation communities commonly associated with the special-status species (e.g. vernal pools, cismontane woodland, chaparral, marshes and swamps) are absent from the Study Area;
- Specific edaphic characteristics, such as soil derived from serpentine, volcanics, or limestone are absent from the Study Area;
- Specific hydrologic characteristics, such as perennial saline, are absent from the Study Area.

All species that were determined to have a moderate or high potential to occur are discussed below. Two protocol-level rare plant survey were conducted in the Study Area on January 10, and July 18, 2019. The surveys were conducted during a period sufficient to identify four of the nine species with potential to occur in the Study Area including big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), johnny-nip (*Castilleja ambigua* var. *ambigua*), Diablo

helianthella (*Helianthella castanea*), and Santa Cruz (*Holocarpha macradenia*). No state-wide special-status plant species, nor locally rare species were observed in the Study Area during the July survey. The January and July site visits were conducted outside of the documented bloom period sufficient to identify the remaining species with potential to occur in the Study Area. All species with a moderate or high potential to occur are discussed in detail below.

Special-status plant species determined not present in the Study Area:

Johnny-nip (*Castilleja ambigua* var. *ambigua*), CRPR 4. Not present (initially assessed: Moderate Potential). Johnny-nip is an annual hemi-parasitic forb in broomrape family (Orobanchaceae) that blooms from March through August. It typically occurs in coastal bluff scrub, coastal scrub, coastal prairie, marshes and swamps, valley and foothill grassland, and vernal pool habitat at elevations ranging from 0 to 1,415 feet. Known associated species include Italian ryegrass (*Festuca perennis*), Blasdale's bentgrass (*Agrsotis blasdalei*), coastal coyote thistle (*Eryngium armatum*), cutleaf plantain (*Plantago coronopus*), hairy cat's ear (*Hypochaeris radicata*), common velvet grass (*Holcus lanatus*), sweet vernal grass (*Anthoxanthum odoratum*), and cream cups (*Platystemon californicus*) (personal observation 2019).

Johnny-nip is known from 38 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Del Norte, Humboldt, Mendocino, Marin, Napa, Santa Cruz, San Francisco, San Luis Obispo, San Mateo and Sonoma counties (CNPS 2019). There are 0 CCH (2019) records from Contra Costa County, and 1 CCH record from Alameda County. However, johnny-nip is included on a checklist of wild plants for the nearby Point Pinole Regional Shoreline (EBRPD 2012). Johnny-nip was initially evaluated to have a moderate potential to occur in the Study Area due to the presence of associated species, vegetation types, and seasonal wetlands, but it was not observed during the July protocol-level rare plant survey, conducted during a period sufficient to identify the species.

Diablo helianthella (*Hellianthella castanea*), CRPR 1B. Not present (initially assessed: Moderate Potential) Diablo Helianthella is a woody perennial species in the sunflower (Asteraceae) family that blooms from March through June. It typically occurs in broadleaved upland forest, chaparral, cistmontane woodland, coastal scrub, and valley and foothill grassland, often on rocky substrates at elevations ranging from 180 to 3,900 feet (60-1,300 meters). (CNPS 2019, CDFW 2019). Known associated species include California bay (*Umbellularia californica*), poison oak (*Toxicodendron diversilobum*), interior live oak (*Quercus wislizenii*), sticky monkey flower (*Mimulus aurantiacus*), coyote bush (*Baccharis pilularis*), purple needlegrass (*Stipa pulchra*) narrow-leaf mules ears (*Wyethia angustifolia*), hummingbird sage (*Salvia spathacea*) chamise (*Adenostoma fasciculata*), wild oat (*Avena* spp.), and ripgut brome (*Bromus diandrus*) (CDFW 2019).

Diablo helianthella is known from 19 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Marin, San Francisco, and San Mateo counties (CNPS 2019). There are 33 CNDDB (CDFW 2019) records in the greater vicinity of the Study Area, 38 CCH (2019) records from Contra Costa County, and 4 CCH record from Alameda County. The nearest documented occurrence is less than 5 miles east of the Study Area from Pinole Valley Park (CDFW 2019). Diablo helieanthella was initially evaluated to have a high potential to occur in the Study Area due to the presence of potentially suitable grassland habitat, associated species, and proximity to several documented occurences, but it was not observed during the July protocol-level rare plant survey, conducted during a period sufficient to identify the species.

Santa Cruz tarplant (*Holocarpha macradenia*). Federal Threatened, State Endangered, CRPR 1B. Not present (initially assessed: Moderate Potential). Santa Cruz tarplant is an annual forb in the sunflower family (Asteraceae) that blooms from June to October. It typically

occurs on light, sandy clay to sandy soils in coastal prairie, valley and foothill grassland, and coastal scrub habitat at elevations ranging from 30 to 715 feet (CDFW 2019, CNPS 2019b). Observed associated species include coyote brush (*Baccharis pilularis*), sticky monkeyflower (*Diplacus aurantiacus*), soft chess, ripgut brome, salt grass (*Distichlis spicata*), Italian rye grass (*Festuca perennis*), California oat grass (*Danthonia californica*), rattlesnake grass (*Briza maxima*), nit grass (*Gastridium phleoides*), purple needlegrass (*Stipa pulchra*), annual hair grass (*Deschampsia danthonioides*), coast tarweed (*Madia sativa*), and white hayfield tarweed (*Hemizonia congesta* ssp. *luzulifolia*) (CDFW 2019).

This species is known from 13 USGS 7.5-minute quadrangles in Monterey, Santa Cruz, and Solano counties (CNPS 2019). The species is presumed extirpated from Marin, Alameda, and Contra Costa counties. All extant Contra Costa County occurrences of the species were experimental introductions into the species historic native range. Nearly half of those populations have failed (CNPS 2019b). This species was observed in full bloom at a documented reference site, one of the introduced populations, in Wildcat Canyon Regional Park, approximately 4.8 miles southeast of the Study Area on July 17, 2019, one day before the July site visit. However, this species was not observed in the Study Area and is presumed absent.

Special-status plant species with potential to occur in the Study Area, not covered by January or July surveys:

Bent-flowered fiddleneck (*Amsinckia lunaris*). CRPR 1B.2. Moderate Potential. Bent-flowered fiddleneck is an annual forb in the forget-me-not family (Boraginaceae) that blooms from March to June. It typically occurs in open areas within cismontane woodland, valley and foothill grassland, and coastal bluff scrub habitat often underlain by clay substrate at elevations ranging from 10 to 1,625 feet (CDFW 2019, CNPS 2019b). Observed associated species include coast live oak (*Quercus agrifolia*), blue oak (*Quercus douglasii*), buck brush (*Ceanothus cuneatus*), poison oak, miniature lupine (*Lupinus bicolor*), foothill lotus (*Acmispon brachycarpus*), calf lotus (*A. wrangelianus*), fringe pod (*Thysanocarpus curvipes*), q-tips (*Micropus californicus*), cream cups (*Platystemon californicus*), slender tarweed (*Madia gracilis*), common yarrow (*Achillea millefolium*), goldenback fern (*Pentagramma triangularis*), one-sided bluegrass (*Poa secunda*), woolly sunflower (*Eriophyllum lanatum*), California manroot (*Marah fabacea*), coast rockcress (*Arabis blepharophylla*), and slim oat (*Avena barbata*) (CDFW 2019).

Bent-flowered fiddleneck is known from 35 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Colusa, Lake, Marin, Napa, San Benito, Santa Clara, Santa Cruz, San Mateo, and Yolo counties (CNPS 2019). There are 23 CNDDB (CDFW 2019) records in the greater vicinity of the Study Area, 12 CCH (2019) records from Contra Costa County, and four CCH (2013) records from Alameda County. The nearest documented occurrence is from 1995 from Sobrante Ridge approximately 6.2 miles east-southeast (ESE) of the Study Area (CDFW 2019). Bent-flowered fiddleneck has a moderate potential to occur within the Study Area due to the presence of potentially suitable grassland habitat and proximity to several documented occurrences.

Oakland star-tulip (*Calochortus umbellatus*). CRPR 4.2. Moderate Potential. Oakland star-tulip is a perennial herb in the lily family (Liliaceae) that blooms from March to May. It typically occurs in broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland, often on serpentine substrate, at elevations ranging from 330 to 2,300 feet (CDFW 2019, CNPS 2019). Observed associated species include coast live oak, musk brush (*Ceanothus jepsonii*), purple needlegrass, bracken fern (*Pteridium aquilinum*), soap root (*Chlorogalum pomeridianum*), California oatgrass (*Danthonia californica*), Mt.

Tamalpais manzanita (*Arctostaphylos montana* ssp. *montana*), leather oak (*Quercus durata*), and chamise (personal observations 2019).

This species is known from 17 USGS 7.5 minute quadrangles in Alameda, Contra Costa, Lake, Marin, Santa Clara, Santa Cruz, San Mateo, and Stanislaus counties. There are 45 CCH (2019) records from Alameda County, and 13 CCH (2019) records from Contra Costa County. Oakland star-tulip has a moderate potential to occur in the Study Area due to the presence of potentially suitable grassland habitat, presence of associated species, and proximity to numerous documented occurrences.

San Francisco popcornflower (*Plagiobothrys diffusus*), State Endangered, CRPR 1B.1. Moderate Potential. San Francisco popcorn flower is an annual forb in the borage family (Boraginaceae) that blooms from March through June. It typically occurs in coastal prarire and valley and foothill grassland at elevations ranging from 180 to 1,080 feet (CNPS 2018a). Known associated species includes California oatgrass, shooting star (*Primula clevelandii*), tufted hair grass (*Deschampsia cespitosa* ssp*. holciformis*), brown headed rush, rattlesnake grass (*Briza maxima*), sun cup (*Taraxia ovata*), amole lily (*Chlorogalum pomeridianum*), soliva (*Soliva sessilis*), coastal heron's bill (*Erodium cicutarium*), toad rush (*Juncus bufonius*), and purple needlegrass (*Stipa pulchra*) (CDFW 2019a).

This species is known from 11 USGS 7.5 minute quadrangles in Alameda, San Benito, Santa Cruz, San Francisco, and San Mateo counties. There are two CNDDB (CDFW 2019) records in the greater vicinity of the Study Area, and no CCH (2019) records for Alameda or Contra Costa counties. The nearest and most recent documented occurrence within the Study Area vicinity is from 1997 in the Oakland Hills, approximately 17 miles southwest of the Study Area (CDFW 2019). San Francisco popcornflower has a moderate potential to occur in the Study Area due to the presence of potentially suitable mesic grassland habitat, and presence of associated species.

Lobb's aquatic buttercup (*Ranunculus lobbii*). CRPR 4.2. Moderate Potential. Lobb's aquatic buttercup is annual aquatic forb in the buttercup family (Ranunculaceae) that blooms from February to May. It typically occurs in vernally wet areas within cismontane woodland, North Coast coniferous forest, valley and foothill grassland, and vernal pool habitat at elevations ranging from 45 to 1530 feet. The species typically requires standing water to a depth of several inches or more for the majority of the rainy season. This species is an obligate (OBL) wetland plant, and is commonly associated with stockponds, and drainage ditches with slow-moving or stagnant surface water. Observed associated species include manna grass (*Glyceria* spp.), spike rush (*Eleocharis macrostachya*), brown headed rush, curly dock, and Italian rye grass (personal observation 2019).

Lobb's aquatic buttercup is known from nine USGS 7.5-minute quadrangles in Alameda, Contra Costa, Marin, Mendocino, Napa, Santa Cruz, San Mateo, Solano, and Sonoma counties. Lobb's aquatic buttercup has a moderate potential to occur in the Study Area due to the presence of a man-made pond with standing water in the spring months and the presence of associated species.

Two-fork clover (*Trifolium amoenum*) Federal Endangered, CRPR 1B.1. Moderate Potential. Two-fork clover is an annual forb in the pea family (Fabaceae) that blooms from April to June. It typically occurs on open, sunny sites, in swales, on roadsides, and cliffs sometimes underlain by serpentine substrate in valley and foothill grassland and coastal bluff scrub habitat at elevations ranging from 15 to 1365 feet (CDFW 2019, CNPS 2019b). This species is a facultative wetland (FACW) plant (Lichvar 2016), and has a serpentine affinity rank of weak

indicator (1.3) (Safford et al. 2005). Observed associated species slim oat, bromes (*Bromus* spp.), fescues (*Festuca* spp.), Italian rye grass, California oat grass (*Danthonia californica*), California brome (*Bromus carinatus*), meadow barley (*Hordeum brachyantherum*), Italian thistle (*Carduus pycnocephalus*), and pale flax (*Linum bienne*) (CDFW 2019).

Two-fork clover is known from 16 USGS 7.5-minute quadrangles in Marin, Napa, Santa Clara, Solano, and Sonoma counties (CNPS 2019). There is one CNDDB (CDFW 2019) record in the greater vicinity of the Study Area, one CCH (2019) record from Alameda County, and no CCH records from Contra Costa County. Two-fork clover has a moderate potential to occur in the Study Area due the presence of potentially suitable grassland, and some associated species.

4.3.2 Special-Status Wildlife

Based upon a review of the resources and databases listed in Section 3.2.1, it was determined that 61 special-status wildlife species have been documented in the vicinity of the Study Area. Appendix C summarizes the potential for each of these species to occur in the Study Area. Special-status wildlife species that have been documented in CNDDB within a 5-mile radius of the Study Area are depicted in Figure 4. Of the 61 special-status wildlife species documented in the Study Area vicinity, 60 are unlikely or have no potential to occur within the Study Area due to one or more of the following reasons:

- The urbanized, and developed nature of the Study Area vicinity limits its capacity to provide habitat, and presents significant barriers to species mobility;
- Aquatic habitats (e.g., rivers/streams, ponds, vernal pools, estuarine waters) necessary to support the special-status wildlife species are not present in the Study Area;
- Biological communities (e.g., tidal or freshwater marsh, chaparral, oak woodland) that provide nesting and/or foraging resources necessary to support special-status wildlife species are not present or within the immediate vicinity of the Study Area;
- There are no suitable trees, cliffs, vacant buildings or other structures within the Study Area that could provide suitable bat roosting opportunities;
- Forage or prey species are absent or inadequate to support special status species;
- Host plants for special status species are absent from the Study Area;
- Structures or vegetative substrates (e.g., emergent wetland/marsh vegetation, tree cavities/snags) necessary to provide nesting or cover habitat to support special-status wildlife species are not present or within the immediate vicinity of the Study Area;
- The Study Area is outside (e.g. north of, west of) many of the special-status wildlife species ranges (including nesting/breeding range, for birds).

The following special-status species (white-tailed kite) has a moderate potential to occur in the Study Area. In addition, non-status bird species with baseline legal protections have potential to nest within the Study Area.

White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. Moderate Potential. The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates. White-tailed kite has been documented nesting and foraging in the vicinity of

the Study Area (CDFW 2019, eBird 2019). The Study Area is within and adjacent to a managed golf course and facilities, which may reduce the potential prey base for white-tailed kite. However, the Study Area contains suitable nesting trees and there are undeveloped lots adjacent to the Study Area which may provide foraging opportunities. Thus, white-tailed kite has a moderate potential to occur.

Nesting birds (non-status). High Potential. The Study Area contains grass, shrubs, bare ground and trees that may be used as nesting habitat by bird species with legal baseline protections. These laws/codes apply to a wide variety of native birds, including species that are non-migratory and/or commonly found in Contra Costa County.

Species Documented in the Vicinity of the Study Area but Unlikely to Occur

Monarch butterfly (*Danaus plexippus*). CDFW Special Status Invertebrate. This large, showy butterfly is found throughout the United States, southern Canada, and Central America. It also occurs in parts of South America and other continents. In North America, this species spends spring and summer months breeding and foraging across much of its range. The monarch butterfly generally uses milkweed (*Asclepias spp*.) for both breeding and nectaring, although nectar may also be obtained from a variety of additional plant species. From August to October, monarchs will migrate thousands of miles to winter roost sites located along the California coast and central Mexico. At roost sites, monarchs will congregate in thousands or millions on a tree or group of trees (Opler et al. 2011). Western monarchs prefer overwintering habitat comprised of a relatively dense grove of trees with some understory, located near water and nectar sources and protected from the wind by topographic landforms or trees (Sakai and Calvert 1991). Winter roost sites are often on south, southwest, or west facing slopes which may provide more favorable temperature regimes and wind protection (Leong et al. 2004). Monarch butterflies typically arrive in mid-October to overwintering sites along the California coast and remain until late February or March (Jepsen et al. 2015).

The Study Area was initially assessed by WRA as having potential to support monarch roosting due to the presence of a eucalyptus grove and the proximity to a documented roosting location in Point Pinole Regional Shoreline (CDFW 2019). However, after additional site assessments (March 2019, July 2019), the Study Area was determined to be unlikely to support monarch roosting. The canopy of the eucalyptus grove in the Study Area is open and wind-exposed, reducing suitability for monarch roosting. The stand has been managed and as a result includes little to no understory. The eucalyptus stand is at approximately 90 feet of elevation, with no protection to the west from winds off of San Pablo Bay. No monarch individuals or indications of communal winter roosts were observed during the site assessments.

4.3.3 Critical Habitat

No critical habitat is designated within the Study Area.

5.0 POTENTIAL IMPACTS, AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

5.1 Project Description

The Richmond Country Club Residential Development Project (“Project”) would develop up to 102 residential units (a site density of 3.94 dwelling units/acre), on an approximately 24.82-acre portion (i.e. Project Area, Project footprint) of the Richmond Country Club property, at 1 Markovich Lane, Richmond, Contra Costa County, California (Assessor’s Parcel No. 405-050-006-07 [portion], and 405-050-019-0 [portion]) (Figure 6). The Project Area currently consists of a portion

of the existing golf course, an existing worker housing structure, a windrow of blue gum trees, and vacant land consisting of debris stockpiling areas, native and non-native grasslands, and potentially jurisdictional wetlands and non-wetland waters features.

The Project would extend the existing Markovich Lane through the center of the Project Area culminating in a cul-de-sac at the northern border of the Project Area. An additional 20-foot wide, all-weather Emergency Vehicle Access (EVA) road would be built along the western border of the Project Area with access from Giant Road in the southwest corner of the Project Area. The Project Area is currently zoned as Parks and Recreation (PR) as shown according to the City of Richmond General Plan (cite); the Project would require a general plan amendment, with a proposed zoning change to Planned Area (PA), with a proposed single-family residential land use.

The development of the Project Area would also include stormwater management infrastructure including a bio-retention basin, and stormwater retention basin in the southwest corner of the site. The Project will remove a large grove of mature to over-mature non-native blue gum trees, and will plant several hundred native and non-native ornamental trees and shrubs such as coast live oak (*Quercus agrifolia*), valley oak (*Q. lobata*), cork oak (*Q. suber*), blue blossoms (*Ceanothus* spp.), and sages (*Salvia* spp.).

Potential impacts to sensitive biological communities and special-status species within the Project Area were evaluated based on the Preliminary Application Conceptual Grading, Drainage, and Uitility Plan (CBG 2019).

5.2 Significance Threshold Criteria

Pursuant to Appendix G, Section IV of the State CEQA Guidelines, a project would have a significant impact on biological resources if it would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS;

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

This report utilizes these thresholds in the analysis of impacts and determination of the significance of those impacts. The assessment of impacts under CEQA is based on the changes caused by the Project relative to the existing conditions in the Project Area. The existing conditions in the Project Area are described above, based on surveys conducted in 2019. In applying CEQA Appendix G, the terms "substantial" and "substantially" are used as the basis for significance determinations in many of the thresholds, but are not defined qualitatively or quantitatively in CEQA or in technical literature. In some cases, such as direct impacts to special-status species listed under the CESA or ESA, the determination of a substantial impact may be relatively straightforward. In other cases, the determination is less clear, and requires application of best professional judgment based on knowledge of site conditions as well as the ecology and physiology of biological resources present in a given area. Determinations of whether or not Project activities will result in a substantial adverse effect to biological resources are discussed in the following sections for sensitive biological communities, special-status plant species, and special-status wildlife species.

5.3 Potentially Significant Impacts

Sensitive Biological Communities

Impact BIO-1: Impacts to Potential Wetlands and Waters of the U.S.

The Project Area contains approximately 0.24 acre of potentially jurisdictional wetlands, and non-wetland waters features. Development of the approximately 24.82-acre Project Area will permanently convert the majority of these features into developed areas. Project Activities will result in direct impacts to approximately 0.20 acre of seasonal wetland, 0.03 acre of ephemeral drainage, and 0.01 acre of pond through conversion of these features into developed areas consisting single-family residences, and associated infrastructure and landscaping. All of these aquatic features are likely within the jurisdiction of the Corps under Section 404 of the CWA and the RWQCB under Section 401 of the CWA and the Porter-Cologne Act. In addition, the ephemeral drainages, pond, and two seasonal wetlands which are contiguous with the ephemeral drainage in the center of the Project Area are likely considered jurisdictional by CDFW under Sections 1600-161 of the CFGC. Necessary permit approvals may include a Section 404 Permit from the Corps, a Section 401 Water Quality Certification from the RWQCB, and a Section 1602 Lake and Streambed Alteration Agreement. The Applicant will obtain all required resource agency permit approvals prior to beginning work within potentially jurisdictional waters and wetlands, and will comply with any specific conditions of those approvals.

The following mitigation measure (MM BIO-1) is recommended to compensate for direct impacts to jurisdictional wetlands and waters features. The implementation of MM BIO-1 would reduce the Project's direct impact to biological communities within the Project Area to less than significant.

Impact BIO-2: Impacts to Potential Riparian Vegetation

The Project Area contains approximately 0.02-acre of potentially jurisdictional upland riparian vegetation (i.e. arroyo willow thicket) associated with a man-made pond in the western portion of the Project Area. The small, discrete patch of arroyo willow is composed of a monotypic stand of young, shrub-form arroyo willow, which appears to have become established between 2005 and 2009 (Google Earth 2019). The arroyo willow thicket is located on a slightly convex slope above an artificial man-made pond, and as such it provides only marginal habitat. However, as it is associated with the pond, the area mapped as arroyo willow thicket may be considered riparian

vegetation subject to CDFW jurisdiction under Sections 1600-1616 of the CFGC. Project Activities will result in direct impacts to approximately the 0.02 acre of arroyo willow thicket through conversion of these features into developed areas consisting single-family residences, and associated infrastructure and landscaping. As described above, the Applicant will obtain all required resource agency permit approvals prior to beginning work within potentially jurisdictional riparian habitat, and will comply with any specific conditions of those approvals. However, due to the small area of impact to naturalized arroyo willow shrubs associated with an artificial, man-made pond, impacts to this community do not constitute a substantial adverse effect, and impacts should be considered less than significant.

Impact BIO-3: Impacts to Native Grasslands

The Project would result in the conversion/development of 0.37 acres of native grassland habitat including creeping ryegrass grassland, and purple needlegrass grasslands. Purple needlegrass, and creeping wildrye grasslands are both native, perennial bunchgrass species. Native purple needlegrass grassland and creeping ryegrass grassdland receive similar consideration under CEQA because they are considered a sensitive plant communities by the CDFW. However, purple needlegrass and creeping ryegrass grassland are relatively common in the Project vicinity with an estimated several dozen acres occurring at Point Pinole Regional Park less than a mile northwest of the Project Area, and likely many more un-mapped acres in parks and open space areas within a 5-mile radius of the Project Area (e.g. Wildcat Canyon and Sobrante Regional Parks). In the greater east bay region, at least 250 acres of native bunchgrass grassland have been mapped at three regional park sites (Fairmont Ridge, Knowland Park, and Skyline Serpentine Prairie). The occurrences in nearby parks and open spaces are also generally of much higher quality than the habitat found in the Project Area, which is relatively fragmented and generally co-dominated by non-native annual grasses and forbs, with few native forbs. As such, impacts to native grasslands associated with the Project should be less than significant.

<u>Special-Status Plant Species</u>

Impact BIO-4: Potential to impact Special-Status Plant Species

Of the 95 special-status plant species known from the vicinity of the Project Area, nine species, have a moderate potential to occur due to the presence of potentially suitable grassland and seasonal wetland habitats, presence of associated species, and proximity to documented occurrences. Two protocol-level rare plant survey were conducted in the Project Area on January 10, and July 18, 2019. The surveys were conducted during a period sufficient to identify four of the nine species with potential to occur in the Study Area including big-scale balsamroot, johnny-nip, Diablo helianthella, and Santa Cruz. No special-status species were observed, and the aforementioned species are considered absent.

However, the January and July site visits were conducted outside of the documented bloom period sufficient to identify the remaining spring-blooming species with potential to occur, including: (1) bent-flowered fiddleneck, (2) Oakland star-tulip, (3) San Francisco popcornflower, (4) Lobb's aquatic buttercup, and (5) two-fork clover.

Project planning and entitlement processing can proceed without lead agency involvement at this time based on the information provided in this report. If mitigation measures are determined to be needed to protect special-status plant species if any are found, they shall be incorporated as a condition of approval in an appropriate document (e.g., CEQA document or city development permit). A mitigation measure (MM BIO-2) for impacts to spring-blooming rare plant species is

discussed below in Section 5.4. With implementation of MM BIO-2 this impact would be less than significant.

Special-Status Wildlife Species

Impact BIO-5: Impacts to Special-status and Non-status Nesting Birds

The Project has the potential to impact special-status (white-tailed kite) and non-status native nesting birds which are protected by the MTBA and CFGC. Potential impacts to these species and their habitats could occur during the removal of vegetation, grading, or ground-disturbing activities. These activities could result in the direct removal or destruction of the active nests of protected bird species. These activities may also create audible, vibratory and/or visual disturbances which cause birds to abandon active nests. Activities that result in the direct removal of active nests or disturbance to breeding birds sufficient to result in the abandonment of active nests would be potentially significant under CEQA. A potential mitigation measure (MM BIO-3) for impacts to nesting birds is discussed below in Section 5.4. With implementation of MM BIO-3 this impact would be less than significant.

5.4 Mitigation Measures

Sensitive Biological Communities

MM BIO-1: Compensatory Mitigation for Impacts to Wetlands and Waters of the U.S.

Prior to obtaining the first site grading or building permit for development activities involving ground disturbance, the project applicant shall acquire the appropriate applicable permit(s) (e.g. Section 404, Section 401, Porter-Cologne) from the respective regulating agency(s) (i.e. USACE and/or RWQCB). Required mitigation may include a mitigation and monitoring plan to ensure environmental impacts are mitigated and the sensitive habitats are replaced in-kind after the project is complete.

Wetland mitigation requirements will be determined by the regulatory agencies during the permitting process. Required mitigation ratios can be met by creating wetlands on-site or off-site or purchasing wetland credits from a wetland mitigation bank. A wetland mitigation plan shall be prepared that will establish suitable compensatory mitigation based on the concept of no net loss of wetland habitat values or acreages, to the satisfaction of the regulatory agencies. Specifically, a wetland mitigation plan shall be developed and implemented that includes creation, restoration, and/or enhancement of off-site wetlands, or purchase of mitigation credits from an approved mitigation bank or mitigation turnkey prior to project ground disturbance. Mitigation areas shall be established in perpetuity through dedication of a conservation easement (or similar mechanism) to an approved environmental organization and payment of an endowment for the long-term management of the site. The mitigation plan shall be subject to the approval of the applicable regulatory agency (Corps and/or RWQCB). With implementation of MM BIO-1, this impact would be less than significant.

Special-Status Plant Species

MM BIO-2: Pre-construction survey for Special-Status Plant Species

Prior to vegetation removal and/or ground disturbance within the Project Area, a spring pre-construction protocol-level rare plant survey shall be conducted by a qualified biologist in all

suitable habitats (i.e. seasonal wetland, pond, non-native grassland, purple needlegrass grassland, and creeping ryegrass grassland). Surveys shall be conducted during the appropriate time of year (April) to accurately identify bent-flowered fiddleneck, Oakland star-tulip, San Francisco popcornflower, Lobb's aquatic buttercup, and two-fork clover. If special-status plant surveys result in negative findings, no impacts would occur, and no mitigation would be required. However, if special-status plants are identified in the impact area, mitigation may be required. Mitigation may include avoidance, or if avoidance is not feasible, seeds collection and re-establishment at a minimum 1:1 ratio (number of plant established: number of plants impacted) in preserved, suitable habitat. Re-established populations shall be monitored annually in accordance with an approved HMMP for a minimum of five years. If re-established populations fail to meet the minimum success criteria established by the HMMP after five years, the Project shall pay an in-lieu fee of $5,000 to the East Bay Regional Park District to enhance and expand existing rare plant populations in the region. With implementation of MM BIO-2, this impact would be less than significant.

Special-Status Wildlife Species

MM BIO-3: Pre-construction surveys for nesting birds and nest avoidance

If Project Activities occur during the nesting season, which generally extends from February 1 through August 31, nests of both special-status and non-status native birds could be impacted by construction and other ground disturbing activities. Impacts to nesting birds would be considered significant under CEQA.

Project activities such as vegetation removal, grading, or initial ground-disturbing activities will be conducted between August 16 and January 31 (outside of the February 1 to August 15 nesting season) to the extent feasible. If such activities must be conducted during the nesting season, a pre-disturbance nesting-bird survey will be conducted by a qualified biologist no more than 14 days prior to vegetation removal or initial ground disturbance. The survey will include the disturbance area and surrounding 250 feet to identify the location and status of any nests that could potentially be affected either directly or indirectly by Project activities.

If active nests of protected species are found within the survey area, a work exclusion zone will be established around each nest by the qualified biologist. Established exclusion zones will remain in place until all young in the nest have fledged or the nest otherwise becomes inactive (e.g., due to predation). Appropriate exclusion zone sizes will be determined by a qualified biologist and vary dependent upon the species, nest location, existing visual buffers, noise levels, and other factors. An exclusion zone radius may be as small as 50 feet for common, disturbance-adapted species or as large as 250 feet or more for raptors. Exclusion zone size may be reduced from established levels if supported with nest monitoring findings by a qualified biologist indicating that work activities outside the reduced radius are not adversely impacting the nest and that a reduced exclusion zone would not adversely affect the subject nest. With implementation of MM BIO-3, impacts to nesting birds are anticipated to be less than significant.

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APPENDIX A –

PROJECT FIGURES

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Sources: National Geographic, WRA | Prepared By: njander, 8/20/2019

Figure 1. Study Area Regional Location Map

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

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N

wra
ENVIRONMENTAL CONSULTANTS



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Sources: Esri Streaming - NAIP 2016, WRA | Prepared By: njander, 9/19/2019

Figure 2. Soils

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

0 200 400 Feet

N

wra
ENVIRONMENTAL CONSULTANTS



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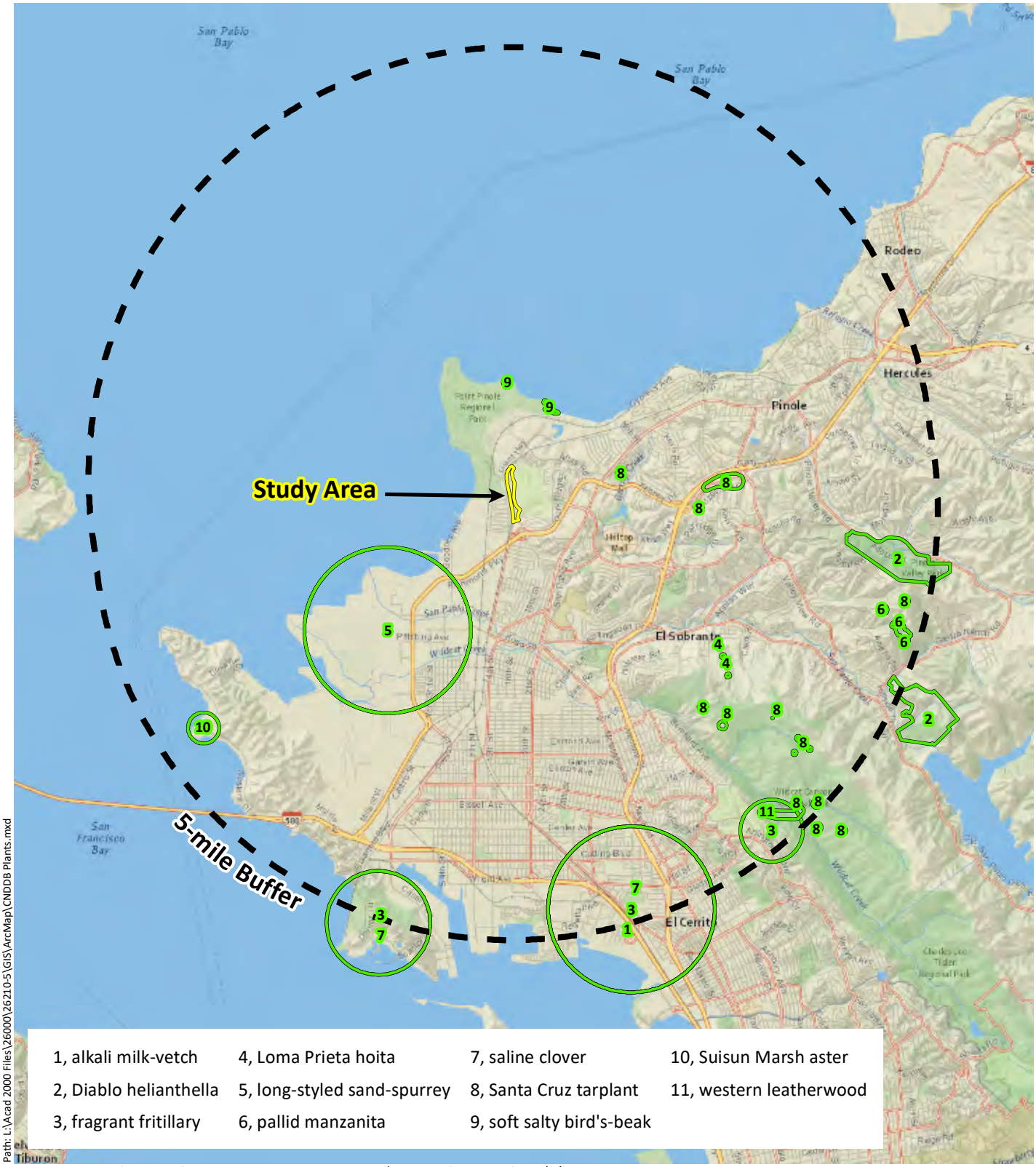
Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: njander, 9/19/2019

Figure 3. Biological Constraints

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

0 200 400 Feet N

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Sources: National Geographic, CNDDB January 2019, WRA | Prepared By: njander, 9/4/2019

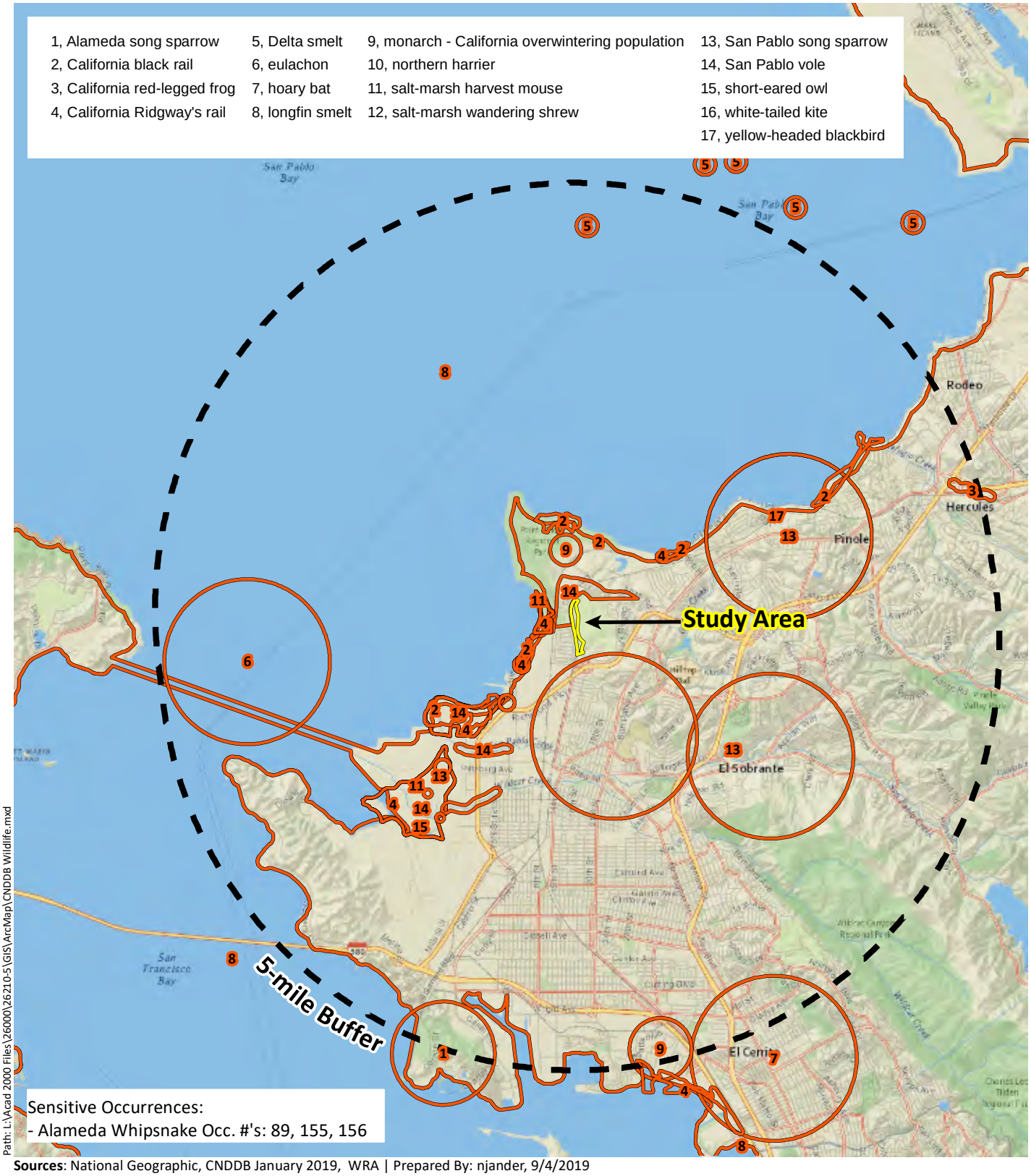
Figure 4. Special-Status Plant Species Documented within 5-miles of the Study Area

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

0 1 2 Miles

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ENVIRONMENTAL CONSULTANTS



Sources: National Geographic, CNDDB January 2019, WRA | Prepared By: njander, 9/4/2019

Figure 5. Special-Status Wildlife Species Documented within 5-miles of the Study Area

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

0 1 2 Miles

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ENVIRONMENTAL CONSULTANTS



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Sources: 2016 DigitalGlobe Aerial, WRA | Prepared By: njander, 9/19/2019

Figure 6. Impacts

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

0 200 400 Feet

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ENVIRONMENTAL CONSULTANTS

APPENDIX B -

LIST OF OBSERVED PLANT AND WILDLIFE SPECIES

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Table B-1. Plant species observed in the Study Area, January 10, and July 18, 2019

Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Acacia longifolia	Golden wattle	non-native	tree	-	-	-
Acacia melanoxylon	Blackwood acacia	non-native (invasive)	tree	-	Limited	-
Agrostis capillaris	Colonial bentgrass	non-native	perennial grass	-	-	FAC
Amaryllis belladonna	Naked lady	non-native	perennial herb	-	-	-
Avena barbata	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
Baccharis pilularis	Coyote brush	native	shrub	-	-	-
Brachypodium distachyon	Purple false brome	non-native (invasive)	annual, perennial grass	-	Moderate	-
Briza maxima	Rattlesnake grass	non-native (invasive)	annual grass	-	Limited	-
Bromus catharticus	Rescue grass	non-native	annual, perennial grass	-	-	-
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Bromus hordeaceus	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
Carduus pycnocephalus ssp. *pycnocephalus*	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
Carpobrotus edulis	Iceplant	non-native (invasive)	perennial herb	-	High	-
Centromadia pungens	Common tarweed	native	annual herb	-	-	FAC
Cirsium vulgare	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
Claytonia perfoliata	Miner's lettuce	native	annual herb	-	-	FAC
Convolvulus arvensis	Field bindweed	non-native	perennial herb, vine	-	-	-
Cordyline australis	Cabbage tree	non-native (invasive)	tree	-	Limited	-
Cortaderia jubata	Andean pampas grass	non-native (invasive)	perennial grass	-	High	FACU
Cotoneaster pannosus	Woolly cotoneaster	non-native (invasive)	shrub	-	Moderate	-

Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Crypsis schoenoides	Swamp grass	non-native	annual grass	-	-	FACW
Cynosurus echinatus	Dogtail grass	non-native (invasive)	annual grass	-	Moderate	-
Cyperus eragrostis	Tall cyperus	native	perennial grasslike herb	-	-	FACW
Cytisus scoparius	Scotch broom	non-native (invasive)	shrub	-	High	-
Digitaria sanguinalis	Crabgrass	non-native	annual grass	-	-	FACU
Dipsacus sativus	Indian teasel	non-native (invasive)	biennial herb	-	Moderate	-
Ehrharta erecta	Upright veldt grass	non-native (invasive)	perennial grass	-	Moderate	-
Elymus triticoides	Beardless wild rye	native	perennial grass	-	-	FAC
Epilobium brachycarpum	Willow herb	native	annual herb	-	-	-
Erigeron canadensis	Canada horseweed	native	annual herb	-	-	FACU
Erodium botrys	Big heron bill	non-native	annual herb	-	-	FACU
Eschscholzia californica	California poppy	native	annual, perennial herb	-	-	-
Eucalyptus globulus	Blue gum	non-native (invasive)	tree	-	Limited	-
Euphorbia peplus	Petty spurge	non-native	annual herb	-	-	-
Festuca perennis	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
Foeniculum vulgare	Fennel	non-native (invasive)	perennial herb	-	High	-
Fumaria sp.	-	-	-	-	-	-
Galium aparine	Cleavers	native	annual herb	-	-	FACU
Gastridium phleoides	Nit grass	non-native	annual grass	-	-	FACU
Genista monspessulana	French broom	non-native (invasive)	shrub	-	High	-
Geranium molle	Crane's bill geranium	non-native	annual, perennial herb	-	-	-
Grindelia camporum	Gumweed	native	perennial herb	-	-	FACW

Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Helminthotheca echioides	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC
Hemizonia congesta ssp. *lutescens*	Hayfield tarweed	native	annual herb	-	-	-
Hesperocyparis macrocarpa	Monterey cypress	native	tree	Rank 1B.2*	-	-
Heteromeles arbutifolia	Toyon	native	shrub	-	-	-
Holcus lanatus	Common velvetgrass	non-native (invasive)	perennial grass	-	Moderate	FAC
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	non-native (invasive)	annual grass	-	Moderate	FAC
Hordeum murinum	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
Hypochaeris radicata	Hairy cats ear	non-native (invasive)	perennial herb	-	Moderate	FACU
Juncus bufonius	Common toad rush	native	annual grasslike herb	-	-	FACW
Juncus patens	Common rush	native	perennial grasslike herb	-	-	FACW
Juncus phaeocephalus	Brown headed rush	native	perennial grasslike herb	-	-	FACW
Juniperus sp.	-	-	-	-	-	-
Lactuca saligna	Willow lettuce	non-native	annual herb	-	-	UPL
Lactuca serriola	Prickly lettuce	non-native	annual herb	-	-	FACU
Lepidium didymum	Lesser swine cress	non-native	annual herb	-	-	-
Ligustrum lucidum	Glossy privet	non-native (invasive)	tree, shrub	-	Limited	-
Lotus corniculatus	Bird's foot trefoil	non-native	perennial herb	-	-	FAC
Lupinus formosus	Western lupine	native	perennial herb	-	-	-
Lupinus nanus	Valley sky lupine	native	annual herb	-	-	-
Lysimachia arvensis	Scarlet pimpernel	non-native	annual herb	-	-	FAC
Lythrum hyssopifolia	Hyssop loosestrife	non-native (invasive)	annual, perennial herb	-	Limited	OBL
Madia gracilis	Gumweed	native	annual herb	-	-	-

Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Nerium oleander	Oleander	non-native	tree	-	-	-
Oxalis pes-caprae	Bermuda buttercup	non-native (invasive)	perennial herb	-	Moderate	-
Pennisetum clandestinum	Kikuyu grass	non-native (invasive)	perennial grass	-	Limited	FACU
Persicaria sp.	-	-	-	-	-	-
Pinus radiata	Monterey pine	native	tree	Rank 1B.1*	-	-
Plantago lanceolata	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
Polygonum aviculare	Prostrate knotweed	non-native	annual, perennial herb	-	-	FAC
Polypogon monspeliensis	Annual beard grass	non-native (invasive)	annual grass	-	Limited	FACW
Pseudognaphalium luteoalbum	Jersey cudweed	non-native	annual herb	-	-	FAC
Pyracantha angustifolia	Firethorn	non-native (invasive)	shrub	-	Limited	-
Quercus agrifolia	Coast live oak	native	tree	-	-	-
Raphanus sativus	Wild radish	non-native (invasive)	annual, biennial herb	-	Limited	-
Rubus armeniacus	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
Rumex acetosella	Sheep sorrel	non-native (invasive)	perennial herb	-	Moderate	FACU
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Salix lasiolepis	Arroyo willow	native	tree, shrub	-	-	FACW
Sequoia sempervirens	Coast redwood	native	tree	-	-	-
Silybum marianum	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
Sisyrinchium bellum	Blue eyed grass	native	perennial herb	-	-	FACW
Solanum americanum	White nightshade	native	annual, perennial herb	-	-	FACU
Sonchus oleraceus	Common sow thistle	non-native	annual herb	-	-	UPL
Stipa pulchra	Purple needle grass	native	perennial grass	-	-	-

Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Symphyotrichum chilense	Pacific aster	native	perennial herb	-	-	FAC
Torilis arvensis	Field hedge parsley	non-native (invasive)	annual herb	-	Moderate	-
Toxicodendron diversilobum	Poison oak	native	vine, shrub	-	-	FACU
Tropaeolum majus	Garden nasturtium	non-native	annual herb, vine	-	-	UPL
Vicia sativa	Spring vetch	non-native	annual herb, vine	-	-	FACU
Vinca major	Vinca	non-native (invasive)	perennial herb	-	Moderate	-
Washingtonia robusta	Washington fan palm	non-native (invasive)	tree	-	Moderate	FACW
Zeltnera muehlenbergii	Muehlenberg's centaury	native	annual herb	-	-	FAC

All species identified using the *Jepson Manual, 2nd Edition* (Baldwin et al. 2012) and Jepson eFlora (2019); nomenclature follows Jepson eFlora. Sp.: "species", intended to indicate that the observer was confident in the identity of the genus but uncertain which species. Cf: intended to indicate a species appeared to the observer to resemble a certain species, but was not confirmed.

[1]Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2019)
- FE: Federal Endangered
- FT: Federal Threatened
- SE: State Endangered
- ST: State Threatened
- SR: State Rare
- Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
- Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
  (*Rank 1B: Rare in native stands only; native stands do not occur in the Study Area)
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere
- Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
- Rank 3: Plants about which we need more information – a review list
- Rank 4: Plants of limited distribution – a watch list

[2]Invasive Status: California Invasive Plant Inventory (Cal-IPC 2019)
- High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
- Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically
- Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
- Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

[3]Wetland Status: National List of Plant Species that Occur in Wetlands, Arid West Region (Lichvar et al. 2016)
- OBL: Almost always a hydrophyte, rarely in uplands
- FACW: Usually a hydrophyte, but occasionally found in uplands

FAC: Commonly either a hydrophyte or non-hydrophyte
FACU: Occasionally a hydrophyte, but usually found in uplands
UPL: Rarely a hydrophyte, almost always in uplands
NL: Rarely a hydrophyte, almost always in uplands
NI: No information; not factored during wetland delineation

Table B-2. Wildlife Species Observed in the Study Area on January 10, March 4, and July 18, 2019

Common Name (status if applicable)	Species
AMPHIBIANS	
Pacific chorus frog	*Pseudacris regilla*
BIRDS	
Allen's hummingbird	*Selasphorus sasin*
Anna's hummingbird	*Calypte anna*
American bushtit	*Psaltriparus minimus*
American crow	*Corvus brachyrhynchos*
American goldfinch	*Spinus tristis*
American robin	*Turdus migratorius*
black phoebe	*Sayornis nigricans*
brown creeper	*Certhia americana*
bushtit	*Psaltriparus minimus*
Canada goose	*Branta canadensis*
California gull	*Larus californicus*
California towhee	*Melozone crissalis*
chestnut-backed chickadee	*Poecile rufescens*
dark-eyed junco	*Junco hyemalis*
European starling	*Sturnus vulgaris*
golden-crowned sparrow	*Zonotrichia atricapilla*
house finch	*Haemorhous mexicanus*
house wren	*Troglodytes aedon*
northern flicker	*Colaptes auratus*
northern mockingbird	*Mimus polyglottos*
mourning dove	*Zenaida macroura*
oak titmouse	*Baeolophus inornatus*
red-breasted sapsucker	*Sphyrapicus ruber*
red-tailed hawk	*Buteo jamaicensis*
rock dove	*Columba livia*
ruby crowned kinglet	*Regulus calendula*
turkey vulture	*Cathartes aura*
western scrub jay	*Aphelocoma californica*
white-crowned sparrow	*Zonotrichia leucophrys*
yellow rumped warbler	*Setophaga coronata*
MAMMALS	
raccoon	*Procyon lotor*
mule deer	*Odocoileus hemionus*

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APPENDIX C -

POTENTIAL FOR SPECIAL-STATUS PLANT AND WILDLIFE SPECIES TO OCCUR IN THE STUDY AREA

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Table C-1. Potential for Special-status Plant and Wildlife Species to Occur in the Study Area. List compiled from the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (July 2019), U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) Species Lists (July 2019), and California Native Plant Society (CNPS) Electronic Inventory (July 2019) searches of the Benicia, Briones Valley, Mare Island, Oakland East, Oakland West, Petaluma Point, Richmond, San Francisco North, and San Quentin USGS 7.5' quadrangles and a review of other CDFW lists and publications (Jennings and Hayes 1994, Zeiner et al. 1990).

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
PLANTS				
Napa false indigo *Amorpha californica* var. *napensis*	Rank 1B.2	Broadleafed upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 390 to 6560 feet. Blooms Apr-Jul.	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	**Not Present.** No further recommendations for this species.
bent-flowered fiddleneck *Amsinckia lunaris*	Rank 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 5 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	**Moderate Potential.** The Study Area contains potentially suitable grassland habitat and associated species. The nearest documented occurrence is along Sobrante Ridge, approximately 6.25 miles east-southest (ESE) from the Study Area (CDFW 2019).	**Presence Unknown.** The site visits were conducted outside of the documented bloom period sufficient to identify this species. Conduct a botanical survey in spring to determine absence/presence of this species.
California Androsace *Androsace elongata* ssp. *acuta*	Rank 4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland. Elevation ranges from 490 to 4280 feet (150 to 1305 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area lacks many of the biological communities associated with this species and is well below the documented elevation range of the species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
coast rockcress *Arabis blepharophylla*	Rank 4.3	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 5 to 3610 feet (3 to 1100 meters). Blooms Feb-May.	**No Potential.** The Study Area lacks rocky outcrops within coastal scrub and coastal prairie known to support this species.	**Not Present.** No further recommendations for this species.
Franciscan manzanita *Arctostaphylos franciscana*	FE, Rank 1B.1	Coastal scrub (serpentine). Elevation ranges from 195 to 985 feet (60 to 300 meters). Blooms Feb-Apr.	**No Potential.** The Study Area lacks serpentine substrate within coastal scrub habitat. This species, once though extinct, and rediscovered in 2009 is only known from one occurrence in the Presidio of San Francisco (CDFW 2019).	**Not Present.** No further recommendations for this species.
Presidio manzanita *Arctostaphylos montana* ssp*. ravenii*	FE, SE, Rank 1B.1	Chaparral, coastal prairie, coastal scrub. Elevation ranges from 145 to 705 feet (45 to 215 meters). Blooms Feb-Mar.	**No Potential.** The Study Area lacks serpentine substrate within coastal scrub habitat. This species is only known from one occurrence in the Presidio of San Francisco (CDFW 2019).	**Not Present.** No further recommendations for this species.
pallid manzanita *Arctostaphylos pallida*	FT, SE, Rank 1B.1	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Elevation ranges from 605 to 1525 feet (185 to 465 meters). Blooms Dec-Mar.	**No Potential.** The Study Area lacks the biological communities associated with this species. No manzanita (*Arctostaphylos* spp.) shrubs were observed in the Study Area.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
marsh sandwort *Arenaria paludicola*	FE, SE, Rank 1B.1	Marshes and swamps (freshwater or brackish). Elevation ranges from 5 to 560 feet (3 to 170 meters). Blooms May-Aug.	**No Potential.** The Study Area lacks marshes and swamps known to support this species.	**Not Present.** No further recommendations for this species.
Carlotta Hall's lace fern *Aspidotis carlotta-halliae*	Rank 4.2	Chaparral, cismontane woodland; serpentine. Elevation ranges from 325 to 4595 feet (100 to 1400 meters). Blooms Jan-Dec.	**No Potential.** The Study Area lacks chaparral, and cismontane woodland underlain by serpentine substrate necessary to support this species.	**Not Present.** No further recommendations for this species.
ocean bluff milk-vetch *Astragalus nuttallii* var. *nuttallii*	Rank 4.2	Coastal bluff scrub, coastal dunes. Elevation ranges from 5 to 395 feet (3 to 120 meters). Blooms Jan-Nov.	**No Potential.** The Study lacks coastal bluff scrub and dunes known to support this species.	**Not Present.** No further recommendations for this species.
alkali milk-vetch *Astragalus tener* var. *tener*	Rank 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools. Elevation ranges from 0 to 195 feet (1 to 60 meters). Blooms Mar-Jun.	**No Potential.** The Study lacks coastal bluff scrub and dunes known to support this species.	**Not Present.** No further recommendations for this species.
big-scale balsamroot *Balsamorhiza macrolepis*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland; often on serpentine or volcanics. Elevation ranges from 145 to 5100 feet (45 to 1555 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area contains potentially suitable grassland habitat which could support this species, although the Study Area lacks serpentine and volcanic substrates most often associated with this species.	**Not Present.** This species was not observed during a site-wide survey in July, a period sufficient to identify this species vegetatively. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
big tarplant *Blepharizonia plumosa*	Rank 1B.1	Valley and foothill grassland; often alkaline. Elevation ranges from 95 to 1655 feet (30 to 505 meters). Blooms Jul-Oct.	**Unlikely.** Although the Study Are contains potentially suitable grassland habitat which could support this species. This species is often associated with alkaline soils and is typically known from more interior, drier, and hotter climates typical of more eastern Contra Costa County (e.g. Antioch area).	**Not Present.** No further recommendations for this species.
serpentine reed grass *Calamagrostis ophitidis*	Rank 4.3	Chaparral (open, often north-facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grassland; serpentine. Elevation ranges from 295 to 3495 feet (90 to 1065 meters). Blooms Apr-Jul.	**No Potential.** The Study lacks serpentine substrates necessary to support this species.	**Not Present.** No further recommendations for this species.
Mt. Diablo fairy-lantern *Calochortus pulchellus*	Rank 1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevation ranges from 95 to 2755 feet (30 to 840 meters). Blooms Apr-Jun.	**No Potential.** The Study Area lacks chaparral, cismontane woodland, and riparian woodland most often associated with this species. This species is typically known from more interior, drier and hotter climates typical of more eastern Contra Costa County. This species is not known to occur west of the Port Costa/Martinez area.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
Tiburon mariposa lily *Calochortus tiburonensis*	FT, ST, Rank 1B.1	Valley and foothill grassland (serpentine). Elevation ranges from 160 to 490 feet (50 to 150 meters). Blooms Mar-Jun.	**No Potential.** The Study Area lacks serpentine substrate necessary to support this species. This species is only known from one extant occurrence on the Tiburon peninsula, Marin County (CDFW 2019).	**Not Present.** No further recommendations for this species..
Oakland star-tulip *Calochortus umbellatus*	Rank 4.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 325 to 2295 feet (100 to 700 meters). Blooms Mar-May.	**Moderate Potential.** The Study Area contains potentially suitable grassland habitat which could support this species.	**Presence Unknown.** The site visits were conducted outside of the documented bloom period sufficient to identify this species. Conduct a botanical survey in spring to determine absence/presence of this species.
coastal bluff morning-glory *Calystegia purpurata* ssp. *saxicola*	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, north coast coniferous forest. Elevation ranges from 0 to 345 feet (0 to 105 meters). Blooms (Mar)Apr-Sep.	**No Potential.** The Study Area lacks coastal bluff scrub, coastal scrub, coastal dunes, and north coast coniferous forest associated with this species.	**Not Present.** No further recommendations for this species.
bristly sedge *Carex comosa*	Rank 2B.1	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland. Elevation ranges from 0 to 2050 feet (0 to 625 meters). Blooms May-Sep.	**No Potential.** The Study Area lacks marshes, swamps, and lake margins associated with this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
northern meadow sedge *Carex praticola*	Rank 2B.2	Meadows and seeps (mesic). Elevation ranges from 0 to 10500 feet (0 to 3200 meters). Blooms May-Jul.	**Unlikely.** Although the Study Area contains potentially suitable seasonal wetlands within grassland, this species is not known from Contra Costa County, and is more often associated with montane environments.	**Not Present.** No further recommendations for this species.
Tiburon paintbrush *Castilleja affinis* var. *neglecta*	FE, ST, Rank 1B.2	Valley and foothill grassland (serpentine). Elevation ranges from 195 to 1310 feet (60 to 400 meters). Blooms Apr-Jun.	**No Potential.** The Study Area lacks serpentine substrate necessary to support this species.	**Not Present.** No further recommendations for this species.
johnny-nip *Castilleja ambigua* var. *ambigua*	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins. Elevation ranges from 0 to 1425 feet (0 to 435 meters). Blooms Mar-Aug.	**Moderate Potential.** The Study Area contains potentially suitable mesic grassland habitat which could support this species.	**Not Present.** This species was not observed during a site-wide survey in July, a period sufficient to identify this species. No further recommendations for this species.
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	Rank 1B.1	Valley and foothill grassland (alkaline). Elevation ranges from 0 to 755 feet (0 to 230 meters). Blooms May-Oct(Nov).	**Unlikely.** Although the Study Area contains potentially suitable grassland habitat, this species is closely associated with alkaline substrates not present in the Study Area.	**Not Present.** No further recommendations for this species.
Point Reyes bird's-beak *Chloropyron maritimum* ssp. *palustre*	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct.	**No Potential.** The Study Area lacks coastal salt marsh habitat necessary to support this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
soft bird's-beak *Chloropyron molle* ssp. *molle*	FE, SR, Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms Jun-Nov.	**No Potential.** The Study Area lacks coastal salt marsh habitat necessary to support this species.	**Not Present.** No further recommendations for this species.
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata*	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 5 to 705 feet (3 to 215 meters). Blooms Apr-Jul(Aug).	**No Potential.** The Study Area lacks coastal salt marsh habitat necessary to support this species.	**Not Present.** No further recommendations for this species.
robust spineflower *Chorizanthe robusta* var. *robusta*	FE, Rank 1B.1	Chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub. Elevation ranges from 5 to 985 feet (3 to 300 meters). Blooms Apr-Sep.	**No Potential.** The Study Area lacks coastal bluff scrub, coastal scrub, and coastal dunes known to support this species.	**Not Present.** No further recommendations for this species.
Bolander's water-hemlock *Cicuta maculata* var. *bolanderi*	Rank 2B.1	Marshes and swamps coastal, fresh or brackish water. Elevation ranges from 0 to 655 feet (0 to 200 meters). Blooms Jul-Sep.	**No Potential.** The Study Area lacks coastal freshwater or salt marsh habitat necessary to support this species.	**Not Present.** No further recommendations for this species.
Franciscan thistle *Cirsium andrewsii*	Rank 1B.2	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms Mar-Jul.	**Unlikely.** The Study Area lacks the vegetation types associated with this species.	**Not Present.** No further recommendations for this species.
Mt. Tamalpais thistle *Cirsium hydrophilum* var. *vaseyi*	Rank 1B.2	Broadleafed upland forest, chaparral, meadows and seeps; serpentine. Elevation ranges from 785 to 2035 feet (240 to 620 meters). Blooms May-Aug.	**No Potential.** The Study Area lacks serpentine seeps most often associated with this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
Santa Clara red ribbons *Clarkia concinna* ssp. *automixa*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 295 to 4920 feet (90 to 1500 meters). Blooms (Apr)May-Jun(Jul).	**No Potential.** The Study Area lacks chaparral and cismontane woodland, and is below the documented elevation range of the species. This species is not known to occur in Contra Costa County (CNPS 2019).	**Not Present.** No further recommendations for this species.
Presidio clarkia *Clarkia franciscana*	FE, SE, Rank 1B.1	Coastal scrub, valley and foothill grassland (serpentine). Elevation ranges from 80 to 1100 feet (25 to 335 meters). Blooms May-Jul.	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species.	**Not Present.** No further recommendations for this species.
round-headed Chinese-houses *Collinsia corymbosa*	Rank 1B.2	Coastal dunes. Elevation ranges from 0 to 65 feet (0 to 20 meters). Blooms Apr-Jun.	**No Potential.** The Study Area lacks coastal dune habitat necessary to support this species.	**Not Present.** No further recommendations for this species.
San Francisco collinsia *Collinsia multicolor*	Rank 1B.2	Closed-cone coniferous forest, coastal scrub. Elevation ranges from 95 to 820 feet (30 to 250 meters). Blooms (Feb)Mar-May.	**No Potential.** The Study Area lacks closed-cone coniferous forest and coastal scrub habitats known to support this species.	**Not Present.** No further recommendations for this species.
western leatherwood *Dirca occidentalis*	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. Elevation ranges from 80 to 1395 feet (25 to 425 meters). Blooms Jan-Mar(Apr).	**No Potential.** The Study Area lacks the vegetation types associated with this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
Tiburon buckwheat *Eriogonum luteolum* var. *caninum*	Rank 1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; serpentine. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms May-Sep.	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species.	**Not Present.** No further recommendations for this species.
slender cottongrass *Eriophorum gracile*	Rank 4.3	Bogs and fens, meadows and seeps, upper montane coniferous forest. Elevation ranges from 4195 to 9515 feet (1280 to 2900 meters). Blooms May-Sep.	**No Potential.** The Study Area lacks perennial emergent wetlands known to support this species, and is well below the documented elevation range of this montane species.	**Not Present.** No further recommendations for this species.
Jepson's coyote thistle *Eryngium jepsonii*	Rank 1B.2	Valley and foothill grassland, vernal pools. Elevation ranges from 5 to 985 feet (3 to 300 meters). Blooms Apr-Aug.	**Unlikely.** The Study Area lacks vernal pool habitat most often associated with this species. This species was not observed during the protocol-level rare plant survey conducted during the species' bloom period.	**Not Present.** No further recommendations for this species.
San Francisco wallflower *Erysimum franciscanum*	Rank 4.2	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland; often serpentine or granitic substrates. Elevation ranges from 0 to 1805 feet (0 to 550 meters). Blooms Mar-Jun.	**No Potential.** The Study Area lacks many of the associated vegetation communities, and does not contain serpentine or granitic substrates. This species has not been reported from Alameda or Contra Costa counties.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
San Joaquin spearscale *Extriplex joaquinana*	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland; alkaline substrates. Elevation ranges from 0 to 2740 feet (1 to 835 meters). Blooms Apr-Oct.	**No Potential.** The Study Area lacks many of the associated vegetation communities, and does not contain alkaline substrates associated with this species.	**Not Present.** No further recommendations for this species.
minute pocket moss *Fissidens pauperculus*	Rank 1B.2	North coast coniferous forest (damp coastal soil). Elevation ranges from 30 to 3360 feet (10 to 1024 meters).	**No Potential.** The Study Area lacks many of the associated vegetation communities, and does not contain alkaline substrates associated with this species.	**Not Present.** No further recommendations for this species.
fragrant fritillary *Fritillaria liliacea*	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland; clay soils, often serpentine. Elevation ranges from 5 to 1345 feet (3 to 410 meters). Blooms Feb-Apr.	**Unlikely.** Although the Study Area contains potentially suitable grassland habitat, which could support this species, the Study Area lacks heavy clay soils and serpentine substrates associated with this species.	**Not Present.** No further recommendations for this species.
blue coast gilia *Gilia capitata* ssp. *chamissonis*	Rank 1B.1	Coastal dunes, coastal scrub. Elevation ranges from 5 to 655 feet (2 to 200 meters). Blooms Apr-Jul.	**No Potential.** The Study Area lacks coastal dunes and coastal scrub habitat necessary to support this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
dark-eyed gilia *Gilia millefoliata*	Rank 1B.2	Coastal dunes. Elevation ranges from 5 to 100 feet (2 to 30 meters). Blooms Apr-Jul.	**No Potential.** The Study Area lacks coastal dunes and coastal scrub habitat necessary to support this species.	**Not Present.** No further recommendations for this species.
San Francisco gumplant *Grindelia hirsutula* var. *maritima*	Rank 3.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; serpentine. Elevation ranges from 45 to 1310 feet (15 to 400 meters). Blooms Jun-Sep.	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species. This species is restricted to immediate coastal environments, and is not known from Contra Costa or Alameda counties.	**Not Present.** No further recommendations for this species.
Diablo helianthella *Helianthella castanea*	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation ranges from 195 to 4265 feet (60 to 1300 meters). Blooms Mar-Jun.	**Moderate Potential.** The Study Area contains potentially suitable grassland habitat which could support this species, although the Study Area is narrowly below the documented elevation range.	**Not Present.** This species was not observed during a site-wide survey in July, a period sufficient to identify this species vegetatively. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
congested-headed hayfield tarplant *Hemizonia congesta* ssp. *congesta*	Rank 1B.2	Valley and foothill grassland. Elevation ranges from 65 to 1835 feet (20 to 560 meters). Blooms Apr-Nov.	**Unlikely.** Although the Study Area contains potentially suitable grassland habitat which could support this species, the Study Area is outside of the known range of the nominate subspecies (ssp. *congesta*), which is only known from Marin, Sonoma, Mendocino, Lake, San Francisco, and San Mateo counties.	**Not Present.** The common yellow hayfield tarplant (*H. c.* ssp. *lutescens*), was observed in association with purple needlegrass grassland in the Study Area. No further actions recommended for this species.
Marin western flax *Hesperolinon congestum*	FT, ST, Rank 1B.1	Chaparral, valley and foothill grassland; serpentine. Elevation ranges from 15 to 1215 feet (5 to 370 meters). Blooms Apr-Jul.	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species.	**Not Present.** No further recommendations for this species.
water star-grass *Heteranthera dubia*	Rank 2B.2	Marshes and swamps (alkaline, still or slow-moving water). Elevation ranges from 95 to 4905 feet (30 to 1495 meters). Blooms Jul-Oct.	**No Potential.** The Study Area lacks marshes and swamps necessary to support this species.	**Not Present.** No further recommendations for this species.
Loma Prieta hoita *Hoita strobilina*	Rank 1B.1	Chaparral, cismontane woodland, riparian woodland. Elevation ranges from 95 to 2820 feet (30 to 860 meters). Blooms May-Jul(Aug-Oct).	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
Santa Cruz tarplant *Holocarpha macradenia*	FT, SE, Rank 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 30 to 720 feet (10 to 220 meters). Blooms Jun-Oct.	**Moderate Potential.** The Study Area contains potentially suitable grassland habitat which could support this species, and there are several historic occurrences of this species within 5 miles of the Study Area.	**Not Present.** This species was observed in full bloom at a documented reference site at Wildcat Canyon Regional Park on July 17, 2019, one day prior to the July protocol-level rare plant survey. This species was not observed in the Study Area during the site-wide survey on July 18, 2019. No further actions recommended for this species.
Kellogg's horkelia *Horkelia cuneata* var. *sericea*	Rank 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub. Elevation ranges from 30 to 655 feet (10 to 200 meters). Blooms Apr-Sep.	**No Potential.** The Study Area lacks the biological communities associated with this species. This species is not known from Contra Costa County.	**Not Present.** No further recommendations for this species.
island rock lichen *Hypogymnia schizidiata*	Rank 1B.3	Closed-cone coniferous forest, chaparral. Elevation ranges from 1180 to 1330 feet (360 to 405 meters).	**No Potential.** The Study Area lacks the associated vegetation communities and is well below the documented elevation range of this species.	**Not Present.** No further recommendations for this species.
coast iris *Iris longipetala*	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May.	**Unlikely.** Although the Study Area contains potentially suitable mesic grassland habitat which could support this species, this perennial species was not observed in the Study Area.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
Carquinez goldenbush *Isocoma arguta*	Rank 1B.1	Valley and foothill grassland (alkaline). Elevation ranges from 0 to 65 feet (1 to 20 meters). Blooms Aug-Dec.	**Unlikely**. The Study Area lacks alkaline substrates known to support this species.	**Not Present.** No further recommendations for this species.
Contra Costa goldfields *Lasthenia conjugens*	FE, Rank 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area lacks vernal pools and alkaline substrates necessary to support this species.	**Not Present.** No further recommendations for this species.
Delta tule pea *Lathyrus jepsonii* var. *jepsonii*	Rank 1B.2	Marshes and swamps (freshwater and brackish). Elevation ranges from 0 to 15 feet (0 to 5 meters). Blooms May-Jul(Aug-Sep).	**No Potential.** The Study Area lacks freshwater and brackish marshes and swamps known to support this species.	**Not Present.** No further recommendations for this species.
beach layia *Layia carnosa*	FE, SE, Rank 1B.1	Coastal dunes, coastal scrub (sandy). Elevation ranges from 0 to 195 feet (0 to 60 meters). Blooms Mar-Jul.	**No Potential.** The Study Area lacks coastal dunes and coastal scrub necessary to support this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
bristly leptosiphon *Leptosiphon acicularis*	Rank 4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 180 to 4920 feet (55 to 1500 meters). Blooms Apr-Jul.	**Unlikely.** Although the Study Area contains potentially suitable grassland habitat, this species typically occurs on thin, shallow soils, with sparse vegetative cover. Thin, shallow, soils are not present within the Study Area, and dense thatch cover within grassland habitat likely precludes this diminutive annual species. This species is not known to occur in Contra Costa County.	**Not Present.** No further recommendations for this species.
rose leptosiphon *Leptosiphon rosaceus*	Rank 1B.1	Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jul.	**No Potential.** The Study Area lacks coastal bluff scrub necessary to support this species.	**Not Present.** No further recommendations for this species.
San Francisco lessingia *Lessingia germanorum*	FE, SE, Rank 1B.1	Coastal scrub (remnant dunes). Elevation ranges from 80 to 360 feet (25 to 110 meters). Blooms (Jun)Jul-Nov.	**No Potential.** The Study Area lacks coastal bluff scrub necessary to support this species.	**Not Present.** No further recommendations for this species.
woolly-headed lessingia *Lessingia hololeuca*	Rank 3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 45 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	**No Potential.** The Study Area lacks serpentine habitat necessary to support this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
Mason's Lilaeopsis *Lilaeopsis masonii*	SR, Rank 1B.1	Marshes and swamps (brackish or freshwater), riparian scrub. Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Nov.	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	**Not Present.** No further recommendations for this species.
Oregon Meconella *Meconella oregona*	Rank 1B.1	Coastal prairie, coastal scrub. Elevation ranges from 820 to 2035 feet (250 to 620 meters). Blooms Mar-Apr.	**No Potential.** The Study Area lacks coastal prairie, shaded canyons known to support this species	**Not Present.** No further recommendations for this species.
Mt. Diablo cottonweed *Micropus amphibolus*	Rank 3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 145 to 2705 feet (45 to 825 meters). Blooms Mar-May.	**Unlikely.** Although the Study Area contains potentially suitable grassland habitat, this species typically occurs on thin, shallow soils, with sparse vegetative cover. Thin, shallow, soils are not present within the Study Area, and dense thatch cover within grassland habitat likely precludes this diminutive annual species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
marsh microseris *Microseris paludosa*	Rank 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 1165 feet (5 to 355 meters). Blooms Apr-Jun(Jul).	**Unlikely.** Although the Study Area contains potentially suitable grassland habitat. This species has not been documented in Contra Costa or Alameda counties. The only documented occurrence within the vicinity of the Study Area is from 1956 from the Presidio of San Francisco. This occurrence is considered extirpated.	**Not Present.** No further recommendations for this species.
San Antonio Hills Monardella *Monardella antonina* ssp. *antonina*	Rank 3	Chaparral, cismontane woodland. Elevation ranges from 1045 to 3280 feet (320 to 1000 meters). Blooms Jun-Aug.	**No Potential.** The Study Area lacks the associated habitats and is well below the documented elevation range of the species.	**Not Present.** No further recommendations for this species.
woodland woolythreads *Monolopia gracilens*	Rank 1B.2	Broadleafed upland forest (openings), chaparral (openings), cismontane woodland, north coast coniferous forest (openings), valley and foothill grassland. Elevation ranges from 325 to 3935 feet (100 to 1200 meters). Blooms (Feb)Mar-Jul.	**No Potential.** The Study Area lacks the associated vegetation communities and serpentine substrates associated with this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
white-rayed pentachaeta *Pentachaeta bellidiflora*	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland (often serpentine). Elevation ranges from 110 to 2035 feet (35 to 620 meters). Blooms Mar-May.	**Unlikely.** Although the Study Area contains potentially suitable grassland habitat which could support this species, the Study Area is outside of the documented geographical range of the species which includes Marin, Santa Cruz, and San Mateo counties. There is one remaining extant occurrence of this species in San Mateo County, on serpentine-derived, clay soils.	**Not Present.** No further recommendations for this species.
Michael's rein orchid *Piperia michaelii*	Rank 4.2	Coastal bluff scrub, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest. Elevation ranges from 5 to 3000 feet (3 to 915 meters). Blooms Apr-Aug.	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	**Not Present.** No further recommendations for this species.
Choris' popcornflower *Plagiobothrys chorisianus* var. *chorisianus*	Rank 1B.2	Chaparral, coastal prairie, coastal scrub. Elevation ranges from 5 to 525 feet (3 to 160 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area lacks the vegetation communities associated with this species. This species is not known to occur in Contra Costa county.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
San Francisco popcornflower *Plagiobothrys diffusus*	SE, Rank 1B.1	Coastal prairie, valley and foothill grassland. Elevation ranges from 195 to 1180 feet (60 to 360 meters). Blooms Mar-Jun.	**Moderate Potential.** The Study Area contains potentially suitable mesic grassland habitat which could support this species. The nearest documented occurrence is from approximately 16.5 miles southeast of the Study Area in the Oakland Hills (CDFW 2019).	**Presence Unknown.** The site visits were conducted outside of the documented bloom period sufficient to identify this species. Conduct a botanical survey in spring to determine absence/presence of this species.
Hairless popcornflower *Plagiobothrys glaber*	Rank 1A	Meadows and seeps, marshes and swamps; coastal salt marshes, vernal pools, and alkaline meadows. Elevation range: 45 to 585 feet (15 to 145 meters). Blooms: March – May.	**No Potential.** The Study Area lacks salt marshes and alkaline wetlands associated with this species.	No further actions recommended for this species.
Oregon Polemonium *Polemonium carneum*	Rank 2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation ranges from 0 to 6005 feet (0 to 1830 meters). Blooms Apr-Sep.	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	**Not Present.** No further recommendations for this species.
Marin knotweed *Polygonum marinense*	Rank 3.1	Marshes and swamps (coastal salt or brackish). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms (Apr)May-Aug(Oct).	**No Potential.** The Study Area lacks marshes and swamps associated with this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
Lobb's aquatic buttercup *Ranunculus lobbii*	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 45 to 1540 feet (15 to 470 meters). Blooms Feb-May.	**Moderate Potential.** The Study Area contains a seasonally flooded pond which likely contains sufficient annual water depth which could support this species.	**Presence Unknown.** The site visits were conducted outside of the documented bloom period sufficient to identify this species. Conduct a botanical survey in spring to determine absence/presence of this species.
adobe sanicle *Sanicula maritima*	SR, Rank 1B.1	Chaparral, coastal prairie, meadows and seeps, valley and foothill grassland; serpentine, clay soil. Elevation ranges from 95 to 785 feet (30 to 240 meters). Blooms Feb-May.	**No Potential.** The Study Area lacks serpentine-derived clay soils necessary to support this species.	**Not Present.** No further recommendations for this species.
chaparral ragwort *Senecio aphanactis*	Rank 2B.2	Chaparral, cismontane woodland, coastal scrub. Elevation ranges from 45 to 2625 feet (15 to 800 meters). Blooms Jan-Apr(May).	**No Potential.** The Study Area lacks serpentine-derived clay soils necessary to support this species.	**Not Present.** No further recommendations for this species.
San Francisco campion *Silene verecunda* ssp. *verecunda*	Rank 1B.2	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 95 to 2115 feet (30 to 645 meters). Blooms (Feb)Mar-Jun(Aug).	**No Potential.** Although the Study Area contains potentially suitable grassland habitat, this species is known from the immediate coastal areas on sandy soils in San Francisco, San Mateo, and Santa Cruz counties, and is not known from Alameda or Contra Costa counties.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
long-styled sand-spurrey *Spergularia macrotheca* var. *longistyla*	Rank 1B.2	Meadows and seeps, marshes and swamps. Elevation ranges from 0 to 835 feet (0 to 255 meters). Blooms Feb-May(Jun).	**No Potential.** The Study Area lacks marshes and swamps associated with this species.	**Not Present.** No further recommendations for this species.
Santa Cruz microseris *Stebbinsoseris decipiens*	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 30 to 1640 feet (10 to 500 meters). Blooms Apr-May.	**Unlikely.** Although the Study Area contains potentially suitable grassland habitat which could support this species, the Study Area is outside of the documented geographical range of the species which includes Monterey, Marin, Santa Cruz, San Francisco, and San Mateo counties.	**Not Present.** No further recommendations for this species.
most beautiful jewelflower *Streptanthus albidus* ssp. *peramoenus*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland; serpentine. Elevation ranges from 310 to 3280 feet (95 to 1000 meters). Blooms (Mar)Apr-Sep(Oct).	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species.	**Not Present.** No further recommendations for this species.
Tiburon jewelflower *Streptanthus glandulosus ssp. niger*	FE, SE, Rank 1B.1	Valley and foothill grassland (serpentine). Elevation ranges from 95 to 490 feet (30 to 150 meters). Blooms May-Jun.	**No Potential.** The Study Area lacks serpentine substrates necessary to support this species.	**Not Present.** No further recommendations for this species.
slender-leaved pondweed *Stuckenia filiformis* ssp. *alpina*	Rank 2B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 980 to 7055 feet (300 to 2150 meters). Blooms May-Jul.	**No Potential.** The Study Area lacks freshwater marshes and swamps and is well below the known elevation range of the species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
California seablite *Suaeda californica*	FE, Rank 1B.1	Marshes and swamps (coastal salt). Elevation ranges from 0 to 50 feet (0 to 15 meters). Blooms Jul-Oct.	**No Potential.** The Study Area lacks coastal salt marshes necessary to support this species.	**Not Present.** No further recommendations for this species.
Suisun Marsh aster *Symphyotrichum lentum*	Rank 1B.2	Marshes and swamps (brackish and freshwater). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms (Apr)May-Nov.	**No Potential.** The Study Area lacks brackish or freshwater marshes and swamps known to support this species.	**Not Present.** No further recommendations for this species.
two-fork clover *Trifolium amoenum*	FE, Rank 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elevation ranges from 15 to 1360 feet (5 to 415 meters). Blooms Apr-Jun.	**Moderate Potential.** The Study Area contains potentially suitable grassland habitat and associated species. The nearest documented occurrence is along Sobrante Ridge, approximately 6.25 miles east-southest (ESE) from the Study Area (CDFW 2019).	**Presence Unknown.** The site visits were conducted outside of the documented bloom period sufficient to identify this species. Conduct a botanical survey in spring to determine absence/presence of this species.
saline clover *Trifolium hydrophilum*	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun.	**No Potential.** The Study Area lacks alkaline wetlands and coastal salt marshes known to support this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
San Francisco owl's-clover *Triphysaria floribunda*	Rank 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 30 to 525 feet (10 to 160 meters). Blooms Apr-Jun.	**Unlikely.** Although the Study Area contains potentially suitable grassland habitat which could support this species, the Study Area is outside of the documented geographical range of the species which includes Marin, San Francisco, and San Mateo counties.	**Not Present.** No further recommendations for this species.
coastal Triquetrella *Triquetrella californica*	Rank 1B.2	Coastal bluff scrub, coastal scrub. Elevation ranges from 30 to 330 feet (10 to 100 meters).	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	**Not Present.** No further recommendations for this species.
oval-leaved viburnum *Viburnum ellipticum*	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 705 to 4595 feet (215 to 1400 meters). Blooms May-Jun.	**No Potential.** The Study Area lacks the vegetation communities associated with this species.	**Not Present.** No further recommendations for this species.
WILDLIFE				
Mammals				
Alameda Island mole *Scapanus latimanus parvus*	SSC	Only known from Alameda Island. Found in a variety of habitats, especially annual and perennial grasslands. Prefers moist, friable soils. Avoids flooded soils.	**No potential.** The Study Area is outside of this species range which is limited to Alameda Island.	No further action are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
American badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Unlikely.** The nearest documented occurrence is over 10 miles from the Study Area (CDFW 2019). The Study Area is surrounded by urban development and does not provide open shrub or forest habitat to support this species.	No further actions are recommended for this species.
big free-tailed bat *Nyctinomops macrotis*	SSC, WBWG Medium-High Priority	Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	**Unlikely.** The Study Area does not provide high cliffs or rocky outcrops for roosting. This species may occasionally forage over the area.	No further actions are recommended for this species.
hoary bat *Lasiurus cinereus*	WBWG: High Priority	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Unlikely.** The Study Area does not provide suitable forested roosting habitat with dense foilage. This species may occasionally forage over the Study Area.	No further actions are recommended for this species.
pallid bat *Antrozous pallidus*	SSC, WBWG High Priority	Occupies a variety of habitats at low elevation including grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	**Unlikely.** The Study Area does not contain open, rocky areas suitable for roosting by this species. Pallid bat may occasionally forage over the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
Point Reyes jumping mouse *Zapus trinotatus orarius*	SSC	Restricted to Point Reyes Peninsula in western Marin County. Occurs in wet, marshy coastal meadows and humus-filled dark soils of coast redwood forests, also thickets of woody vegetation along streams and seeps. Eats mainly grass seeds with some insects and fruit taken. Builds grassy nests on ground under vegetation, burrows in winter.	**No Potential.** The Study Area is outside of this species range which is restricted to western Marin County.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
salt-marsh harvest mouse *Reithrodontomys raviventris*	FE, SE, CFP	Endemic to emergent salt and brackish wetlands of the San Francisco Bay Estuary. Pickleweed marshes are primary habitat; also occurs in various other wetland communities with dense vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	**Unlikely.** The Study Area does not contain habitat to support this species. Salt-marsh harvest mouse has been documented at Giant Marsh and Breuner marsh approximately 0.25 miles west of the Study Area. However, the Study Area is primarily a eucalyptus grove and managed golf course land. The Study Area was altered from its native state as early as 1939 when it was planted with eucalyptus and the golf course was established. The Study Area is bordered to the west by two sets of train tracks, Giant Highway, and residential and commercial development. It is unlikely that the Study Area would support this species due to historic and ongoing disturbance, barriers to dispersal, and lack of brackish wetland.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
salt-marsh wandering shrew *Sorex vagrans halicoetes*	SSC	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6 to 8 feet above sea level where abundant driftwood is scattered among *Salicornia*.	**Unlikely.** This species was documented in Giant Marsh west of the Study Area in 1950 (CDFW 2019). However, the Study Area does not contain marsh habitat or driftwood to support this species. The Study Area is separated from suitable habitat by residential and urban development, train tracks, and Giant Highway.	No further actions are recommended for this species.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	SSC	Forest habitats of moderate canopy and moderate to dense understory. Also in chaparral habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	**Unlikely.** The eucalyptus grove within the Study Area contains an open canopy with limited understory. Additionally, the Study Area is within a greater area of urban and commercial development. The Study Area is unlikely to support nesting by this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
San Pablo vole *Microtus californicus sanpabloensis*	SSC	Saltmarshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow.	**Unlikely.** The Study Area does not contain suitable saltmarsh habitat. The Study Area was altered from its native state as early as 1939 when it was planted with eucalyptus and the golf course was established. The Study Area is bordered to the west by two sets of train tracks, Giant Highway, and residential and commercial development. It is unlikely that the Study Area would support this species due to historic and ongoing disturbance, barriers to dispersal, and lack of brackish wetland.	No further actions are recommended for this species.
silver-haired bat *Lasionycteris noctivagans*.	WBWG Medium Priority	Primarily a forest dweller, feeding over streams, ponds, and open brushy areas. Summer habitats include a variety of forest and woodland types, both coastal and montane. Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark.	**Unlikely.** The Study Area does not contain suitable hollow trees, snags, buildings, rocks, or caves to support roosting by this species. This species may occasionally forage over the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
southern sea otter *Enhydra lutris nereis*	FT, CFP	Nearshore marine environments from about Año Nuevo, San Mateo County. To Point Sal, Santa Barbara County. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	**No Potential.** The Study Area does not contain a marine environment to support this species.	No further actions are recommended for this species.
Suisun shrew *Sorex ornatus sinuosus*	SSC	Tidal marshes of the northern shores of San Pablo and Suisun Bays. Require dense low-lying cover and driftweed and other litter above the mean hightide line for nesting and foraging.	**No Potential.** The Study Area is outside of this species documented range which is limited to the northern shores of the San Pablo and Suisun Bays.	No further actions are recommended for this species.
Townsend's big-eared bat *Corynorhinus townsendii*	SSC; WBWG: High Priority	Associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves and mines and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	**Unlikely.** The Study Area does not contain buildings, caves, or mines suitable for roosting by this species. This species may occasionally forage over the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
western red bat *Lasiurus blossevillii*	SSC, WBWG High Priority	Roosts primarily in trees. Roost sites often are in edge habitats adjacent to streams, fields, or occasionally in urban areas.	**Unlikely.** The Study Area does not provide suitable roosting habitat. This species may occasionally forage over the area. The nearest documented occurrence is over 15 miles to the southwest (CDFW 2019).	No further actions are recommended for this species.
Birds				
Alameda song sparrow *Melospiza melodia pusillula*	SSC	Year-round resident of salt marshes bordering the south arm of San Francisco Bay. Inhabits primarily pickleweed marshes; nests placed in marsh vegetation, typically shrubs such as gumplant.	**Unlikely.** The Study Area does not contain marsh vegetation to support this species. This species occurs in the south arm of the San Francisco Bay, south of the Study Area.	No further actions are recommended for this species.
American peregrine falcon *Falco peregrinus anatum*	CFP	Year-round resident and winter visitor. Occurs in a wide variety of habitats, though often associated with coasts, bays, marshes and other bodies of water. Nests on protected cliffs and also on man-made structures including buildings and bridges. Preys on birds, especially waterbirds. Forages widely.	**Unlikely.** The Study Area does not contain suitable cliff or structures to support nesting by this species. This species may fly through the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
bald eagle *Haliaeetus leucocephalus*	SE, CFP	Occurs year-round in California, but primarily a winter visitor. Nests in large trees in the vicinity of larger lakes, reservoirs and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	**Unlikely.** The Study Area does not contain large trees, lakes, or reservoirs for nesting or foraging. Bald eagles may be observed flying over the Study Area, but are unlikely to nest or forage there.	No further actions are recommended for this species.
bank swallow *Riparia riparia*	ST	Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	**No Potential.** The Study Area does not contain cliff or bank habitat to support this species.	No further actions are recommended for this species.
black-crowned night heron *Nycticorax nycticorax*	none (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees but also in patches of emergent vegetation. Rookery sites are often on islands and usually located adjacent to foraging areas: margins of lakes and bays.	**Unlikely**. The nearest documented rookery is over 5 miles from the Study Area (CDFW 2019). The Study Area is not immediately adjacent to suitable foraging habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
burrowing owl *Athene cunicularia*	SSC	Resident in open, dry annual or perennial grasslands, deserts and scrub lands characterized by low-growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, to provide subterranean nesting and roosting habitat.	**Unlikely.** The Study Area does not contain burrow habitat suitable for this species. This species has few documented occurrences in the vicinity of the Study Area (CDFW 2019, eBird 2019).	No further actions are recommended for this species.
California black rail *Laterallus jamaicensis coturniculus*	ST, CFP	Resident in marshes (saline to freshwater) with dense vegetation below four inches in height. Prefers larger, undisturbed marshes close to a major water source.	**No Potential.** The Study Area does not contain marsh habitat to support this species. This species has been documented in Giant Marsh, approximately 0.25 miles from the Study Area. The Study Area is separated from documented occurrences by residential and commercial development, train tracks, and Giant Highway.	No further actions are recommended for this species.
California least tern *Sterna antillarum browni*	FE, SE	Summer visitor, nesting along the coast from San Francisco Bay south to northern Baja California. Breeds colonially on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, land fills, or paved areas. Forages in estuaries and coastal lagoons.	**Unlikely.** The Study Area does not provide bare, sparsely vegetated areas to support nesting by this species. This species may fly over the Study Area. The nearest documented nesting colony is over 12 miles to the south in Alameda (CDFW 2019).	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
California Ridgway's (clapper) rail *Rallus obsoletus obsoletus*	FE, SE, CFP	Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on molluscs and crustaceans.	**No Potential.** The Study Area does not contain marsh or intertidal habitat to support this species. Ridgway's rail has been documented near Giant Marsh, southwest of the Study Area (CDFW 2019). The Study Area is separated from documented occurrences by residential and commercial development, train tracks, and Giant Highway.	No further actions are recommended for this species.
double-crested cormorant *Phalacrocorax auritus*	none	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	**Unlikely**. The nearest documented rookery is over 5 miles from the Study Area (CDFW 2019). The Study Area is not characteristic of typical rookery habitat.	No further actions are recommended for this species.
grasshopper sparrow *Ammodramus savannarum*	SSC	Summer resident. Breeds in open grasslands in lowlands and foothills, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	**Unlikely.** The Study Area does not contain suitable open grassland to support foraging and nesting by this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
golden eagle *Aquila chrysaetos*	CFP, SSC	Resident in rolling foothills with open grasslands, scattered trees, and cliff-walled canyons. Avoids dense coniferous forest. Prey primarily on mammals.	**Unlikely.** This species may occasionally fly over the Study Area. However, the Study Area is within a developed area and does not contain open grassland with suitable trees or cliff habitat to support nesting or foraging by this species.	No further actions are recommended for this species.
great blue heron *Ardea herodias*	none (breeding sites protected by CDFW); CDF sensitive	Year-round resident. Nests colonially or semi-colonially in tall trees and on cliffs, also sequested terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely**. The nearest documented rookery is over 5 miles from the Study Area (CDFW 2019). The Study Area is not characteristic of typical rookery habitat.	No further actions are recommended for this species.
great egret *Ardea alba*	none (breeding sites protected by CDFW); CDF sensitive	Year-round resident. Nests colonially or semi-colonially, usually in trees, occasionally on the ground or elevated platforms. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely**. The nearest documented rookery is over 5 miles from the Study Area (CDFW 2019). The Study Area is not characteristic of typical rookery habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
loggerhead shrike *Lanius ludovicianus*	SSC	Resident in open habitats with scattered shrubs, trees, posts, etc. from which to forage for large insects and small vertebrates. Nest well concealed above ground in densely-foliaged shrub or tree.	**Unlikely.** The Study Area does not provide suitable open foraging habitat for this species.	No further actions are recommended for this species.
northern harrier *Circus hudsonius (cyaneus)*	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	**Unlikely.** The Study Area does not contain suitable open habitat for foraging and nesting by this species.	No further actions are recommended for this species.
San Francisco (salt marsh) common yellowthroat *Geothlypis trichas sinuosa*	SSC	Resident of San Francisco Bay region in salt and freshwater marshes. Requires thick, continuous cover down to water surface for foraging, and tall grasses, tule patches or willows for nesting.	**Unlikely.** No marsh habitat is present in the Study Area.	No further actions are recommended for this species.
Samuels (San Pablo) song sparrow *Melospiza melodia samuelis*	SSC	Year-round resident of tidal marshes along the north side of San Francisco and San Pablo Bays. Typical habitat is dominated by pickleweed, with gumplant and other shrubs present in the upper zone for nesting. May forage in areas adjacent to marshes.	**Unlikely.** No marsh habitat is present in the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
snowy egret *Egretta thula*	none (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees, at times in sequestered beds of dense tules. Rookery sites usually situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	**Unlikely**. The nearest documented rookery is over 5 miles from the Study Area (CDFW 2019). The Study Area is not characteristic of typical rookery habitat.	No further actions are recommended for this species.
short-eared owl *Asio flammeus*	SSC	Resident and winter visitor in open lowlands, including salt and freshwater marshes, meadows, and irrigated fields. Tall vegetation patches (grasses, tules, etc.) required for nesting and roosting. Nests on dry ground in depression concealed in vegetation.	**Unlikely.** The Study Area does not contain open lowlands or patches of tall vegetation typically required for nesting and roosting. The Study Area is within an urban area and is adjacent to residential and commercial development.	No further actions are recommended for this species.
Suisun song sparrow *Melospiza melodia maxillaris*	SSC	Year-round resident of brackish-water marshes along Suisun Bay. Inhabits cattails, tules, bulrushes and other emergent vegetation, including pickleweed. Nests typically placed in shrubs.	**Unlikely.** No marsh habitat is present in the Study Area. The Study Area is outside of this species typical range.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
tricolored blackbird *Agelaius tricolor*	SC, SSC	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	**Unlikely.** The Study Area does not contain dense emergent vegetation to support a nesting colony.	No further actions are recommended for this species.
western snowy plover *Charadrius nivosus (alexandrines) nivosus*	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	**Unlikely.** The Study Area does not provide bare, sparsely vegetated areas to support nesting by this species. There are no nearby documented occurrences (CDFW 2019).	No further actions are recommended for this species.
white-tailed kite *Elanus leucurus*	CFP	Resident of coastal and valley lowlands with scattered trees. Often associated with agricultural areas. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	**Moderate Potential.** The Study Area contains trees which may support nesting by this species. The Study Area is within a managed golf course, reducing potential prey base. . However, there are nearby undeveloped lots which may provide foraging opportunities.	Initial project work and disturbance will occur from August 16 to January 31, outside of the nesting bird season, to the extent feasible. If work must be initiated during the nesting season, a pre-disturbance nesting-bird survey will be conducted by a qualified biologist no more than 14 days prior to vegetation removal or initial ground disturbance. See section 5.4 for further details.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
yellow-breasted chat *Icteria virens*	SSC	Summer resident, occurring in riparian areas with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow, blackberry, and wild grape.	**Unlikely.** The Study Area does not contain foraging or nesting habitat for this species.	No further actions are recommended for this species.
yellow rail *Coturnicops noveboracensis*	SSC	Summer resident in eastern Sierra Nevada in Mono County, breeding in shallow freshwater marshes and wet meadows with dense vegetation. Also a rare winter visitor along the coast and other portions of the state. Extremely cryptic.	**Unlikely.** The Study Area does not contain freshwater marsh or wet meadows to support nesting or foraging by this species.	No further actions are recommended for this species.
yellow-headed blackbird *Xanthocephalus xanthocephalus*	SSC	Summer resident. Breeds colonially in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Requires abundant large insects such as dragonflies; nesting is timed for maximum emergence of insect prey.	**Unlikely.** The Study Area does not contain freshwater emergent wetland with deep vegetation to support nesting or foraging by this species.	No further actions are recommended for this species.
Reptiles and Amphibians				

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT, ST	Inhabits chaparral and foothill-hardwood habitats in the eastern Bay Area. Prefers south-facing slopes and ravines with rock outcroppings where shrubs form a vegetative mosaic with oak trees and grasses and small mammal burrows provide basking and refuge.	**No Potential.** The Study Area lacks chaparral and foothill hardwood habitats and is outside of this species documented range (CDFW 2019). The Study Area is surrounded to the east by urban development, which creates an impassable barrier to this species.	No further actions are recommended for this species.
California giant salamander *Dicamptodon ensatus*	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	**No Potential.** The Study Area does not contain forested aquatic habitat to support this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
California red-legged frog *Rana draytonii*	FT, SSC	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	**Unlikely.** The Study Area does not contain suitable aquatic for this species, and does not lie within any logical dispersal corridor. The Study Area is separated from documented occurrences by miles of urban development that serve as a barrier to dispersal (CDFW 2019). The nearest known occurrence is approximately 5 miles from the Study Area.	No further actions are recommended for this species.
California tiger salamander *Ambystoma californiense*	FT, ST	Most of the life cycle is spent in underground refuges, especially ground squirrel burrows. Vernal pools or other seasonal water sources are necessary for breeding.	**No Potential.** The Study Area is outside of the current known range for California tiger salamander. The nearest documented occurrence is on Alameda island and is considered extirpated (CDFW 2019).	No further actions are recommended for this species.
foothill yellow-legged frog *Rana boylii*	SC, SSC	Found in or adjacent to rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	**Unlikely.** The Study Area does not contain suitable stream habitat to support this species. The nearest documented occurrences are over 5 miles away and are considered extirpated (CDFW 2019).	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
green sea turtle *Chelonia mydas*	FT (west coast populations)	Found in fairly shallow waters inside reefs, bays and inlets with marine grass and algae. Open beaches with a sloping platform and minimal disturbance are required for nesting. This species exhibits high site fidelity.	**No Potential.** This species is uncommon along the California coast. This turtles prefers warm waters and only a few sightings have been documented in the San Francisco Bay Area. The Study Area does not contain marine habitat.	No further actions are recommended for this species.
western pond turtle *Emys (= Clemmys) marmorata*	SSC	Occurs in perennial ponds, lakes, rivers, streams and marshes with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter. Requires associated upland habitat with friable soil for nesting.	**Unlikely.** No suitable aquatic habitat is present within the Study Area. The Study Area is separated from documented occurrences by miles of urban development (CDFW 2019). Land within the Study Area has been managed for golf course operations, further minimizing potential for this species to establish.	No further actions are recommended for this species.
Fish				
delta smelt *Hypomesus transpacificus*	FT, SE	Lives in the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt; most often at salinities < 2 ppt.	**No Potential.** The Study Area does not provide suitable aquatic habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
eulachon – Southern DPS *Thaleichthys pacificus*	FT, SSC	Found in Klamath River, Mad River, Redwood Creek and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand and woody debris.	**No Potential.** The Study Area does not provide suitable aquatic habitat.	No further actions are recommended for this species.
longfin smelt *Spirinchus thaleichthys*	FC, ST, SSC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	**No Potential.** The Study Area does not provide suitable aquatic habitat.	No further actions are recommended for this species.
Sacramento perch *Archoplites interruptus*	SSC	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefers warm water. Aquatic vegetation is essential for young. Tolerates a wide range of physio-chemical water conditions.	**No Potential.** The Study Area does not provide suitable aquatic habitat.	No further actions are recommended for this species.
Sacramento splittail *Pogonichthys macrolepidotus*	SSC	Endemic to the rivers of the central valley, but now confined to the delta, Suisun Bay and associated marshes. Slow moving river sections, dead end sloughs. Require flooded vegetation for spawning and foraging for young.	**No Potential.** The Study Area does not provide suitable aquatic habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
tidewater goby *Eucyclogobius newberryi*	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches; requires fairly still but not stagnant water and high oxygen levels.	**No Potential.** The Study Area does not provide suitable aquatic habitat.	No further actions are recommended for this species.
Invertebrates				
Bay checkerspot butterfly *Euphydryas editha bayensis*	FT	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *O. purpurscens* are the secondary host plants.	**Unlikely.** The Study Area is outside of this species range. The nearest documented occurrence is approximately 15 miles away and is considered extirpated in that area (CDFW 2019).	No further actions are recommended for this species.
Callippe silverspot butterfly *Speyeria callippe callippe*	FE	Host plant is Johnny jump-up (*Viola pedunculata*). Most adults found on east-facing slopes. Males congregate on hilltops in search of females.	**Unlikely.** The nearest documented occurrence is over 10 miles from the Study Area (CDFW 2019). The Study Area and its immediate vicinity do not provide east-facing slopes or hilltops. No Johnny jump-up was observed during site visits.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
Mission blue butterfly *Icaricia icarioides missionensis*	FE	Inhabits grasslands and coastal chaparral of the San Francisco peninsula and southern Marin County, but mostly found on San Bruno Mountain. Three larval host plants: *Lupinus albifrons*, *L. variicolor*, and *L. formosus*, of which *L. albifrons* is favored.	**No Potential.** The Study Area is outside of this species current range which is limited to the San Francisco peninsula and southern Marin County.	No further actions are recommended for this species.
monarch butterfly *Danaus plexippus*	Winter roosts protected by CDFW	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	**Unlikely**. A documented monarch roost exists approximately 0.5 miles north of the Study Area (CDFW 2019). A focused monarch survey was conducted on March 4, 2019 by WRA. No monarchs were observed during the survey. The Study Area lacks multiple key features of typical roost sites including an appropriate understory and canopy structure favorable to protection from the wind.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN STUDY AREA	RESULTS AND RECOMMENDATIONS
San Bruno elfin butterfly *Callophrys mossii bayensis*	FE, SSI	Limited to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on in rocky outcrops and cliffs in coastal scrub habitat on steep, north-facing slopes within the fog belt. Species range is tied to the distribution of the larval host plant, Sedum spathulifolium.	**No Potential.** The Study Area is outside of this species current documented range which is limited to San Mateo County.	No further actions are recommended for this species.
western bumblebee *Bombus occidentalis*	SC	Once widespread in the western United States and Canada, populations of this insect have drastically declined in recent decades. Pollinates a variety of wild flowering plants and crops. Nests in the ground, usually in association with small mammal burrows with sunny aspects.	**Unlikely.** The Study Area is within this species historic range. However, currently populations are thought to be restricted to high elevation sights in the Sierras with scattered occurrences on the northern California coast (Xerces, 2018).	No further actions are recommended for this species.

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
FC	Federal Candidate
SE	State Endangered
ST	State Threatened
SC	State Candidate
SSC	CDFW Species of Special Concern
CFP	CDFW Fully Protected
WBWG	Western Bat Working Group Medium or High Priority
Rank 1A	CNPS Rank 1A: Plants presumed extinct in California
Rank 1B	CNPS Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2A	CNPS Rank 2A: Plants presumed extirpated in California, but more common elsewhere
Rank 2B	CNPS Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	CNPS Rank 3: Plants about which CNPS needs more information (a review list)
Rank 4	CNPS Rank 4: Plants of limited distribution (a watch list)

Potential to Occur:

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

APPENDIX D -

SITE PHOTOGRAPHS

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Photograph 1. Photograph depicting a seasonal wetland in the northeastern portion of the Study Area. The seasonal wetland is dominated by Italian ryegrass (*Festuca perennis*). This feature originates from a culvert along the edge of the golf course and may be in part fed by artificial irrigation. Photograph taken July 18, 2019.



Photograph 2. Photogrpah depicting an artificial man-made pond during the January 10, 2019 site visit. This pond is seasonally flooded and draws down during the dry season. Potential riparian arroyo willow thicket associated with the pond is shown in the background.



Photograph 3. Photograph depicting seasonal wetland is dominated by Pacific aster (*Symphyotrichum chilense*, FAC) in the northwest portion of the Study Area. Photograph taken July 18, 2019.



Photograph 4. Sample point depicting an ephemeral drainage in the central portion of the Study Area. This feature originates from a culvert along the edge of the golf course, and is likely supplemented by artificial irrigation. Photograph taken January 10, 2019.



Photograph 5. Photograph depicting creeping ryegrass grassland dominated by creeping ryegrass (*Elymus triticoides*), in the western portion of the Study Area. Photograph taken July 18, 2019.



Photograph 6. Photograph depicting non-native annual grassland dominated by slim oat (*Avena barbata*) in the northern portion of the Study Area. Photograph taken July 18, 2019.



Photograph 7. Photograph depicting disturbed area in the western portion of the Study Area, used for vegetation and debris stockpiling. Photograph taken January 10, 2019.



Photograph 8. Photograph depicting blue gum grove, a non-native planted windrow dominated by blue gum (*Eucalyptus globulus*). Photograph taken July 18, 2019.

B.2 - Wetland Delineation Report

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Delineation of Waters of the U.S.

MLC HOLDINGS RICHMOND COUNTRY CLUB DEVELOPMENT PROJECT
RICHMOND, CONTRA COSTA COUNTY, CALIFORNIA





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TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Study Background 1
1.2 Regulatory Background 1
2.0 METHODS 5
2.1 Wetlands 5
2.2 Non-Wetland Waters 8
3.0 STUDY AREA DESCRIPTION 10
4.0 Results 13
4.1 Wetlands 13
4.2 Non-Wetland Waters 14
5.0 CONCLUSION 15
6.0 REFERENCES 16

LIST OF FIGURES

Figure 1. Study Area Location Map 3
Figure 2. Study Area Soils Map 11

LIST OF TABLES

Table 1. Wetland Indicator Classification 6
Table 2. Summary of Potential Section 404 Jurisdictional Features within the Study Area 13

LIST OF APPENDICES

Appendix A – Preliminary Section 404 Jurisdictional Map
Appendix B – Arid West Wetland Delineation Data Sheets
Appendix C – Representative Photographs of the Study Area
Appendix D – Plant Species Observed in the Study Area
Appendix E – WETS Analysis Worksheets

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1.0 INTRODUCTION

1.1 Study Background

On July 18, and August 8, 2019, WRA Inc. (WRA), on behalf of MLC Holdings, Inc. (Applicant), conducted a routine level wetland delineation at the site of an approximately 25.91-acre portion of the Richmond Country Club property located at 1 Markovich Lane (APNs #405-050-019, and -006), in the northern portion of the City of Richmond, Contra Costa County, California (Study Area). The routine wetland delineation was preceded by a preliminary wetland assessment site visit conducted by WRA on January 10, 2019. The purpose of the delineation was to determine the presence and extent of wetlands and non-wetland waters potentially subject to federal jurisdiction under Section 404 of the Clean Water Act. This report presents the methods and results of the delineation.

1.2 Regulatory Background

Section 404 of the Clean Water Act gives the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) regulatory and permitting authority regarding discharge of dredged or fill material into "navigable waters of the United States." Section 502(7) of the Clean Water Act defines navigable waters as "waters of the United States, including territorial seas." Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term "waters of the United States" as it applies to the jurisdictional limits of the authority of the Corps under the Clean Water Act. A summary of this definition of "waters of the U.S." in 33 CFR 328.3 includes (1) waters used for commerce; (2) interstate waters and wetlands; (3) "other waters" such as intrastate lakes, rivers, streams, and wetlands; (4) impoundments of waters; (5) tributaries to the above waters; (6) territorial seas; and (7) wetlands adjacent to waters. Therefore, for purposes of the determining Corps jurisdiction under the Clean Water Act, "navigable waters" as defined in the Clean Water Act are the same as "waters of the U.S." defined in the CFR.

The limits of Corps jurisdiction under Section 404 as given in 33 CFR Section 328.4 are as follows: (a) *Territorial seas:* three nautical miles in a seaward direction from the baseline; (b) *Tidal waters of the U.S.:* high tide line or to the limit of adjacent non-tidal waters; (c) *Non-tidal waters of the U.S.:* ordinary high water mark or to the limit of adjacent wetlands; (d) *Wetlands:* to the limit of the wetland.

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Sources: National Geographic, WRA | Prepared By: njander, 8/20/2019

Figure 1. Study Area Regional Location Map

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

0 1 2 Miles

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2.0 METHODS

Prior to conducting field surveys, reference materials were reviewed, including the *Soil Survey of Contra Costa County* (USDA 1977), online soil data (CSRL 2019, USDA 2019a), National Wetland Inventory (NWI) data (USFWS 2019), rainfall data (UCANR 2019), WETS precipitation data (USDA 2019b), the Richmond USGS 7.5' quadrangle (USGS 1980), and aerial photos of the site (Google Earth 2019, NETR 2019).

A preliminary wetland assessment site visit was conducted on January 10, 2019. The purpose of of the wetland assessment was identify potential wetlands and waters features in the Study Area warranting further investigation, and to document presence or absence of wetland hydrology indicators during the rainy season. Following the wetland assessment, a focused evaluation of indicators of wetlands and other waters was performed in the Study Area on July 18, and August 8, 2019. The methods used in this study to delineate jurisdictional wetlands and waters are based on the *U.S. Army Corps of Engineers Wetlands Delineation Manual* ("Corps Manual"; Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* ("Arid West Supplement"; Corps 2008). The routine method for wetland delineation described in the Corps Manual was used to identify areas potentially subject to Corps Section 404 jurisdiction within the Study Area. A general description of the Study Area, including plant communities present, topography, and land use was also generated during the delineation visits. The methods for evaluating the presence of wetlands and other "waters of the U.S." employed during the site visit are described in detail below.

2.1 Wetlands

The Study Area was evaluated for the presence or absence of indicators of the three wetland parameters described in the Corps Manual (Environmental Laboratory 1987) and Arid West Supplement (Corps 2008).

The Federal Code of Regulations defines wetlands as:

> *Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*
>
> 40 CFR 230.3 and 33 CFR 328.3(b)

The three parameters used to delineate wetlands are the presence of: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the Corps Manual, for areas not considered "problem areas" or "atypical situations":

> *....[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland determination.*
>
> Environmental Laboratory (1987)

Data on vegetation, hydrology, and soils collected at sample points during the delineation site visit was reported on Arid West Supplement data forms. Once an area was determined to be a

potential jurisdictional wetland, its boundaries were delineated using GPS equipment with sub-meter accuracy. The areas of potential jurisdictional wetlands were measured digitally using ArcGIS software. Indicators described in the Arid West Supplement were used to make wetland determinations at each sample point in the Study Area and are summarized below.

Vegetation

Plant species observed in the Study Area were identified using the *Jepson Manual, Second Edition* (Baldwin et al. 2012), and the Jepson eFlora (Jepson Flora Project 2019). Plants were assigned a wetland indicator status according to the National Wetland Plant List (NWPL; Lichvar et al. 2016). Where differences in nomenclature occur between the Jepson Manual or the Jepson eFlora and the NWPL, the species name as it occurred in the NWPL is listed in brackets. Other relevant synonyms may also be provided in brackets.

Wetland indicator statuses listed in the NWPL are based on the expected frequency of occurrence in wetlands as shown in Table 1 below.

Table 1. Wetland Indicator Classification

Classification (Abbreviation)	Definition*	Hydrophytic Species? (Y/N)
Obligate (OBL)	Almost always is a hydrophyte, rarely in uplands	Y
Facultative Wetland (FACW)	Usually is a hydrophyte but occasionally found in uplands	Y
Facultative (FAC)	Commonly occurs as either a hydrophyte or non-hydrophyte	Y
Facultative Upland (FACU)	Occasionally is a hydrophyte but usually occurs in uplands	N
Upland/Not Listed (UPL/NL)	Rarely is a hydrophyte, almost always in uplands	N

*See Lichvar et al. (2016)

The presence of hydrophytic vegetation was then determined based on indicator tests described in the Arid West Supplement. The Arid West Supplement requires that a three-step process be conducted to determine if hydrophytic vegetation is present. The procedure first requires the delineator to apply the “50/20 rule” (Indicator 1; Dominance Test) described in the manual. To apply the “50/20 rule”, dominant species are chosen independently from each stratum of the community. Dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. Dominants are the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total vegetative cover. If greater than 50 percent of the dominant species have an OBL, FACW, or FAC status, the sample point meets the hydrophytic vegetation criterion.

If the sample point fails Indicator 1 and both hydric soils and wetland hydrology are not present, then the sample point does not meet the hydrophytic vegetation criterion, unless the site is a problematic wetland situation. However, if the sample point fails Indicator 1 but hydric soils and wetland hydrology are both present, the delineator must apply Indicator 2.

Indicator 2 is known as the Prevalence Index. The prevalence index is a weighted average of the wetland indicator status for all plant species within the sampling plot. Each indicator status is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5). Indicator 2 requires the delineator to estimate the percent cover of each species in every stratum of the community and sum the cover estimates for any species that is present in more than one stratum. The delineator must then organize all species into groups according to their wetland indicator status and calculate the Prevalence Index using the following formula, where A equals total percent cover:

$$PI = \frac{A_{OBL} + 2A_{FACW} + 3A_{FAC} + 4A_{FACU} + 5A_{UPL}}{A_{OBL} + A_{FACW} + A_{FAC} + A_{FACU} + A_{UPL}}$$

The Prevalence Index will yield a number between 1 and 5. If the Prevalence Index is equal to or less than 3, the sample point meets the hydrophytic vegetation criterion. However, if the community fails Indicator 2, the delineator must proceed to Indicator 3.

Indicator 3 is known as Morphological Adaptations. If more than 50 percent of the individuals of a FACU species have morphological adaptations for life in wetlands, that species is considered to be a hydrophyte and its indicator status should be reassigned to FAC. If such observations are made, the delineator must recalculate Indicators 1 and 2 using a FAC indicator status for this species. The sample point meets the hydrophytic vegetation criterion if either test is satisfied.

Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days in the Arid West region). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts, or secondary indicators such as the FAC-neutral test, presence of a shallow aquitard, or crayfish burrows. The Arid West Supplement contains 16 primary hydrology indicators and 10 secondary hydrology indicators. Only one primary indicator is required to meet the wetland hydrology criterion; however, if secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

The presence or absence of the primary or secondary indicators described in the Arid West Supplement was utilized to determine if sample points within the Study Area met the wetland hydrology criterion.

Prior to conducting fieldwork, WRA conducted an analysis of current and long-term rainfall levels using the WETS guidance provided by the USDA (1995). Long-term average rainfall levels were determined from the National Climate Data Center (NCDC) weather station in Richmond (NCDC #47414). Current rainfall levels were determined from the same weather station.

Soils

The Natural Resource Conservation Service (NRCS) defines a hydric soil as follows:

> *A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.*
>
> Federal Register July 13, 1994,
> U.S. Department of Agriculture, NRCS

Soils formed over long periods of time under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. Hydric soils can have a hydrogen sulfide (rotten egg) odor, low chroma matrix color, generally designated 0, 1, or 2, used to identify them as hydric, presence of redox concentrations, gleyed or depleted matrix, or high organic matter content.

Specific indicators that can be used to determine whether a soil is hydric for the purposes of wetland delineation are provided in the NRCS *Field Indicators of Hydric Soils in the U.S., Version 8.1* (USDA 2017). The Arid West Supplement provides a list of 23 of these hydric soil indicators which are known to occur in the Arid West region. Soil samples were collected and described according to the methodology provided in the Arid West Supplement. Soil chroma and values were determined by utilizing a standard Munsell soil color chart (Munsell Color 2009). Hydric soils were determined to be present if any of the soil samples met one or more of the 23 hydric soil indicators described in the Arid West Supplement.

2.2 Non-Wetland Waters

This study also evaluated the presence of non-wetland waters of the U.S. (i.e., waters other than wetlands) potentially subject to U.S. Army Corps of Engineers jurisdiction under Section 404 of the Clean Water Act. Other areas, besides wetlands, subject to Corps jurisdiction include lakes, rivers and streams (including intermittent streams) in addition to all areas below the HTL in areas subject to tidal influence. Jurisdiction in non-tidal areas extends to the ordinary high water mark (OHWM) defined as:

> *...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*
>
> Federal Register Vol. 51, No. 219,
> Part 328.3 (e). November 13, 1986

Identification of the ordinary high water mark followed the Corps Regulatory Guidance Letter No. 05-05, *Ordinary High Water Mark Identification* (Corps 2005).

3.2 Areas Potentially Exempt from Section 404 Jurisdiction

Some areas that meet the technical criteria for wetlands or waters may not be jurisdictional under the CWA per Section 404 regulations and the Corps Manual. Included in this category are:

(i) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act are not waters of the United States.

(i) Prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

(ii) The following ditches:
   a. Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
   b. Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.
   c. Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (o)(1)(i) through (iii) of this section.

(iii) The following features:
   a. Artificially irrigated areas that would revert to dry land should application of water to that area cease;
   b. Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
   c. Artificial reflecting pools or swimming pools created in dry land;
   d. Small ornamental waters created in dry land;
   e. Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;
   f. Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and
   g. Puddles.

(iv) Groundwater, including groundwater drained through subsurface drainage systems.

(v) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land (33 CFR Section 230.3 [i-vii]).

Features meeting the criteria for wetlands and non-wetland waters within the Study Area were evaluated in the context of these exemptions for making determinations of areas potentially within the Corps' jurisdiction.

3.0 STUDY AREA DESCRIPTION

The Study Area consists of approximately 25.91-acre portion of the Richmond Country Club property, east of Giant Highway and north of Richmond Parkway, approximately 0.35 miles east of San Pablo Bay. The Study Area is predominantly west-facing, with gently rolling hills that slope to the west. Historic aerials and the Richmond Country Club website indicate that the site has been in use as a golf course since 1924 (NETR 2019, Richmond Country Club 2019).

Vegetation

The majority of the site consists of developed, landscaped areas including portions of the existing golf course, a planted blue gum (*Eucalyptus globulus*) windrow, an existing worker residence. The western portion of the Study Area consists of disturbed areas, including soil and vegetation stockpile areas associated with golf course maintenance. The Study Area is predominantly west-facing, with gently rolling hills that slope to the west. Undeveloped, and less disturbed portions of the Study Area consist of ruderal non-native grasslands, with patches of remnant native perennial bunchgrass grasslands dominated by creeping ryegrass (*Elymus* triticoides, FAC), or purple needlegrass (*Stipa pulchra*,NL), in upland settings on slopes.

Dominant vegetation in seasonal wetland areas included facultative (FAC) to facultative-wetland (FACW) grasses, graminoids, and forbs such as Italian ryegrass (*Festuca perennis,* FAC), colonial bentgrass (*Agrostis capillaris,* FAC), brown-headed rush (*Juncus phaeocephalus*, FACW), Pacific aster (*Symphyotrichum chilense,* FAC), and curly dock (*Rumex crispus*, FAC).

Soils

SoilWeb (USDA 2019a) indicates that the Study Area contains two native soil types composed of one soil series: Tierra loam, 2 to 9 percent slopes, MLRA 14; and Tierra loam, 9 to 15 percent slopes, MLRA14, as depicted in Appendix A, Figure 2. The majority of observed soils within the Study Area appeared to be native with occasional areas of soil disturbance from previous excavation, scraping, or debris stockpiling. Soil series that make up the soil mapping units are described below.

Tierra Series: The Tierra series consists of deep, moderately well drained soils that formed in alluvial materials from sedimentary rocks. These soils are typically situated on dissected terraces and low hills with slopes of 2 to 50 percent. In a typical profile, the surface layer (Ap/A12 horizon) consists of a strongly to medium acid (pH 5.5 to 6.0), very dark grayish brown (10YR 3/2) to very dark gray (10YR 3/1) fine sandy loam or loam from 0 to 11 inches depth. This is underlain by a B21t/B22t layer of sligthtly acid (pH 6.5), very dark brown (20YR 2/2) to dark brown (10YR 3/3), clay from 12 to 15 inches depth. This is underlain by a B3 layer of moderately alkaline (pH 8.0) grayish brown (10YR 5/2) heavy clay loam with many prominent reddish brown (5YR 5/4, 4/4) mottles from 25 to 43 inches depth. This is underlain by a C layer of mildly alkaline (pH 7.5), dark brown (10YR 4/3), clay loam with many large prominent reddish brown (2.5YR 5/4) and yellowish brown (10YR 5/4) mottles (CSRL 2019). Tierra loam, 2 to 9 percent slopes, MLRA 14; and Tierra loam, 9 to 15 percent slopes, MLRA14 are not considered hydric soils (USDA 2019b).

Hydrology

The Study Area is located entirely within the San Pablo Bay watershed (HUC 18050002). The primary hydrologic source for the Study Area is direct precipitation, and runoff from surrounding areas to the east, which likely includes supplemental artificial hydrology inputs from irrigation



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Sources: Esri Streaming - NAIP 2016, WRA | Prepared By: njander, 9/4/2019

Figure 2. Soils

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

0 200 400 Feet

N

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runoff from the adjacent golf course. The majority of seasonal wetland features delineated in the Study Area receive direct hydrology inputs from culvert outfalls along the edge of the golf course. All wetland and non-wetlands waters features are presumed to ultimately drain into San Pablo Bay, located less than 0.5 miles west of the Study Area.

The Study Area is located within the coastal fog belt of the Bay Area. Average annual precipitation for Richmond (047414), located approximately 5 miles south-southwest (SSW), is 23.14 inches, with the majority falling as rain in the winter months (November through March). The mean monthly low and high temperatures in degrees Fahrenheit range from 42.6 in January to 74.1 in July (WRCC 2019). Persistent fog is common during the summer months.

A comparison of current rainfall levels from the closest weather station to the Study Area (Richmond, NCDCD #047414) with the long-term average rainfall data (i.e., the WETS table) showed that rainfall conditions were normal during the month periods preceding the site visits. However, the overall precipitation total for the 2019 water year to date (October 1, 2018 to August 7, 2019), was above normal with 33.47 inches of rainfall (142 percent of normal). Worksheets for the WETS analyses are included in Appendix E.

4.0 RESULTS

The extent of areas potentially subject to Section 404 jurisdiction within the Study Area are summarized in Table 2 and depicted in Appendix A. A description of these potentially jurisdictional areas is provided in the following sections. Vegetation, soils and hydrology data collected during delineation site visits are reported on standard Corps Arid West Region data forms included in Appendix B. Photographs of representative portions of the Study Area and sample points are shown in Appendix C. A list of plant species observed during the site visit is included in Appendix D.

Table 2. Summary of Potential Section 404 Jurisdictional Features within the Study Area

Habitat Type (Cowardin et al. 1979)	Area (acres/[linear feet])	Potential Jurisdictional Waters of the U.S. (acres)
Potential Jurisdictional Section 404 Wetlands		
Seasonal Wetland (PE2MC)	0.20	0.20
Subtotal	**0.20**	**0.20**
Potential Jurisdictional Section 404 Non-wetland Waters		
Ephemeral Drainage (R4SBA)	0.07 [292]	0.07 [292]
Pond (PUBAx)	0.01	0.01
Subtotal	**0.08**	**0.08**
TOTAL	**0.28**	**0.28**

4.1 Wetlands

Seasonal Wetland (PE2MC). The Study Area contains six seasonal wetland features (NWI classification = PE2MC, palustrine emergent wetland, seasonally flooded) which are potential

jurisdictional waters of the U.S. These features are typically situated in slightly concave depressions and low points between convex hillslopes where water drains through. Seasonal wetlands in the Study Area include one presumably natural enclosed depression (SW-4), and one fringe wetland associated with a man-made, excavated pond feature (SW-1). The remaining four seasonal wetland features are associated with two existing culvert outfalls, and appear to be at least in part influenced by supplemental artificial hydrology inputs from irrigation runoff from the adjacent golf course. Two of these features (SW-5, and 6) are located in slightly concave topographic swales which originate from culvert outfalls. SW-5 contained slow-moving, flowing water during the January wetland assessment site visit. The slightly concave topography flattens out along the western border of the wetland where the concentrated flow fans out to sheet flow, and eventually subsurface flow beneath a dense layer of Kikuyu grass (*Pennisetum clandestinum*, FACU), a perennial rhizomatous non-native invasive grass. By contrast, SW-6 transitions into, a narrow, approximately 1-foot wide ephemeral drainage, which transitions into seasonal wetland SW- 3 at toe of slope.

Seasonal wetlands within the Study Area were dominated by facultative to facultative-wetland species including Italian ryegrass (FAC), colonial bentgrass (FAC), brown-headed rush (FACW), Pacific aster (FAC), and curly dock (FAC). Soils in areas identified as seasonal wetlands predominantly met the hydric soil indicator F6 (Redox Dark Surface), with the exception of one seasonal wetland (SW-5) which met hydric soil indicator F3 (Depleted Matrix). Wetland soils in the Study Area ranged from dark gray (10YR 4/1), to black (10YR 2/1) matrix color with distinct to prominent redoximorphic concentrations in the matrix and along pore linings. Hydrology indicators included direct observation of surface water, high water table, and saturation during the January wetland assessment site visit, as well as Biotic Crust (B12) primary indicator, and Saturation Visible on Aerial Imagery (C9), and FAC-Neutral Test (D5) secondary indicators.

Seasonal wetlands presented in this report are likely to be considered jurisdictional by the Corps as they meet the three parameters as described in the Corps Manual and are assumed to ultimately drain into the San Pablo Bay, a Traditional Navigable Waters (TNW) of the U.S. These wetlands are also likely to be considered jurisdictional by the Regional Water Quality Control Board under the Porter-Cologne Act and Section 401 of the CWA.

4.2 Non-Wetland Waters

Ephemeral Drainage. The Study Area contains three potentially jurisdictional ephemeral drainage features totaling approximately 0.07 acre (292 linear feet). All three features (originate from culverts. ED-2 consists of a narrow, approximately 10-foot long drainage channel which originates from a culvert in the southeast corner of the Study Area. That channel disappears and fans out to sheet flow over uplands to the west. ED-1, in the southwest corner of the Study Area is a headcut likely caused by sheet flow from the culvert in the southeast corner of the Study Area. ED-3 originates from a culvert at the western edge of the golf course, and is bordered on its upstream and downstream ends by seasonal wetlands. The precise origin of the contributing hydrology to these features was not ascertained, and contributing hydrology is likely in part influenced by golf course irrigation. These features flow off-site and under the bordering railroad tracks to the east via culverts beneath the railroad tracks, are assumed to ultimately drain into the San Pablo Bay. Areas mapped as ephemeral drainage are likely considered jurisdictional under Sections 401 and 404 of the CWA, the Porter-Cologne Water Quality Control Act.

Pond. The Study Area contains one presumably man-made pond within the northern portion of the Study Area, totaling approximately 0.01 acre. The pond is situated at the toe of a slope beneath a disturbed hillside, which is currently used as a debris pile. Historical aerial photographs

(Google Earth 2019) indicate that this feature was likely excavated in dry land some time between 1993 and 2002, and has been persistent up to the time of the site visit. The pond was inundated during the January site visit, and water depth appeared to be 2 to 3 feet deep. However, this feature dries down during the dry season, and contained sparse cover (less than 5 percent) of swamp grass (*Crypsis schoendoides*, FACW).

Although the pond was likely excavated in dry land, incidental to construction activity or fill procurement, the feature appears to be abandoned, and is currently meeting indicators of OHWM. Under current CWA regulations, this feature may be considered exempt per 33 CFR Section 230.3 (iv) (e) as it appears to be a water-filled depression created in dry land incidental to construction activity. However, the Project Applicant will be seeking a Preliminary Jurisdictional Determination (PJD) for the Project which does not allow for exempt features, and therefore all delineated features within the Study Area are considered potentially jurisdictional.

5.0 CONCLUSION

The Study Area was determined to contain 0.20 acre of wetlands, and 0.08 acre (292 linear feet) that may be subject to Corps jurisdiction under Section 404 of the Clean Water Act. These features are also likely to be considered jurisdictional by the RWQCB under the Porter-Cologne Act and Section 401 of the CWA. The wetland areas are seasonal wetlands dominated by hydrophytic vegetation composed of FAC-, FACW- and OBL-classified plants and containing indicators of hydric soils and wetland hydrology; it is assumed that these wetlands ultimately drain into San Pablo Bay, a TNW of the U.S.

The conclusion of this delineation is based on conditions observed at the time of the field surveys conducted on January 10, July 18, and August 8, 2019. The final determination of wetland boundaries for regulatory purposes is the sole responsibility of the agencies that regulate development in wetlands. Therefore, the results of this report should be verified by the appropriate regulatory agencies prior to any construction activities at the site.

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Appendix A

Preliminary Section 404 Jurisdictional Map

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Type	Label	Cowardin Code	Acre(s)	Latitude	Longitude
Ephemeral Drainage	ED-1	R4SBA	0.04	37.98404	-122.35151
Ephemeral Drainage	ED-2	R4SBA	0.01	37.98421	-122.35086
Ephemeral Drainage	ED-3	R4SBA	0.02	37.98883	-122.35227
Pond	P-1	PUBAx	0.01	37.99041	-122.35290
Seasonal Wetland	SW-1	PE2MC	<0.01	37.99045	-122.35293
Seasonal Wetland	SW-2	PE2MC	0.10	37.99194	-122.35312
Seasonal Wetland	SW-3	PE2MC	0.05	37.98910	-122.35270
Seasonal Wetland	SW-4	PE2MC	0.01	37.98616	-122.35206
Seasonal Wetland	SW-5	PE2MC	0.02	37.99210	-122.35237
Seasonal Wetland	SW-6	PE2MC	0.02	37.98866	-122.35195

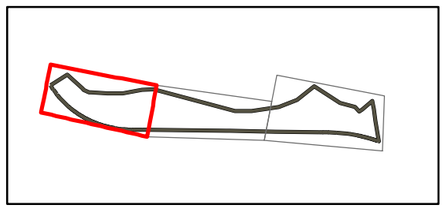


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Sources: NAIP Imagery 2016, WRA | Prepared By: njander, 8/23/2019

Study Area (25.91 ac.)
Control Points
Sample Points
Culvert

Potential Waters of the U.S.
Seasonal Wetland (0.20 ac.)
Ephemeral Drainage (0.07 ac.)
Pond (0.01 ac.)



0 50 100 Feet

N

Figure X. Aquatic Resources Delineation (Sheet 1)

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

wra ENVIRONMENTAL CONSULTANTS

Type	Label	Cowardin Code	Acre(s)	Latitude	Longitude
Ephemeral Drainage	ED-1	R4SBA	0.04	37.98404	-122.35151
Ephemeral Drainage	ED-2	R4SBA	0.01	37.98421	-122.35086
Ephemeral Drainage	ED-3	R4SBA	0.02	37.98883	-122.35227
Pond	P-1	PUBAx	0.01	37.99041	-122.35290
Seasonal Wetland	SW-1	PE2MC	<0.01	37.99045	-122.35293
Seasonal Wetland	SW-2	PE2MC	0.10	37.99194	-122.35312
Seasonal Wetland	SW-3	PE2MC	0.05	37.98910	-122.35270
Seasonal Wetland	SW-4	PE2MC	0.01	37.98616	-122.35206
Seasonal Wetland	SW-5	PE2MC	0.02	37.99210	-122.35237
Seasonal Wetland	SW-6	PE2MC	0.02	37.98866	-122.35195



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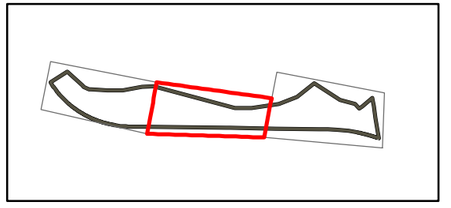
Sources: NAIP Imagery 2016, WRA | Prepared By: njander, 8/23/2019

Figure X. Aquatic Resources Delineation (Sheet 2)

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

Study Area (25.91 ac.)
Control Points
Sample Points
Culvert

Potential Waters of the U.S.
Seasonal Wetland (0.20 ac.)
Ephemeral Drainage (0.07 ac.)
Pond (0.01 ac.)



0 50 100 Feet

N

wra ENVIRONMENTAL CONSULTANTS

Type	Label	Cowardin Code	Acre(s)	Latitude	Longitude
Ephemeral Drainage	ED-1	R4SBA	0.04	37.98404	-122.35151
Ephemeral Drainage	ED-2	R4SBA	0.01	37.98421	-122.35086
Ephemeral Drainage	ED-3	R4SBA	0.02	37.98883	-122.35227
Pond	P-1	PUBAx	0.01	37.99041	-122.35290
Seasonal Wetland	SW-1	PE2MC	<0.01	37.99045	-122.35293
Seasonal Wetland	SW-2	PE2MC	0.10	37.99194	-122.35312
Seasonal Wetland	SW-3	PE2MC	0.05	37.98910	-122.35270
Seasonal Wetland	SW-4	PE2MC	0.01	37.98616	-122.35206
Seasonal Wetland	SW-5	PE2MC	0.02	37.99210	-122.35237
Seasonal Wetland	SW-6	PE2MC	0.02	37.98866	-122.35195



Path: L:\Acad 2000 Files\26000\26210-5\GIS\ArcMap\WetlandDelin20190823.mxd

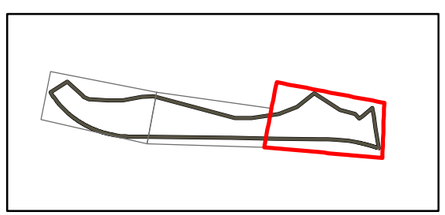
Sources: NAIP Imagery 2016, WRA | Prepared By: njander, 8/23/2019

Figure X. Aquatic Resources Delineation (Sheet 3)

MLC Holdings Richmond
Country Club Due Diligence
Richmond, Contra Costa County, California

Study Area (25.91 ac.)
Control Points
Sample Points
Culvert

Potential Waters of the U.S.
Seasonal Wetland (0.20 ac.)
Ephemeral Drainage (0.07 ac.)
Pond (0.01 ac.)



0 50 100 Feet

N

ENVIRONMENTAL CONSULTANTS

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Appendix B

Arid West Wetland Delineation Data Sheets

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Wetland Determination Data Form - Arid West Region

Project/Site Richmond Country Club City Richmond County Contra Costa Sampling Date 7/18/2019

Applicant/Owner MLC Holdings, Inc. State CA Sampling Point **SP01**

Investigator(s) Scott Yarger, Molly Brewer, WRA, Inc. Section,Township,Range Land Grant - San Pablo

Landform (hillslope, terrace, etc.) Toe of slope Local Relief (concave, convex, none) Concave Slope(%) 0-4

Subregion(LRR) LRR C (Medit. CA) Lat: 37.991983 Long: -122.353079 Datum: WGS 84

Soil Map Unit Name Tierra loam, 2 to 9 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No

Is the Sampled Area within a Wetland? ☒ **Yes** ☐ **No**

Remarks: Sample point SP01 is a wetland sample point, paired with upland sample point, SP02. The sample point is located in a slightly concave wetland swale at the toe of a west-facing slope on the western edge of the Study Area. The wetland boundary was delineated based on a distinct change in vegetation composition, and observed hydric soil, and hydrology indicators.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM **Plot Size:** N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM **Plot Size:** 5' radius			
1. *Symphyotrichum chilense*	40	Yes	FAC
2. *Juncus phaeocephalus*	30	Yes	FACW
3. *Lythrum hyssopifolia*	3	No	OBL
4. *Raphanus sativus*	3	No	NL
5. *Rumex crispus*	1	No	FAC
6. *Avena barbata*	1	No	NL
7.			
8.			
Herb Stratum Total Cover:	78		
WOODY VINE STRATUM **Plot Size:** N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 12 % cover of biotic crust 10

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 2 (A)

Total number of dominant species across all strata? 2 (B)

% of dominant species that are OBL, FACW, or FAC? 100 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%
☐ Prevalence Index is </= 3.0[1]
☐ Morphological adaptations (provide supporting data in remarks)
☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: Sample point meets Dominance Test.

SOIL

Sampling Point SP01

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-8	10YR 3/1	95	7.5YR 3/3	5	C	M, PL	Loam	Distinct redox concentrations.
8-13	10YR 3/1	90	7.5YR 3/3	10	C	M, PL	Loam	Distinct redox concentrations.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: N/A

Depth (inches):

Hydric Soil Present ? ☒ **Yes** ☐ **No**

Remarks: Sample point meets Redox Dark Surface (F6) hydric soil indicator.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☒ Yes ☐ No Depth (inches): 0

Water table present? ☒ Yes ☐ No Depth (inches): 0

Saturation Present? (includes capillary fringe) ☒ Yes ☐ No Depth (inches): 0

Wetland Hydrology Present ? ☒ **Yes** ☐ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: Sample point met Biotic Crust (B12) wetland hydrology indicator during July site visit. Additionally, the sample point met Surface Water (A1), High Water Table (A2), and Saturation (A3) wetland hydrology indicators during the January wetland assessment site visit. Surface water was observed in the feature in January; a high water table, and saturation was present at a depth of 0 inches.

Wetland Determination Data Form - Arid West Region

Project/Site Richmond Country Club City Richmond County Contra Costa Sampling Date 7/18/2019

Applicant/Owner MLC Holdings, Inc. State CA Sampling Point **SP02**

Investigator(s) Scott Yarger, Molly Brewer, WRA, Inc. Section,Township,Range Land Grant - San Pablo

Landform (hillslope, terrace, etc.) Hillslope Local Relief (concave, convex, none) Convex Slope(%) 5

Subregion(LRR) LRR C (Medit. CA) Lat: 37.992029 Long: -122.353155 Datum: WGS 84

Soil Map Unit Name Tierra loam, 2 to 9 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Sample point SP02 is an upland sample point, paired with wetland sample point, SP01. The sample point is located on a gentle slope along the edge of a wetland swale. The wetland boundary was delineated based on a distinct change in vegetation composition, and observed hydric soil, and hydrology indicators.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM Plot Size: 5' radius			
1. *Festuca perennis*	40	Yes	FAC
2. *Raphanus sativus*	30	Yes	NL
3. *Avena barbata*	25	Yes	NL
4. *Bromus diandrus*	1	No	NL
5. *Helminthotheca echioides*	1	No	FAC
6.			
7.			
8.			
Herb Stratum Total Cover:	97		
WOODY VINE STRATUM Plot Size: N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 3 % cover of biotic crust

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 1 (A)

Total number of dominant species across all strata? 3 (B)

% of dominant species that are OBL, FACW, or FAC? 33 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☐ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: Sample point does not meet hydrophytic vegetation indicator.

SOIL

Sampling Point SP02

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-10	10YR 3/2	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Compact gravel/asphalt

Depth (inches): 10

Hydric Soil Present ? ☐ Yes ☒ No

Remarks: A shallow compact gravel/asphalt restrictive layer is present; potentially an old road bed along fence line.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches): _____

Water table present? ☐ Yes ☒ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (inches): _____

Wetland Hydrology Present ? ☐ Yes ☒ No

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No wetland hydrology indicators met.

Wetland Determination Data Form - Arid West Region

Project/Site Richmond Country Club City Richmond County Contra Costa Sampling Date 7/18/2019

Applicant/Owner MLC Holdings, Inc. State CA Sampling Point **SP03**

Investigator(s) Scott Yarger, Molly Brewer, WRA, Inc. Section,Township,Range Land Grant - San Pablo

Landform (hillslope, terrace, etc.) Terrace Local Relief (concave, convex, none) Concave Slope(%) 3

Subregion(LRR) LRR C (Medit. CA) Lat: 37.9907 Long: -122.352775 Datum: WGS 84

Soil Map Unit Name Tierra loam, 2 to 9 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☒ Yes ☐ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Sample point SP03 is an upland sample point. SP03 is located in an apparently man-made depresssion which was investigated for wetland conditions due to the concave topography, and presence of hydrophytic plant species.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM **Plot Size:** N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM **Plot Size:** 5' radius			
1. *Digitaria sanguinalis*	50	Yes	FACU
2. *Festuca perennis*	10	No	FAC
3. *Holcus lanatus*	8	No	FAC
4. *Helminthotheca echioides*	8	No	FAC
5. *Avena barbata*	5	No	NL
6. *Raphanus sativus*	2	No	NL
7. *Lotus corniculatus*	1	No	FAC
8. *Cyperus eragrostis*	1	No	FACW
Herb Stratum Total Cover:	84		
WOODY VINE STRATUM **Plot Size:** N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 6 % cover of biotic crust

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 0 (A)

Total number of dominant species across all strata? 1 (B)

% of dominant species that are OBL, FACW, or FAC? 0 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:	
OBL species	x1	
FACW species	x2	
FAC species	x3	
FACU species	x4	
UPL species	x5	
Column Totals (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☐ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: Thatch is 10 percent cover. Sample point does not meet hydrophytic vegetation indicator.

SOIL

Sampling Point SP03

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-12	10YR 3/1	30	5YR 3/4	5	C	M, PL	Clay loam	Prominent redox concentrations.
	10YR 4/2	65						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: N/A

Depth (inches):

Hydric Soil Present ? ☒ **Yes** ☐ **No**

Remarks: Possible mixed matrix, from soil disturbance. No redox concentrations present in depleted portion of the matrix. Redox only visible in darker soil. Sample point meets Redox Dark Surface (F6) hydric soild indicator.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches):

Water table present? ☐ Yes ☒ No Depth (inches):

Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (inches):

Wetland Hydrology Present ? ☐ **Yes** ☒ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No wetland hydrology indicators observed.

Wetland Determination Data Form - Arid West Region

Project/Site Richmond Country Club City Richmond County Contra Costa Sampling Date 7/18/2019

Applicant/Owner MLC Holdings, Inc. State CA Sampling Point **SP04**

Investigator(s) Scott Yarger, Molly Brewer, WRA, Inc. Section,Township,Range Land Grant - San Pablo

Landform (hillslope, terrace, etc.) Toe of slope Local Relief (concave, convex, none) Concave Slope(%) 0-2

Subregion(LRR) LRR C (Medit. CA) Lat: 37.989052 Long: -122.352707 Datum: WGS 84

Soil Map Unit Name Tierra loam, 2 to 9 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No

Is the Sampled Area within a Wetland? ☒ **Yes** ☐ **No**

Remarks: Sample point SP04 is a wetland sample point, paired with upland sample point, SP05. The sample point is located in a slightly concave wetland swale at the toe of a west-facing slope on the western edge of the Study Area. The wetland boundary was delineated based on a slight to distinct change in vegetation composition, and observed hydric soil, and hydrology indicators.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM **Plot Size:** N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM **Plot Size:** 5' radius			
1. *Festuca perennis*	85	Yes	FAC
2. *Rumex crispus*	5	No	FAC
3. *Elymus triticoides*	5	No	FAC
4. *Raphanus sativus*	1	No	NL
5.			
6.			
7.			
8.			
Herb Stratum Total Cover:	96		
WOODY VINE STRATUM **Plot Size:** N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 4 % cover of biotic crust

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 1 (A)

Total number of dominant species across all strata? 1 (B)

% of dominant species that are OBL, FACW, or FAC? 100 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%
☐ Prevalence Index is </= 3.0[1]
☐ Morphological adaptations (provide supporting data in remarks)
☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: Sample point meets Dominance Test.

SOIL

Sampling Point SP04

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-12	10YR 2/1	98	7.5YR 3/3	2	C	PL	Loam	Distinct redox concentrations.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: N/A

Depth (inches):

Hydric Soil Present ? ☒ Yes ☐ No

Remarks: Sample point meets Redox Dark Surface (F6).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches):

Water table present? ☒ Yes ☐ No Depth (inches): 2

Saturation Present? (includes capillary fringe) ☒ Yes ☐ No Depth (inches): 0

Wetland Hydrology Present ? ☒ Yes ☐ No

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No primary wetland hydrology indicators observed during the July site visit. The sample point met High Water Table (A2), and Saturation (A3) wetland hydrology indicators during the January wetland assessment site visit. High water table was present to a depth of 2 inches during the January wetland assessment site visit, and saturation was observed at 0 inches.

Wetland Determination Data Form - Arid West Region

Project/Site Richmond Country Club City Richmond County Contra Costa Sampling Date 7/18/2019

Applicant/Owner MLC Holdings, Inc. State CA Sampling Point **SP05**

Investigator(s) Scott Yarger, Molly Brewer, WRA, Inc. Section,Township,Range Land Grant - San Pablo

Landform (hillslope, terrace, etc.) Toe of slope Local Relief (concave, convex, none) Concave Slope(%) 6

Subregion(LRR) LRR C (Medit. CA) Lat: 37.988956 Long: -122.352722 Datum: WGS 84

Soil Map Unit Name Tierra loam, 2 to 9 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Sample point SP05 is an upland sample point, paired with wetland sample point, SP04. The sample point is located on a gentle slope along the edge of a wetland swale. The wetland boundary was delineated based on a slight to distinct change in vegetation composition, topographic relief, and observed hydric soil, and hydrology indicators.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM Plot Size: 5' radius			
1. *Stipa pulchra*	40	Yes	NL
2. *Helminthotheca echioides*	15	No	FAC
3. *Avena barbata*	10	No	NL
4. *Brachypodium distachyon*	10	No	NL
5. *Rumex acetosella*	8	No	FACU
6. *Hypochaeris radicata*	3	No	FACU
7. *Sisyrinchium bellum*	3	No	FACW
8.			
Herb Stratum Total Cover:	89		
WOODY VINE STRATUM Plot Size: N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 11 % cover of biotic crust

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 0 (A)

Total number of dominant species across all strata? 1 (B)

% of dominant species that are OBL, FACW, or FAC? 0 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☐ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: Sample point does not meet hydrophytic vegetation indicator.

SOIL

Sampling Point SP05

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[1]	Texture	Remarks
0-12	10YR 2/1	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: N/A

Depth (inches):

Hydric Soil Present ? ☐ **Yes** ☒ **No**

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches):

Water table present? ☐ Yes ☒ No Depth (inches):

Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (inches):

Wetland Hydrology Present ? ☐ **Yes** ☒ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No hydrology indicators observed.

Wetland Determination Data Form - Arid West Region

Project/Site Richmond Country Club City Richmond County Contra Costa Sampling Date 7/18/2019

Applicant/Owner MLC Holdings, Inc. State CA Sampling Point **SP06**

Investigator(s) Scott Yarger, Molly Brewer, WRA, Inc. Section,Township,Range Land Grant - San Pablo

Landform (hillslope, terrace, etc.) Terrace Local Relief (concave, convex, none) Concave Slope(%) 0-3

Subregion(LRR) LRR C (Medit. CA) Lat: 37.986171 Long: -122.352088 Datum: WGS 84

Soil Map Unit Name Tierra loam, 2 to 9 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No

Is the Sampled Area within a Wetland? ☒ **Yes** ☐ **No**

Remarks: Sample point SP06 is a wetland point, paired with upland sample point SP07. The sample point is located in an enclosed depression along the western edge of the Study Area. The wetland boundary was delineated based on a distinct shift in vegetation composition, and topographic relief.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM **Plot Size:** N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM **Plot Size:** 5' radius			
1. *Festuca perennis*	70	Yes	FAC
2. *Rumex crispus*	25	Yes	FAC
3. *Helminthotheca echiodes*	3	No	FAC
4.			
5.			
6.			
7.			
8.			
Herb Stratum Total Cover:	98		
WOODY VINE STRATUM **Plot Size:** N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 2 % cover of biotic crust

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 2 (A)

Total number of dominant species across all strata? 2 (B)

% of dominant species that are OBL, FACW, or FAC? 100 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%
☐ Prevalence Index is </= 3.0[1]
☐ Morphological adaptations (provide supporting data in remarks)
☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: Sample point meet Dominance Test.

SOIL

Sampling Point SP06

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-12	10YR 3/1	95	7.5YR 2.5/3	4	C	M, PL	Clay loam	Distinct redox concentrations.
			2.5/N	1	C	M		Prominent Mn concentrations.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: N/A

Depth (inches):

Hydric Soil Present ? ☒ **Yes** ☐ **No**

Remarks: Sample point meets Redox Dark Surface (F6).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches):

Water table present? ☒ Yes ☐ No Depth (inches): 2

Saturation Present? (includes capillary fringe) ☒ Yes ☐ No Depth (inches): 0

Wetland Hydrology Present ? ☒ **Yes** ☐ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No primary wetland hydrology indicators observed during the July site visit. The sample point met High Water Table (A2), and Saturation (A3) wetland hydrology indicators during the January wetland assessment site visit. High water table was present to a depth of 2 inches during the January wetland assessment site visit, and saturation was observed at 0 inches.

Wetland Determination Data Form - Arid West Region

Project/Site Richmond Country Club City Richmond County Contra Costa Sampling Date 7/18/2019

Applicant/Owner MLC Holdings, Inc. State CA Sampling Point **SP07**

Investigator(s) Scott Yarger, Molly Brewer, WRA, Inc. Section,Township,Range Land Grant - San Pablo

Landform (hillslope, terrace, etc.) Terrace Local Relief (concave, convex, none) Convex Slope(%) 6

Subregion(LRR) LRR C (Medit. CA) Lat: 37.986115 Long: -122.352095 Datum: WGS 84

Soil Map Unit Name Tierra loam, 2 to 9 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Sample point SP07 is an upldnd point, paired with wetland sample point SP06. The sample point is located on the edge of an enclosed depression along the western edge of the Study Area. The wetland boundary was delineated based on a distinct shift in vegetation composition, and topographic relief.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM **Plot Size:** N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM **Plot Size:** 5' radius			
1. *Avena barbata*	45	Yes	NL
2. *Vicia sativa*	25	Yes	FACU
3. *Festuca perennis*	20	Yes	FAC
4. *Stipa pulchra*	5	No	NL
5. *Convolvulus arvensis*	2	No	NL
6. *Helminthotheca echioides*	2	No	FAC
7.			
8.			
Herb Stratum Total Cover:	99		
WOODY VINE STRATUM **Plot Size:**			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 1 % cover of biotic crust

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 1 (A)

Total number of dominant species across all strata? 3 (B)

% of dominant species that are OBL, FACW, or FAC? 33 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☐ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: Sample point does not meet hydrophytic vegetation indicators.

SOIL

Sampling Point SP07

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-12	10YR 3/2	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: N/A

Depth (inches):

Hydric Soil Present ? ☐ **Yes** ☒ **No**

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches):

Water table present? ☐ Yes ☒ No Depth (inches):

Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (inches):

Wetland Hydrology Present ? ☐ **Yes** ☒ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No wetland hydrology indicators observed.

Wetland Determination Data Form - Arid West Region

Project/Site: Richmond Country Club | City: Richmond | County: Contra Costa | Sampling Date: 8/8/2019

Applicant/Owner: MLC Holdings, Inc. | State: CA | Sampling Point: **SP08**

Investigator(s): Scott Yarger, Matt Richmond, WRA, Inc. | Section,Township,Range: Land Grant - San Pablo

Landform (hillslope, terrace, etc.): Terrace | Local Relief (concave, convex, none): Convex | Slope(%): 6

Subregion(LRR): LRR C (Medit. CA) | Lat: 37.992072 | Long: -122.352309 | Datum: WGS 84

Soil Map Unit Name: Tierra loam, 2 to 9 percent slopes | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Hydric Soil Present? ☒ Yes ☐ No

Wetland Hydrology Present? ☒ Yes ☐ No

Is the Sampled Area within a Wetland? ☒ **Yes** ☐ **No**

Remarks: Sample point SP08 is a wetland sample point, paired with upland sample point SP09. The sample point is located in concave swale which originates from a culvert outfall along the edge of the golf course. The hydrology is likely augmented by golf course irrigation. The wetland boundary was delineated based on a distinct shift in vegetation composition, topographic relief, and observed indicators of hydric soils.

VEGETATION (use scientific names)

TREE STRATUM — Plot Size: N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM — Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM — Plot Size: 5' radius			
1. *Agrostis capillaris*	60	Yes	FAC
2. *Festuca perennis*	30	Yes	FAC
3. *Pennisetum clandestinum*	t	No	FACU
4. *Helminthotheca echioides*	t	No	FAC
5.			
6.			
7.			
8.			
Herb Stratum Total Cover:	90		
WOODY VINE STRATUM — Plot Size: N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum: 10 | % cover of biotic crust: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 2 (A)

Total number of dominant species across all strata? 2 (B)

% of dominant species that are OBL, FACW, or FAC? 100 (A/B)

Prevalence Index Worksheet

Total % cover of:		Multiply by:	
OBL species		x1	
FACW species		x2	
FAC species		x3	
FACU species		x4	
UPL species		x5	
Column Totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: Sample point meets Dominance Test. Trees and sapling/shrubs are present within the vicinity of the sample point but not rooted in the feature.

SOIL

Sampling Point SP08

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-8	10YR 4/1	90	7.5YR 3/4	10	C	M, PL	Sandy clay loam	Prominent redox concentrations.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Unknown

Depth (inches): 8

Hydric Soil Present ? ☒ **Yes** ☐ **No**

Remarks: Sample point meets Depleted Matrix (F3) hydric soil indicator. Shovel refusal at 8 inches; possible compact gravel restrictive layer present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☒ Yes ☐ No Depth (inches): 0

Water table present? ☒ Yes ☐ No Depth (inches): 0

Saturation Present? (includes capillary fringe) ☒ Yes ☐ No Depth (inches): 0

Wetland Hydrology Present ? ☒ **Yes** ☐ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: No wetland hydrology indicators observed during the July site visit. The sample point met Surface Water (A1), High Water Table (A2), and Saturation (A3) wetland hydrology indicators during the January wetland assessment site visit. Surface water was observed in the feature in January; a high water table, and saturation was present at a depth of 0 inches.

Wetland Determination Data Form - Arid West Region

Project/Site Richmond Country Club City Richmond County Contra Costa Sampling Date 8/8/2019

Applicant/Owner MLC Holdings, Inc. State CA Sampling Point **SP09**

Investigator(s) Scott Yarger, Matt Richmond, WRA, Inc. Section,Township,Range Land Grant - San Pablo

Landform (hillslope, terrace, etc.) Terrace Local Relief (concave, convex, none) Convex Slope(%) 5

Subregion(LRR) LRR C (Medit. CA) Lat: 37.992073 Long: -122.352323 Datum: WGS 84

Soil Map Unit Name Tierra loam, 2 to 9 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Sample point SP09 is an upland sample point, paired with upland sample point SP08. The sample point is located at the edge of a concave swale that originates from a culvert outfall along the edge of the golf course.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** 25' radius	Absolute % cover	Dominant Species?	Indicator Status
1. *Eucalyptus globulus*	40	Yes	NL
2.			
3.			
4.			
Tree Stratum Total Cover:	40		
SAPLING/SHRUB STRATUM **Plot Size:** 15' radius			
1. *Toxicodendron diversilobum*	25	Yes	FACU
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:	25		
HERB STRATUM **Plot Size:** 5' radius			
1. *Avena barbata*	20	Yes	NL
2. *Carduus pycnocephalus*	10	Yes	NL
3.			
4.			
5.			
6.			
7.			
8.			
Herb Stratum Total Cover:	30		
WOODY VINE STRATUM **Plot Size:**			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 40 % cover of biotic crust

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 0 (A)

Total number of dominant species across all strata? 4 (B)

% of dominant species that are OBL, FACW, or FAC? 0 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☐ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: Thatch and leaf litter is 30 percent cover. Sample point does not meet hydrophytic vegetation criteria.

SOIL

Sampling Point SP09

Profile description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-12	10YR 3/2	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: N/A

Depth (inches):

Hydric Soil Present ? ☐ Yes ☒ No

Remarks: Sample point does not meet hydrophytic vegetation indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches):

Water table present? ☐ Yes ☒ No Depth (inches):

Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (inches):

Wetland Hydrology Present ? ☐ Yes ☒ No

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: Sample point does not meet wetland hydrology indicators.

Appendix C

Representative Photographs of the Study Area

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Photograph 1. Sample point depicting surface water at seasonal wetland SW-6 during the January 10, 2019 wetland assessment site visit.



Photograph 2. Sample point depicting surface water at pond P-1 during the January 10, 2019 wetland assessment site visit. This pond is seasonally flooded and draws down during the dry season.



Photograph 3. Photograph depicting wetland sample point SP-01 located in seasonal wetland SW-2. The seasonal wetland is dominated by Pacific aster (*Symphyotrichum chilense*, FAC). Photograph taken July 18, 2019.



Photograph 4. Photograph depicting upland sample point SP-02 located adjacent to seasonal wetland SW-2. The upland sample point is dominated by Italian ryegrass (*Festuca perennis*, FAC), slim oat (*Avena barbata,* NL), and wild radish (*Raphanus sativus,* NL). Photograph taken July 18, 2019.



Photograph 5. Photograph depicting ephemeral drainage ED-2 which originates from a culvert outfall in the southeast corner of the Study Area. Photograph taken during the January 10, 2019 wetland assessment site visit.



Photograph 6. Photograph depicting ephemeral drainage ED-1, which originates as an erosional headcut in the southwest corner of the Study Area. Photograph taken during the January 10, 2019 wetland assessment site visit.



Photograph 7. Photograph depicting seasonal wetland SW -5, located in a slightly concave swale originating from a culvert outfall. The seasonal wetland is dominated by Italian ryegrass (*Festuca perennis,* FAC), and colonial bentgrass (*Agrostis capillaris*, FAC), Photograph taken July 18, 2019.



Photograph 8. Photograph depicting wetland sample point SP-06 located in seasonal wetland SW-4. The sample point is dominated by Italian ryegrass (*Festuca perennis*, FAC), and curly dock (*Rumex crispus,* FAC). Photograph taken July 18, 2019.



Photograph 9. Photograph depicting soil sample at sample point SP-06 located in seasonal wetland SW-4. The matrix is black (10YR 2/1) when moist, with distinct dark brown (7.5YR 3/3) redoximorphic concentrations, meeting hydric soil indicator F6 (Redox Dark Surface). Photograph taken July 18, 2019.



Photograph 10. Photograph depicting hydric soil indicator B12 (Biotic Crust), observed in seasonal wetland SW-2. Photograph taken July 18, 2019.

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Appendix D

Plant Species Observed in the Study Area

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Appendix D. Plant Species Observed in the Study Area on May 10, 2018.

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	Invasive Status[2]	Wetland Indicator Status[3]
Acacia longifolia	Golden wattle	non-native	tree	-	-	-
Acacia melanoxylon	Blackwood acacia	non-native (invasive)	tree	-	Limited	-
Agrostis capillaris	Colonial bentgrass	non-native	perennial grass	-	-	FAC
Amaryllis belladonna	Naked lady	non-native	perennial herb	-	-	-
Avena barbata	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
Baccharis pilularis	Coyote brush	native	shrub	-	-	-
Brachypodium distachyon	Purple false brome	non-native (invasive)	annual, perennial grass	-	Moderate	-
Briza maxima	Rattlesnake grass	non-native (invasive)	annual grass	-	Limited	-
Bromus catharticus	Rescue grass	non-native	annual, perennial grass	-	-	-
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Bromus hordeaceus	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	Invasive Status[2]	Wetland Indicator Status[3]
Carduus pycnocephalus ssp. pycnocephalus	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
Carpobrotus edulis	Iceplant	non-native (invasive)	perennial herb	-	High	-
Centromadia pungens	Common tarweed	native	annual herb	-	-	FAC
Cirsium vulgare	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
Claytonia perfoliata	Miner's lettuce	native	annual herb	-	-	FAC
Convolvulus arvensis	Field bindweed	non-native	perennial herb, vine	-	-	-
Cordyline australis	Cabbage tree	non-native (invasive)	tree	-	Limited	-
Cortaderia jubata	Andean pampas grass	non-native (invasive)	perennial grass	-	High	FACU
Cotoneaster pannosus	Woolly cotoneaster	non-native (invasive)	shrub	-	Moderate	-
Crypsis schoenoides	Swamp grass	non-native	annual grass	-	-	FACW
Cynosurus echinatus	Dogtail grass	non-native (invasive)	annual grass	-	Moderate	-
Cyperus eragrostis	Tall cyperus	native	perennial grasslike herb	-	-	FACW

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	Invasive Status[2]	Wetland Indicator Status[3]
Cytisus scoparius	Scotch broom	non-native (invasive)	shrub	-	High	-
Digitaria sanguinalis	Crabgrass	non-native	annual grass	-	-	FACU
Dipsacus sativus	Indian teasel	non-native (invasive)	biennial herb	-	Moderate	-
Ehrharta erecta	Upright veldt grass	non-native (invasive)	perennial grass	-	Moderate	-
Elymus triticoides	Beardless wild rye	native	perennial grass	-	-	FAC
Epilobium brachycarpum	Willow herb	native	annual herb	-	-	-
Erigeron canadensis	Canada horseweed	native	annual herb	-	-	FACU
Erodium botrys	Big heron bill	non-native	annual herb	-	-	FACU
Eschscholzia californica	California poppy	native	annual, perennial herb	-	-	-
Eucalyptus globulus	Blue gum	non-native (invasive)	tree	-	Limited	-
Euphorbia peplus	Petty spurge	non-native	annual herb	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	Invasive Status[2]	Wetland Indicator Status[3]
Festuca perennis	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
Foeniculum vulgare	Fennel	non-native (invasive)	perennial herb	-	High	-
Fumaria sp.	-	-	-	-	-	-
Galium aparine	Cleavers	native	annual herb	-	-	FACU
Gastridium phleoides	Nit grass	non-native	annual grass	-	-	FACU
Genista monspessulana	French broom	non-native (invasive)	shrub	-	High	-
Geranium molle	Crane's bill geranium	non-native	annual, perennial herb	-	-	-
Grindelia camporum	Gumweed	native	perennial herb	-	-	FACW
Helminthotheca echioides	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC
Hemizonia congesta ssp. lutescens	Hayfield tarweed	native	annual herb	-	-	-
Hesperocyparis macrocarpa	Monterey cypress	native	tree	Rank 1B.2*	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	Invasive Status[2]	Wetland Indicator Status[3]
Heteromeles arbutifolia	Toyon	native	shrub	-	-	-
Holcus lanatus	Common velvetgrass	non-native (invasive)	perennial grass	-	Moderate	FAC
Hordeum marinum ssp. gussoneanum	Mediterranean barley	non-native (invasive)	annual grass	-	Moderate	FAC
Hordeum murinum	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
Hypochaeris radicata	Hairy cats ear	non-native (invasive)	perennial herb	-	Moderate	FACU
Juncus bufonius	Common toad rush	native	annual grasslike herb	-	-	FACW
Juncus patens	Common rush	native	perennial grasslike herb	-	-	FACW
Juncus phaeocephalus	Brown headed rush	native	perennial grasslike herb	-	-	FACW
Juniperus sp.	-	-	-	-	-	-
Lactuca saligna	Willow lettuce	non-native	annual herb	-	-	UPL
Lactuca serriola	Prickly lettuce	non-native	annual herb	-	-	FACU

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	Invasive Status[2]	Wetland Indicator Status[3]
Lepidium didymum	Lesser swine cress	non-native	annual herb	-	-	-
Ligustrum lucidum	Glossy privet	non-native (invasive)	tree, shrub	-	Limited	-
Lotus corniculatus	Bird's foot trefoil	non-native	perennial herb	-	-	FAC
Lupinus formosus	Western lupine	native	perennial herb	-	-	-
Lupinus nanus	Valley sky lupine	native	annual herb	-	-	-
Lysimachia arvensis	Scarlet pimpernel	non-native	annual herb	-	-	FAC
Lythrum hyssopifolia	Hyssop loosestrife	non-native (invasive)	annual, perennial herb	-	Limited	OBL
Madia gracilis	Gumweed	native	annual herb	-	-	-
Nerium oleander	Oleander	non-native	tree	-	-	-
Oxalis pes-caprae	Bermuda buttercup	non-native (invasive)	perennial herb	-	Moderate	-
Pennisetum clandestinum	Kikuyu grass	non-native (invasive)	perennial grass	-	Limited	FACU
Persicaria sp.	-	-	-	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	Invasive Status[2]	Wetland Indicator Status[3]
Pinus radiata	Monterey pine	native	tree	Rank 1B.1*	-	-
Plantago lanceolata	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
Polygonum aviculare	Prostrate knotweed	non-native	annual, perennial herb	-	-	FAC
Polypogon monspeliensis	Annual beard grass	non-native (invasive)	annual grass	-	Limited	FACW
Pseudognaphalium luteoalbum	Jersey cudweed	non-native	annual herb	-	-	FAC
Pyracantha angustifolia	Firethorn	non-native (invasive)	shrub	-	Limited	-
Quercus agrifolia	Coast live oak	native	tree	-	-	-
Raphanus sativus	Wild radish	non-native (invasive)	annual, biennial herb	-	Limited	-
Rubus armeniacus	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
Rumex acetosella	Sheep sorrel	non-native (invasive)	perennial herb	-	Moderate	FACU
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Salix lasiolepis	Arroyo willow	native	tree, shrub	-	-	FACW

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	Invasive Status[2]	Wetland Indicator Status[3]
Sequoia sempervirens	Coast redwood	native	tree	-	-	-
Silybum marianum	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
Sisyrinchium bellum	Blue eyed grass	native	perennial herb	-	-	FACW
Solanum americanum	White nightshade	native	annual, perennial herb	-	-	FACU
Sonchus oleraceus	Common sow thistle	non-native	annual herb	-	-	UPL
Stipa pulchra	Purple needle grass	native	perennial grass	-	-	-
Symphyotrichum chilense	Pacific aster	native	perennial herb	-	-	FAC
Torilis arvensis	Field hedge parsley	non-native (invasive)	annual herb	-	Moderate	-
Toxicodendron diversilobum	Poison oak	native	vine, shrub	-	-	FACU
Tropaeolum majus	Garden nasturtium	non-native	annual herb, vine	-	-	UPL
Vicia sativa	Spring vetch	non-native	annual herb, vine	-	-	FACU
Vinca major	Vinca	non-native (invasive)	perennial herb	-	Moderate	-

Scientific Name	Common Name	Origin	Form	Rarity Status[1]	Invasive Status[2]	Wetland Indicator Status[3]
Washingtonia robusta	Washington fan palm	non-native (invasive)	tree	-	Moderate	FACW
Zeltnera muehlenbergii	Muehlenberg's centaury	native	annual herb	-	-	FAC

*Rarity status applies to native stands only, which are not present in the Study Area (CNPS 2019).

All species identified using the *Jepson Manual II: Vascular Plants of California* (Baldwin et al. 2012), and *Jepson eFlora* (Jepson Flora Project [eds.] 2019). Nomenclature follows *Jepson eFlora*.

[1][CNPS] California Native Plant Society. 2019. Inventory of Rare and Endangered Plants (online edition, v8-02). Sacramento, California. Online at: http://rareplants.cnps.org/; most recently accessed: August 2019.

[2][Cal-IPC] California Invasive Plant Council. 2019. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: http://www.cal-ipc.org/paf/; most recently accessed: August 2019.

[3]Lichvar, R.W.,D.L., Banks, N.C. Melvin, and W.N. Kirchner. 2016. The National Wetland Plant List: 2016 Wetland Ratings. Phytoneuron 2016-30: 1-17

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Appendix E

WETS Analysis Worksheets

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WETS historic data from climate station: Richmond, CA
2019 Observed rainfall data from climate station: Richmond, CA
Date of site visit: July 18, 2019

		Rainfall Data from WETS							
	Month	3 yrs in 10 less than	Average	3 yrs in 10 more than	Observed rainfall (inches)	Condition (dry, wet, normal)	Condition Value	Weighting factor	product of previous two columns
1st month prior	June	0	0.17	0.11	0	Normal	1	3	3
2nd month prior	May	0.06	0.54	0.38	2.12	Wet	3	2	6
3rd month prior	April	0.59	1.35	1.64	0.44	Dry	1	1	1
								SUM=	**10**

Note: If sum is:

6-9	prior period has been drier than normal
10-14	prior period has been normal
15-18	prior period has been wetter than normal

Condition Values: Dry=1
Normal=2
Wet=3

WETS historic data from climate station: Richmond, CA
2019 Observed rainfall data from climate station: Richmond, CA
Date of site visit: August 8, 2019

		Rainfall Data from WETS							
	Month	3 yrs in 10 less than	Average	3 yrs in 10 more than	Observed rainfall (inches)	Condition (dry, wet, normal)	Condition Value	Weighting factor	product of previous two columns
1st month prior	July	0	0.07	0	0	Normal	2	3	6
2nd month prior	June	0	0.17	0.11	0	Normal	2	2	4
3rd month prior	May	0.06	0.54	0.38	2.12	Wet	3	1	3
								SUM=	**13**

Note: If sum is:

6-9	prior period has been drier than normal
10-14	prior period has been normal
15-18	prior period has been wetter than normal

Condition Values: Dry=1
Normal=2
Wet=3

B.3 - Updated Site Boundary Memo

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February 5, 2020

Paul Manyisha
MLC Holdings, Inc.
2603 Camino Ramon, Suite 140
San Ramon, CA 94583

Re: Richmond Country Club Updated Site Boundary, Richmond, Contra Costa County, CA

Dear Mr. Manyisha,

Per your request, WRA, Inc. has reviewed the updated project site boundary of the Richmond Country Club development project located at 1 Markovich Lane, Richmond, California.

We understand that the project site boundary has been changed since the original publication of our *Biological Resources Assessment* and *Delineation of Waters of the U.S*. reports (WRA 2019a, 2019b). The *Boundary Overlay Aerial Exhibit* (CBG 2019) show minor increases in area on the eastern boundary of the project site, encompassing a portion of the existing golf course. The acreage has increased from approximately 26 acres to 27 acres.

Based on review of the referenced reports, boundary overlay, and site conditions, the findings of the referenced reports remain valid and applicable to the new project area. WRA reviewed everything in the current project area considering biological resources, and our findings remain unchanged. If you have any questions or concerns, please don't hesitate to contact us.

Sincerely,



Scott Yarger
Associate Biologist
yarger@wra-ca.com

References:

CBG Civil Engineers (CBG). 2019. Boundary Overlay Aerial Exhibit, Richmond Country Club, Richmond, Contra Costa County, California. December.

WRA, Inc. (WRA). 2019a. Biological Resources Assessment, MLC Holdings Richmond Country Club, Richmond, Contra Costa County, California. WRA Project Number 26210-5. September.

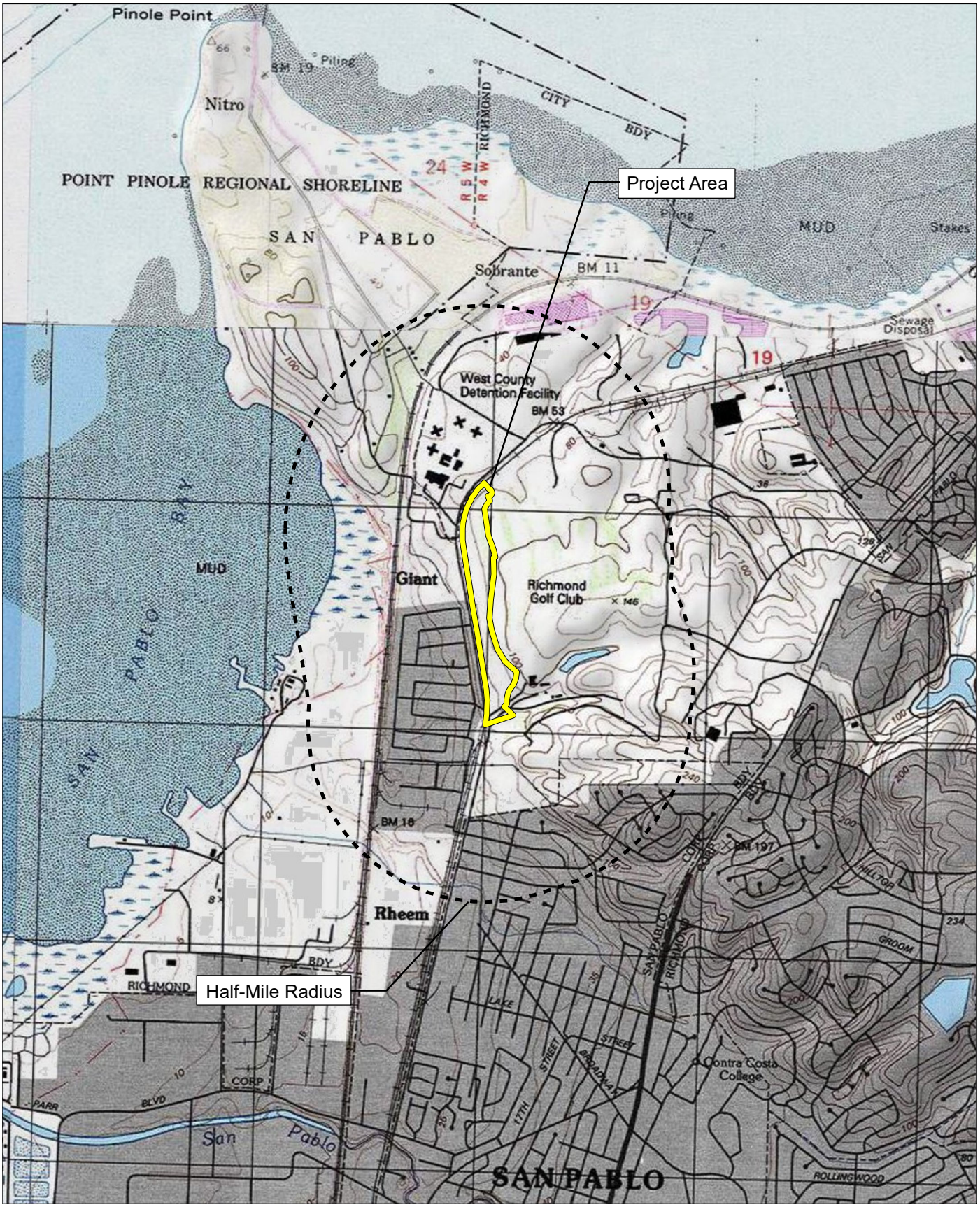
WRA, Inc. (WRA). 2019a. Delineation of Waters of the U.S., MLC Holdings Richmond Country Club, Richmond, Contra Costa County, California. WRA Project Number 26210-5. August.

Appendix C:
Cultural Resources Supporting Information

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C.1 - Non-confidential NWIC Records Search Results

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Source: USGS Richmond 7.5' Quadrangle / Land Grant: San Pablo

FIRSTCARBON SOLUTIONS™

2,000 1,000 0 2,000 Feet

Record Search Map

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-000363		1976	David A. Fredrickson	Archaeological Significance of a Proposed Picnic Area, Point Pinole Regional Shoreline.	California State College, Sonoma	
S-000871	Agency Nbr - DACWO7-77-E-1320	1977	Peter Banks, David A. Fredrickson, Lai-Ning Lee, and Susan McMurray	Cultural Resource Survey of the Wildcat and San Pablo Creeks Water Resources Project, Contra Costa County, California.	Anthropology Laboratory, Sonoma State College	07-000030, 07-000074, 07-000145, 07-000146, 07-000148, 07-000149, 07-000150, 07-000152, 07-000154, 07-000461, 07-004534
S-001031		1976	Thomas L. Jackson	Preliminary Archaeological Reconnaissance of the proposed "Rancho San Pablo Airstrip" in Richmond, California (letter report)	Archaeological Consulting & Research Services, Inc.	
S-001262		1978	Robert A. Stillinger and David A. Fredrickson	An Archaeological Survey of the Proposed North Richmond Bypass, Contra Costa County, California.	The Anthropology Laboratory, Sonoma State University	07-000154
S-001535		1979	Peter M. Banks	An Archaeological Investigation of the El Rancho Drive-In Property, San Pablo, Contra Costa County, California	California Archaeological Consultants, Inc.	
S-001768	Agency Nbr - DACWO7-78-6-0016	1979	Peter M. Banks and Robert I. Orlins	Final Report of the Testing of Cultural Resources within the Wildcat and San Pablo Creeks Flood Control and Water Resources Project, Contra Costa County, California	California Archaeological Consultants, Inc.	07-000148, 07-000149, 07-000150, 07-000461
S-002373		1980	David Chavez	Archaeological Impact Evaluation for the Tank Farm Hill General Plan Amendment for the Tank Farm Hill General Plan Amendment E.I.R., Richmond, Contra Costa County, California	David Chavez & Associates	
S-007130		1985		A Cultural Resource Investigation and Historic Property Survey Report for the North Richmond Bypass Project.	California Archaeological Consultants, Inc.	07-000154, 07-000470
S-008019		1986		An Archaeological Surface Reconaissance of the Proposed West County Justice Center Project, Contra Costa County, California.	Archeo-Tec	
S-011123		1989	David Chavez	Rancho San Pablo Mixed Use Development, Parcel A (letter report)	David Chavez and Associates	07-000145
S-011124		1989	David Chavez	Rancho San Pablo Mixed Use Development, Parcel B (letter report)	David Chavez and Associates	07-000470
S-013961		1992	Kenneth J. McIvers	An Archaeological Survey of the Richmond to Concord Pipeline Project, L.S. 80	Archaeological Study Center, California State University, Sacramento	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-015172		1993	Susan Lehmann and Beth Padon	Historical/Architectural Report for Richmond Parkway Project	LSA Associates, Inc.	07-004931, 07-004932, 07-004933, 07-004934, 07-004935, 07-004936, 07-004937, 07-004938, 07-004939, 07-004940, 07-004941, 07-004942, 07-004943, 07-004944
S-019550		1997	Steve Conklin and Deborah McLean	Cultural Resources Assessment, Proposed Change to Wickland LLC, Richmond Marine-Link Pipeline Alignment	LSA Associates, Inc.	
S-021221		1998	Colin I. Busby, Melody E. Tannam, Donna M. Garaventa, and Stuart A. Guedon	Historic Property Survey Report/ Finding of Effect, Point Pinole Business Park, Contra Costa County, File No. 18982E52	Basin Research Associates, Inc.	
S-022817	Submitter - Project Number 27101	2000	Wendy J. Nelson, Maureen Carpenter, and Julia G. Costello	Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project, Segment WS01: Sacramento to Oakland	Far Western Anthropological Research Group, Inc.; Foothill Resources, Ltd.	01-000084, 01-000120, 07-000137, 07-000138, 07-000149, 07-000184, 48-000072, 48-000081, 48-000211, 48-000441, 48-000549, 57-000198
S-023397		2000	Colin I. Busby	Cultural Resources Assessment, Parkway Commerce Center (APN # 408-06-16), Collins Avenue in the Vicinity of Stanton Avenue between the Santa Fe Railroad and Union Pacific Railroad Tracks, City of Richmond, Contra Costa County (letter report)	Basin Research Associates, Inc.	
S-024266		2001	Carolyn Losee	Survey for Sprint Spectrum's Personal Communication Services (PCS) Wireless "Pt. Pinole" Site (Ref #SF54XC006E): Positive Results (letter report)	Archaeological Resources Technology	07-000866
S-024455		2001	Carolyn Losee	Site Recording and Analysis for Sprint PCS "Pt. Pinole" Site (Ref #SF54XC006E) (letter report)	Archaeological Resources Technology	07-000866
S-024592		2001	Denise Furlong and Kim Tremaine	Archaeological Monitoring for WS01 Long Haul Fiber Optic Segment, Between Sacramento and Emeryville, California	Tremaine & Associates, LLC	01-000081, 01-000084, 01-010543, 07-000134, 07-000137, 07-000138, 07-000149, 07-002569, 07-002570, 35-000334, 43-000928, 48-000072, 48-000081, 48-000211, 48-000441, 57-000198
S-024592 a		1999		Level 3 Long Haul Fiber Optics Project, Cultural Resources Procedures	Parsons Brinckerhoff Network Services	
S-024592aa		2000	Don Bignell	West Side of ILA in Suisun City, MP48 WS01 (letter report)	Tremaine & Associates	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-024592b		1999	Jim Railey and Howard Higgins	Level 3 Long Haul Fiber Optics Project, Cultural Resources Management Plan for California Routes, Research Design	TRC Mariah Associates, Inc.	
S-024592bb		2000	Kim Tremaine	Southern Carquinez Straits Alternate Route Survey, WS01 (letter report)	Tremaine & Associates	
S-024592c		2000	Kim Tremaine	Results of Utility Locating & Site Boundary Delineation for CA-CCO-258, Rodeo, California	Tremaine & Associates	
S-024592cc		2000	Kim Tremaine	Northern Carquinez Straits Alternate Route, WS01 (letter report)	Tremaine & Associates	
S-024592d		2000	Kim Tremaine	Results of Site Monitoring During Utility Locating for CA-CCO-270, San Pablo, California	Tremaine & Associates	
S-024592dd		2000	Don Bignell	Maritime Academy Right of Way Extension, WS01 (letter report)	Tremaine & Associates	
S-024592e		2000	Kim Tremaine	Results of Site Boundary Testing at CA-ALA-304, North and South of Cerrito Creek, in Albany, California	Tremaine & Associates	
S-024592f		2000	Kim Tremaine	Site Damage Assessment for CA-ALA-304	Tremaine & Associates	
S-024592g		2000	Kim J. Tremaine	Results of Site Monitoring During Utility Locating for CA-ALA-307, in West Berkeley, California	Tremaine & Associates	
S-024592h		1999		Results of Minimal Testing at the Buried Shell Midden Location, MP20, in Pinole, California	Tremaine & Associates	
S-024592I		1999	Kim J. Tremaine	Results of Site Boundary Testing of the Buried Shell Midden at MP20 in Pinole, California	Tremaine & Associates	
S-024592j		2000	Kim Tremaine	Results of Site Monitoring During Utility Locating for Unanticipated Discovery MP20, Pinole, California	Tremaine & Associates	
S-024592k		2000	Kim Tremaine	Incident Report on Frak-Outs at MP8 & MP20	Tremaine & Associates	
S-024592l		2000	Kim J. Tremaine	Results of Site Boundary Testing for the School House Creek Site, in West Berkeley, California	Tremaine & Associates	
S-024592m		2000	Kim J. Tremaine	Results of Testing for the Presence of Shell Midden Between Virginia and Delaware Streets, West Berkeley, California	Tremaine & Associates	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-024592n		1999	Kim Tremaine	Hayward Survey, MP23.79-23.88, WS07 (letter report)	Tremaine & Associates	
S-024592o		1999	Kim Tremaine	Jameson Canyon Survey, MP 57, WS01 (letter report)	Tremaine & Associates	
S-024592p		2000	Kim Tremaine	Richmond Parkway Survey, MP15, WS01 (letter report)	Tremaine & Associates	
S-024592q		2000	Kim Tremaine	Holly Oak Ranch Survey, MP59, WS01 (letter report)	Tremaine & Associates	
S-024592r		2000	Kim Tremaine	Cordelia Survey, WS01 (letter report)	Tremaine & Associates	
S-024592s		2000	Kim Tremaine	Crockett Survey, ~MP25, WS01 (letter report)	Tremaine & Associates	
S-024592t		2000	Kim Tremaine	San Jose Survey, MP 43, WS07 Route Extension (letter report)	Tremaine & Associates	
S-024592u		2000	Kim Tremaine	Fremont Survey, MP 28, WS07 (letter report)	Tremaine & Associates	
S-024592v		2000	Kim Tremaine	Jameson Canyon Survey, MP58, WS01 (letter report)	Tremaine & Associates	
S-024592w		2000	Kim Tremaine	Maritime Academy Survey, WS01 (letter report)	Tremaine & Associates	
S-024592x		2000	Kim Tremaine	Maritime Academy TEWS, WS01 (letter report)	Tremaine & Associates	
S-024592y		2000	Don Bignell	Results of Broadway Street and South River Road Survey (letter report)	Tremaine & Associates	
S-024592z		2000	Don Bignell	Carquinez Bridge South, TEWS Survey, MP25, WS01 (letter report)	Tremaine & Associates	
S-024937	Voided - S-24954	2000	Robert Harmon	Cultural Resources Assessment, Former Breuner Property, Proposed Bay View Business Park and Access Alignments, City of Richmond, Contra Costa County, California	Basin Research Associates, Inc.	07-000145
S-024937a		2000	Ward Hill and Majorie Dobkin	Historic Evaluation Report, Former Breuner Property Project, Bay Area Wetlands, LLC, 4104 Goodrick Avenue, City of Richmond, Contra Costa County, California	Basin Research Associates	
S-028019		2002	Colin I. Busby	Archaeological Resources Assessment - Richmond Property, Pt. Pinole Vicinity, City of Richmond, Contra Costa County (letter report)	Basin Research Associates, Inc.	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-033061	Submitter - SWCA Cultural Resources Report Database No. 06-507; Submitter - SWCA Report No. 10715-	2006	Nancy Sikes, Cindy Arrington, Bryon Bass, Chris Corey, Kevin Hunt, Steve O'Neil, Catherine Pruett, Tony Sawyer, Michael Tuma, Leslie Wagner, and Alex Wesson	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	SWCA Environmental Consultants	01-000027, 01-000040, 01-000087, 01-000088, 01-000089, 01-000090, 07-000138, 27-000802, 27-001191, 27-001207, 28-000467, 43-000106, 43-000141, 43-000449, 43-000573, 43-000575, 43-000754, 43-000928, 43-001071, 48-000208, 48-000211, 48-000214, 48-000441, 48-000549, 49-001583, 57-000194, 57-000198, 57-000297, 57-000301, 57-000307
S-033061a		2006		Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	SWCA Environmental Consultants	
S-033061b		2007	Nancy E. Sikes	Final Report of Monitoring and Findings for the Qwest Network Construction Project (letter report)	SWCA Environmental Consultants	
S-034157		2007	Miley Paul Holman	Cultural Resources Study of the Wanlass Park Project, San Pablo, Contra Costa County, California (letter report)	Holman & Associates	
S-036936		2009	Bai "Tom" Tang	Historic Property Survey Report, proposed construction of approximately 1.25 miles of connector railway between the existing Burlington Northern Santa Fe Railway (BNSF) and Union Pacific Railway (UPRR) lines in the City of Richmond, Contra Costa County, California	CRM TECH	
S-036936a		2009	Bai "Tom" Tang, Michael Hogan, and Terri Jacquemain	Archaeological Survey Report, Rheem BNSF and UPRR Connection Track Project, BNSF MP 1185.9 to UPRR MP 14.2, City of Richmond, Contra Costa County, California, Caltrans District 10	CRM TECH	
S-040596		2012	Bai "Tom" Tang	Historic Property Survey Report, proposed construction of an approximately 1.25-mile at-grade connection track between the Burlington Northern Santa Fe Railway's (BNSF) Stockton Subdivision and the Union Pacific Railroad's (UPRR) Martinez Subdivision, BNSF MP 1185.9 to UPRR MP 14.2, Contra Costa County, California	CRM TECH	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-040596a		2012	Michael Hogan Michael Hogan	Archaeological Survey Report, Richmond Rail Connector Project, BNSF MP 1185.9 to UPRR MP 14.2, City of Richmond and North Richmond Area, Contra Costa County, California, Caltrans District 4	CRM TECH	
S-044787	OHP PRN - NPS 2013 0815 001 CCO; OHP PRN - NPS_2014_0205_001 ; Voided - S-43873	2013	Jefferey Boland Fentress	Archaeological Reconnaissance for the Proposed Point Pinole Fishing Pier Restroom Replacement and the Point Pinole Giant Recreation/Staging Unit Underground Sewer/Utility Installation, at Point Pinole Regional Shoreline (East Bay Regional Park District), Contra Costa County, California	East Bay Regional Park District	
S-044787a		2015	Matthew R. Clark	Subsurface Archaeological Reconnaissance for the East Bay Regional Parks District Point Pinole Regional Shoreline Restroom Replacement and Staging Area Underground Utility Installation Projects, Richmond, Contra Costa County, California	Holman & Associates	
S-044787b		2014	Matthew R. Clark and Christopher Powell	Subsurface Archaeological Reconnaissance for the East Bay Regional Parks District Point Pinole Regional Shoreline Restroom Replacement and Staging Area Underground Utility Installation Projects, Richmond, Contra Costa County, California	Holman & Associates Archaeological Consultants	
S-045693		2011	Cassidy Baker, Erica Schultz, and Barb Siskin	Cultural Resources Inventory and Evaluation for the Breuner Marsh Restoration and Public Access Project, Richmond, Contra Costa County, Californnia	Garcia and Associates	07-000145, 07-002606, 07-004594, 07-004595, 07-004596, 07-004597
S-046912	Submitter - CCL00879; Submitter - North Richmond 2	2014	Dana E. Supernowicz	Collocation ("CO") Submission Packet FCC Form 621, CCL00879 - North Richmond 2 - Collins Ave, 3467 Collins Avenue, Richmond, CA 94806	Cardno ATC	07-004630
S-046912a		2009	Dana E. Supernowicz	Cultural Resources Study of the North Richmond 2 Project, AT&T Wireless Site No. 0879, 3451-3467 Collins Avenue, Richmond, Contra Costa County, California 94806	Historic Resource Associates	
S-046912b		2009	Dana Supernowicz	Collocation ("CO") Submission Packet FCC Form 621, North Richmond 2 - Collins Ave, 3451-3467 Collins Avenue, Richmond, CA 94806	Historic Resource Associates	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-046912c		2014	Carol Roland-Nawi	RE: CCL00879-North Richmond 2-Collins Ave. 3467 Collins Avenue, Richmond, Contra Costa County, CA	Office of Historic Preservation	
S-047459	Submitter - TS60215143	2016	Carolyn Losee	Cultural Resources Investigation for Verizon Wireless "North Richmond" 2995 Atlas Road, Richmond, Contra Costa County, California 94806 (letter report)	Archaeological Resources Technology	
S-047459a		2016	Laura L. Mancuso	FCC Form 620 New Tower Submission Packet, North Richmond 278493, 2995 Atlas Road, Richmond, California 94806	CBRE, Inc.	
S-048962	Submitter - D150393	2017	Heid Koenig	Giant Marsh Living Shorelines Project, Point Pinole Regional Seashore, Contra Costa County, Cultural Resources Survey Report	Environmental Science Associates	07-004594

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-07-000866		Resource Name - American Standard; Other - Giant Trade Center	Building	Historic	HP08	2001 ([none], Archaeological Resources Technology)	S-024266, S-024455
P-07-002606		Resource Name - Breuner Buildings	Building	Historic	AH04; HP02; HP08; HP33	2000 (Dobkin, Hill, [none]); 2011 (Erica Schultz, Cassidy DeBaker, GANDA)	S-024954, S-045693
P-07-004594		Resource Name - GANDA-570-01 (Pipeline Footings)	Structure	Historic	AH06	2010 (Erica Schultz, GANDA); 2016 (Heidi Koenig, Environmental Science Associates)	S-045693, S-048962
P-07-004595		Resource Name - GANDA-570-02 (Rheem Creek channel and bridge)	Structure	Historic	HP19; HP20	2010 (Erica Schultz, GANDA)	S-045693
P-07-004597		Resource Name - GANDA-570-04 (fence line)	Object	Historic	AH11	2010 (Cassidy DeBaker, GANDA)	S-045693
P-07-004630		Resource Name - Wine Warehouse North	Building	Historic	HP06	2009 (Dana E. Supernowicz, Historic Resource Associates)	S-046912

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C.2 - NAHC and Tribal Correspondence

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Local Government Tribal Consultation List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Type of List Requested

☑ **CEQA Tribal Consultation List (AB 52)** – ***Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2***

☐ **General Plan (SB 18)** - ***Per Government Code § 65352.3.***

Local Action Type:

___ General Plan ___ General Plan Element ___ General Plan Amendment

___ Specific Plan ___ Specific Plan Amendment ___ Pre-planning Outreach Activity

Required Information

Project Title: Richmond Country Club Project

Local Government/Lead Agency: City of Richmond

Contact Person: Dr. Dana DePietro

Street Address: 1350 Treat Boulevard, Ste. 380

City: City of Richmond **Zip:** 94804

Phone: 530.219.1432 **Fax:**

Email: ddepietro@fcs-intl.com; spignotti@fcs-intl.com

Specific Area Subject to Proposed Action

County: Alameda **City/Community:** Richmond

Project Description:

The project applicant is proposing a General Plan Amendment, Zone Change, Tentative Tract Map (TTM), and a Planned Development permit to allow the development of 102 single-family homes on a 25.91-acre project site on the western boundary of the Richmond Country Club. The development of the project will require re-configuration of a portion of the golf course, and the removal of mature eucalyptus trees.

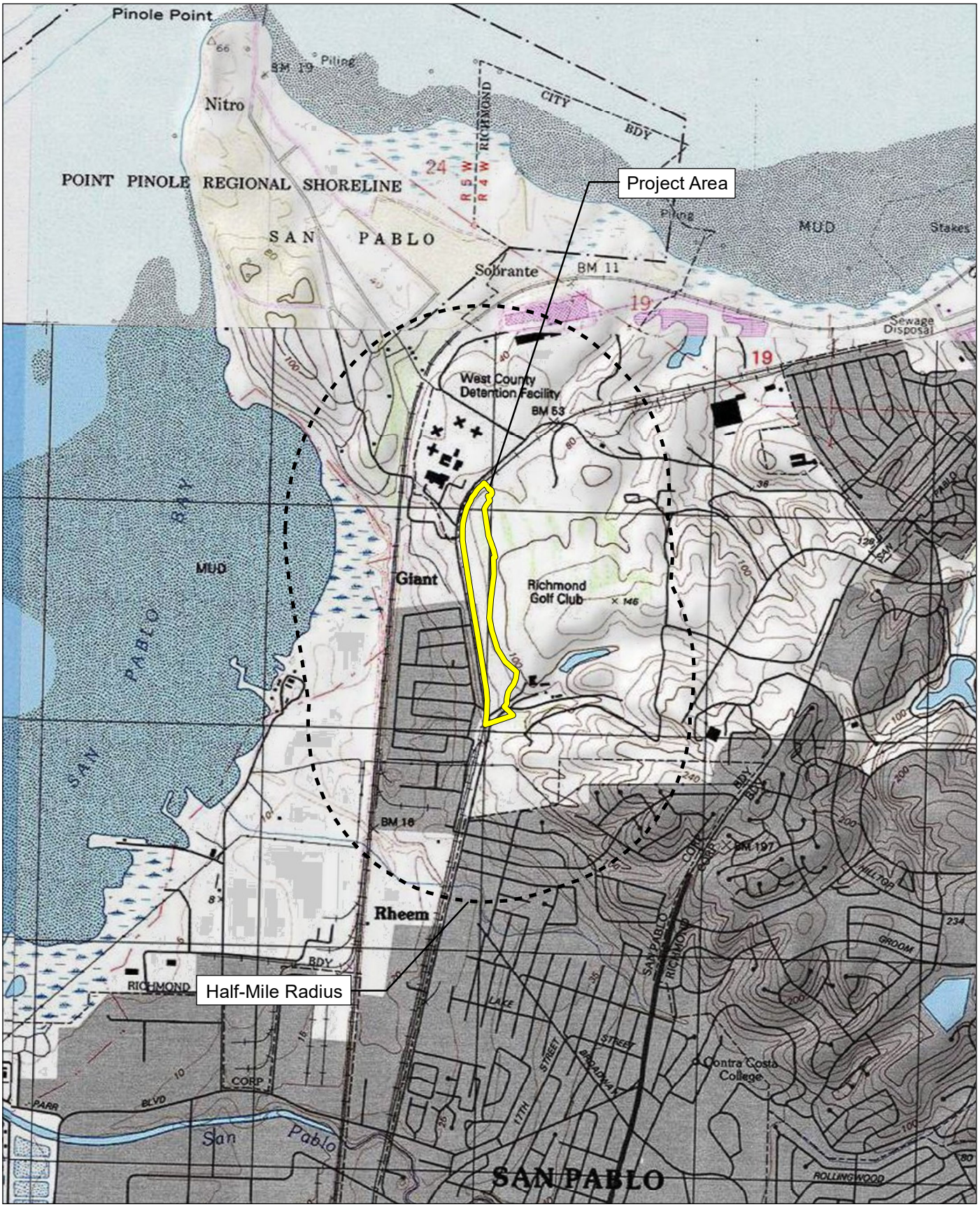
Additional Request

☑ **Sacred Lands File Search** - ***Required Information:***

USGS Quadrangle Name(s): Richmond, Land Grant: San Pablo

Township: **Range:**

Section(s):



Source: USGS Richmond 7.5' Quadrangle / Land Grant: San Pablo

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Record Search Map

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691 Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov

November 13, 2019

Dana DePietro
FirstCarbon Solutions

VIA Email to: ddepietro@fcs-intl.com; spignotti@fcs-intl.com

RE: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Richmond Country Club Project, Alameda County.

Dear Ms. DePietro:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

> Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;

   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;

   - Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and

   - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.
4. Any ethnographic studies conducted for any area including all or part of the APE; and
5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez

Staff Services Analyst

Attatchment

Native American Heritage Commission
Tribal Consultation List
November 13, 2019

Costanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
244 E. 1st Street — Ohlone/Costanoan
Pomona , CA 91766
rumsen@aol.com
(909) 524-8041 Cell

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28 — Ohlone/Costanoan
Hollister , CA 95024
ams@indiancanyon.org
(831) 637-4238

Amah MutsunTribal Band of Mission San Juan Bautista
Irene Zwierlein, Chairperson
789 Canada Road — Ohlone/Costanoan
Woodside , CA 94062
amahmutsuntribal@gmail.com
(650) 851-7489 Cell
(650) 851-7747 Office

The Confederated Villages of Lisjan
Corrina Gould, Chairperson
10926 Edes Avenue — Ohlone/Costanoan
Oakland , CA 94603
corrinagould@gmail.com
(510) 575-8408

North Valley Yokuts Tribe
Katherine Erolinda Perez, Chairperson
P.O. Box 717 — Ohlone/Costanoan
Linden , CA 95236 — Northern Valley Yokuts
canutes@verizon.net — Bay Miwok
(209) 887-3415

Muwekma Ohlone Indian Tribe of the SF Bay Area
Charlene Nijmeh, Chairperson
20885 Redwood Road, Suite 2 — Ohlone / Costanoan
Castro Valley , CA 94546
cnihmeh@muwekma.org
(408) 464-2892

The Ohlone Indian Tribe
Andrew Galvan
P.O. Box 3388 — Ohlone
Fremont , CA 94539 — Bay Miwok
chochenyo@AOL.com — Plains Miwok
(510) 882-0527 Cell — Patwin

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Richmond Country Club Project, Alameda County.

January 7, 2020

Attn: Rosemary Cambra, Chairperson
Muwekma Ohlone Indian Tribe of the SF Bay Area
P.O. Box 360791
Milpitas, CA 95036

Re: Assembly Bill 52 Consultation—Richmond Country Club Residential Project

Dear Chairperson Cambra:

The City of Richmond has received an application for the Richmond Country Club Residential Project (proposed project), located along Giant Highway at the existing Richmond Country Club, accessible via Markovich Lane. The proposed project is mapped on the *Richmond, California* United States Geological Survey (USGS) Topographical Quadrangle, Land Grant: San Pablo Mount Diablo Base and Meridian (approximate Latitude 37° North 59' 17.80"; Longitude 122° West 21' 8.31"), a copy of which has been attached for your review (attachment). The proposed project is subject to the California Environmental Quality Act (CEQA), with the City of Richmond acting as Lead Agency. In accordance with Assembly Bill 52 (AB 52), as discussed below, the City of Richmond would like to invite Native American tribes and individuals to participate in the local planning process.

The proposed project consists of the development of 102 single-family homes on 27.05 acres. Proposed project development would require the re-configuration of a portion of the golf course and removal of mature eucalyptus trees. A records search of the California Historical Resources Information System (CHRIS) indicated that six historic-era resources have been previously identified within 0.5-mile of the proposed project site. No prehistoric sites have been recorded within the search radius.

The City of Richmond would like to provide you with an opportunity to communicate concerns you might have regarding historical resources or Tribal Cultural Resources (TCRs) important to your community that could be impacted by the proposed project. The City of Richmond requests your participation in the identification and protection of historical resources and TCRs that could be impacted by the proposed project, with the understanding that you or other members of your community might possess specialized knowledge of the area.

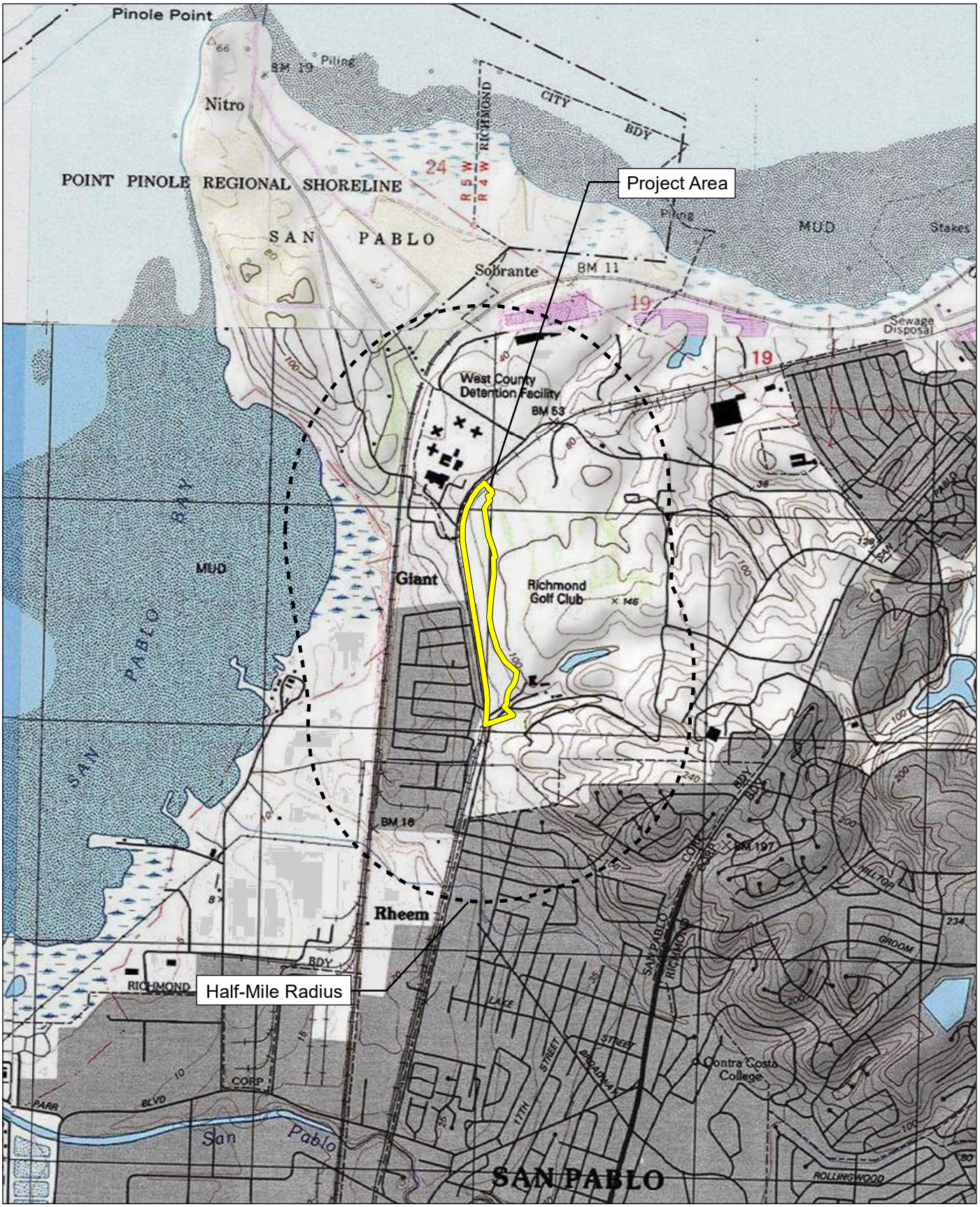
Please consider this letter and preliminary project information as formal notification of a proposed project as required under CEQA, specifically Public Resources Code Section 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52). Please respond in writing within 30 days, pursuant to Public Resources Code Section 21080.3.1(d) if you wish to request consultation regarding possible significant effects that the proposed project may have on TCRs. Please provide a designated lead contact person if you have not already provided such information.

If you or any Tribal members have any questions or concerns regarding the proposed project, please contact me via phone at 510.620.6858 or via email at lina_velasco@ci.richmond.ca.us.

Sincerely,

Lina Velasco,
Planning and Building Services Director

Attachment: Local Vicinity Map



Source: USGS Richmond 7.5' Quadrangle / Land Grant: San Pablo

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Record Search Map

January 7, 2020

Attn: Andrew Galvan
The Ohlone Indian Tribe
P.O. Box 3388
Fremont, CA 94539

Re: Assembly Bill 52 Consultation—Richmond Country Club Residential Project

Dear Andrew Galvan:

The City of Richmond has received an application for the Richmond Country Club Residential Project (proposed project), located along Giant Highway at the existing Richmond Country Club, accessible via Markovich Lane. The proposed project is mapped on the *Richmond, California* United States Geological Survey (USGS) Topographical Quadrangle, Land Grant: San Pablo Mount Diablo Base and Meridian (approximate Latitude 37° North 59' 17.80"; Longitude 122° West 21' 8.31"), a copy of which has been attached for your review (attachment). The proposed project is subject to the California Environmental Quality Act (CEQA), with the City of Richmond acting as Lead Agency. In accordance with Assembly Bill 52 (AB 52), as discussed below, the City of Richmond would like to invite Native American tribes and individuals to participate in the local planning process.

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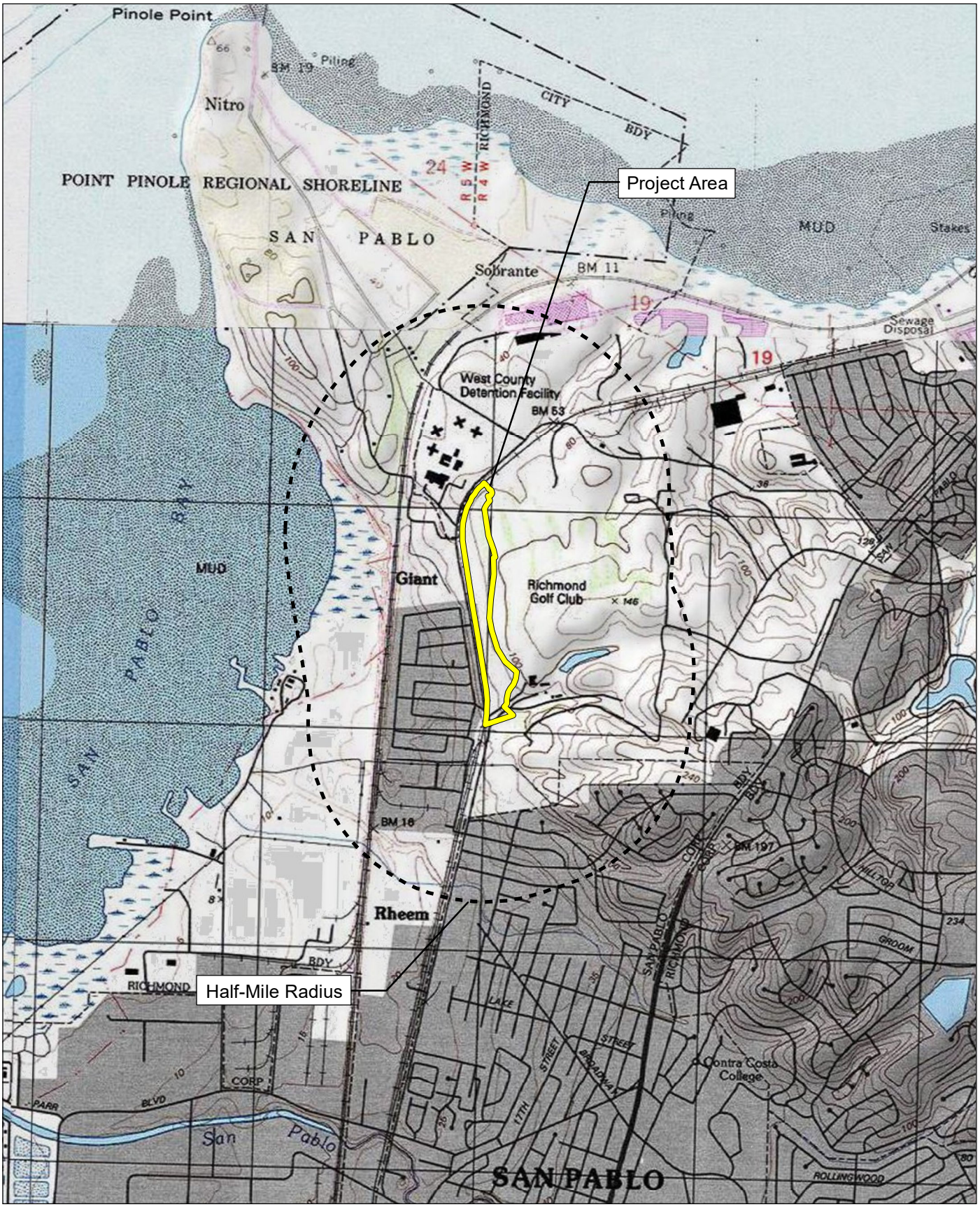
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Planning and Building Services Director

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Record Search Map

January 7, 2020

Attn: Raymond Hitchcock, Chairperson
Wilton Rancheria
9728 Kent Street
Elk Grove, CA 95624

Re: Assembly Bill 52 Consultation—Richmond Country Club Residential Project

Dear Chairperson Hitchcock:

The City of Richmond has received an application for the Richmond Country Club Residential Project (proposed project), located along Giant Highway at the existing Richmond Country Club, accessible via Markovich Lane. The proposed project is mapped on the *Richmond, California* United States Geological Survey (USGS) Topographical Quadrangle, Land Grant: San Pablo Mount Diablo Base and Meridian (approximate Latitude 37° North 59' 17.80"; Longitude 122° West 21' 8.31"), a copy of which has been attached for your review (attachment). The proposed project is subject to the California Environmental Quality Act (CEQA), with the City of Richmond acting as Lead Agency. In accordance with Assembly Bill 52 (AB 52), as discussed below, the City of Richmond would like to invite Native American tribes and individuals to participate in the local planning process.

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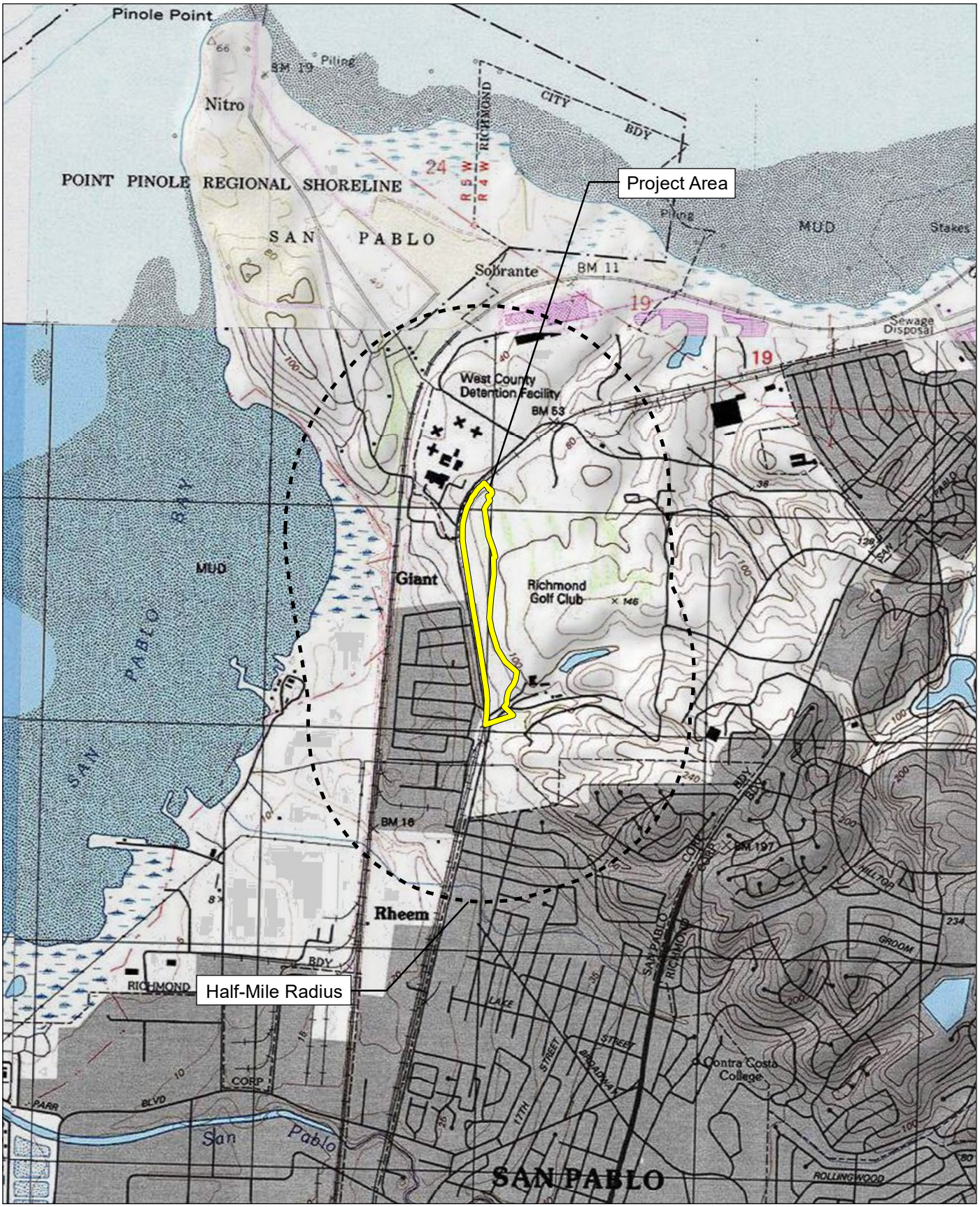
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Lina Velasco,
Planning and Building Services Director

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FIRSTCARBON SOLUTIONS™

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Record Search Map

January 7, 2020

Attn: Katherine Erolinda Perez, Chairperson
North Valley Yokuts Tribe
P.O. Box 717
Linden, CA 95236

Re: Assembly Bill 52 Consultation—Richmond Country Club Residential Project

Dear Chairperson Perez:

The City of Richmond has received an application for the Richmond Country Club Residential Project (proposed project), located along Giant Highway at the existing Richmond Country Club, accessible via Markovich Lane. The proposed project is mapped on the *Richmond, California* United States Geological Survey (USGS) Topographical Quadrangle, Land Grant: San Pablo Mount Diablo Base and Meridian (approximate Latitude 37° North 59' 17.80"; Longitude 122° West 21' 8.31"), a copy of which has been attached for your review (attachment). The proposed project is subject to the California Environmental Quality Act (CEQA), with the City of Richmond acting as Lead Agency. In accordance with Assembly Bill 52 (AB 52), as discussed below, the City of Richmond would like to invite Native American tribes and individuals to participate in the local planning process.

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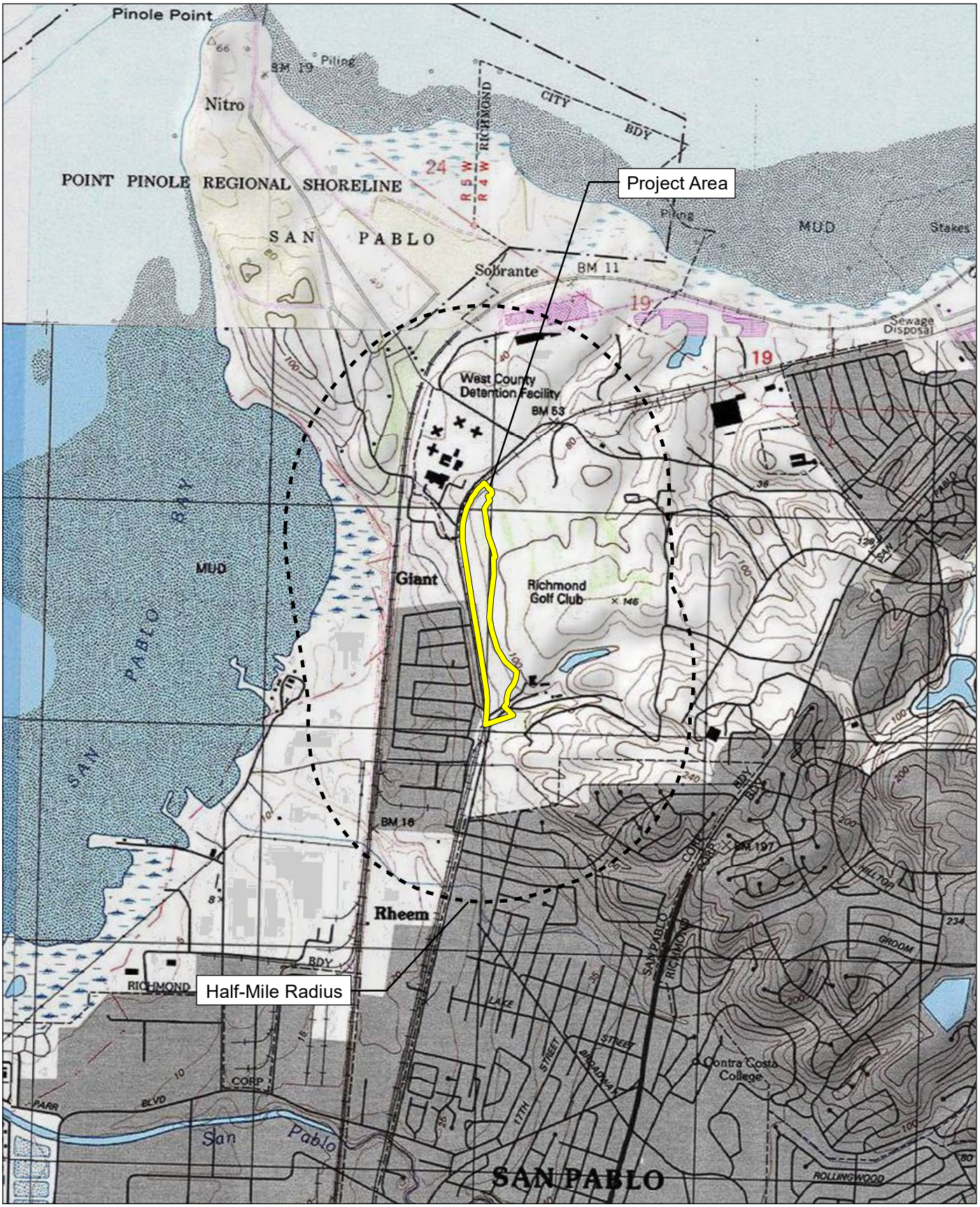
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Planning and Building Services Director

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FIRSTCARBON SOLUTIONS™

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Record Search Map

January 7, 2020

Attn: Anne Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costonoan
P.O. Box 28
Hollister, CA 95024

Re: Assembly Bill 52 Consultation—Richmond Country Club Residential Project

Dear Chairperson Sayers:

The City of Richmond has received an application for the Richmond Country Club Residential Project (proposed project), located along Giant Highway at the existing Richmond Country Club, accessible via Markovich Lane. The proposed project is mapped on the *Richmond*, *California* United States Geological Survey (USGS) Topographical Quadrangle, Land Grant: San Pablo Mount Diablo Base and Meridian (approximate Latitude 37° North 59' 17.80"; Longitude 122° West 21' 8.31"), a copy of which has been attached for your review (attachment). The proposed project is subject to the California Environmental Quality Act (CEQA), with the City of Richmond acting as Lead Agency. In accordance with Assembly Bill 52 (AB 52), as discussed below, the City of Richmond would like to invite Native American tribes and individuals to participate in the local planning process.

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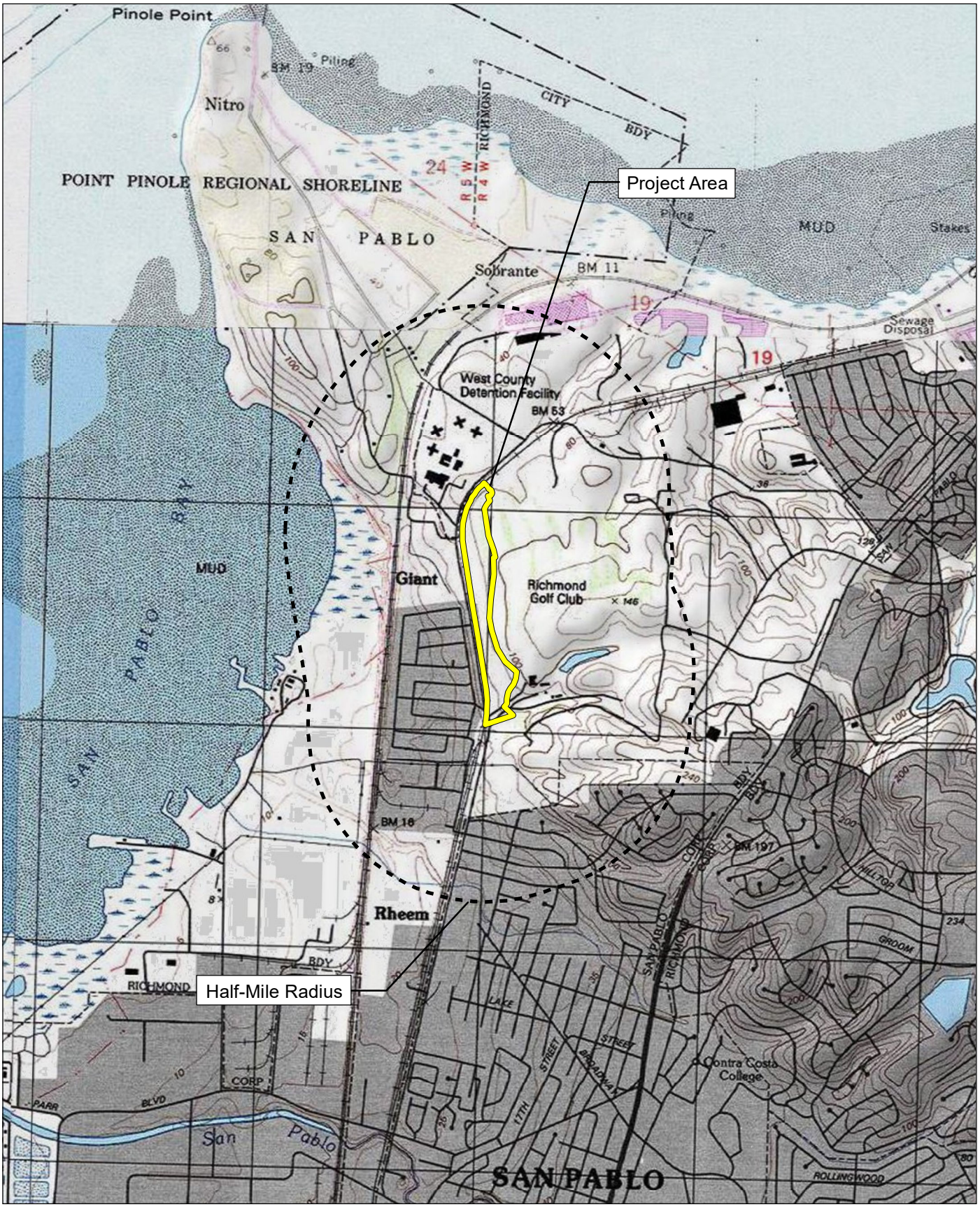
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Sincerely,

Lina Velasco,
Planning and Building Services Director

Attachment: Local Vicinity Map



Source: USGS Richmond 7.5' Quadrangle / Land Grant: San Pablo

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Record Search Map

January 7, 2020

Attn: Irenne Zwierlein, Chairperson
Amah Mutsun Tribal Band of Mission San Juan Bautista
789 Canada Road
Woodside, CA 94062

Re: Assembly Bill 52 Consultation—Richmond Country Club Residential Project

Dear Chairperson Zwierlein:

The City of Richmond has received an application for the Richmond Country Club Residential Project (proposed project), located along Giant Highway at the existing Richmond Country Club, accessible via Markovich Lane. The proposed project is mapped on the *Richmond*, *California* United States Geological Survey (USGS) Topographical Quadrangle, Land Grant: San Pablo Mount Diablo Base and Meridian (approximate Latitude 37° North 59' 17.80"; Longitude 122° West 21' 8.31"), a copy of which has been attached for your review (attachment). The proposed project is subject to the California Environmental Quality Act (CEQA), with the City of Richmond acting as Lead Agency. In accordance with Assembly Bill 52 (AB 52), as discussed below, the City of Richmond would like to invite Native American tribes and individuals to participate in the local planning process.

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Sincerely,

Lina Velasco,
Planning and Building Services Director

Attachment: Local Vicinity Map

C.3 - Pedestrian Survey Photographs

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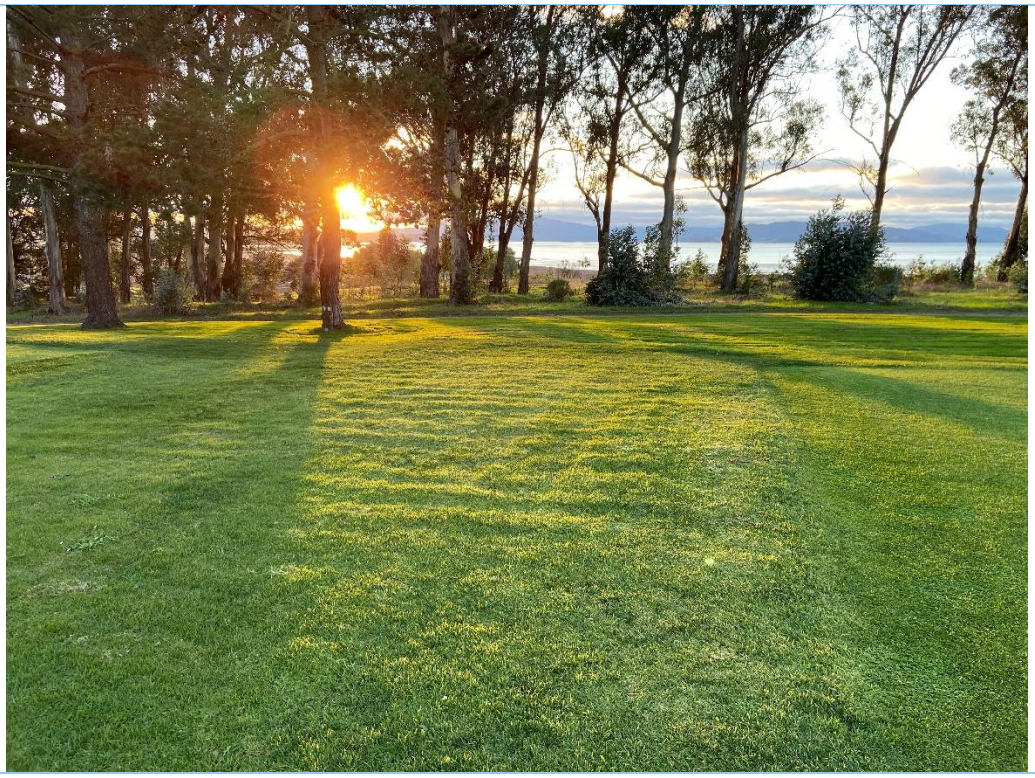
Photograph 1: Overview of the proposed development area; facing north.



Photograph 2: Overview of the proposed development area; facing east.



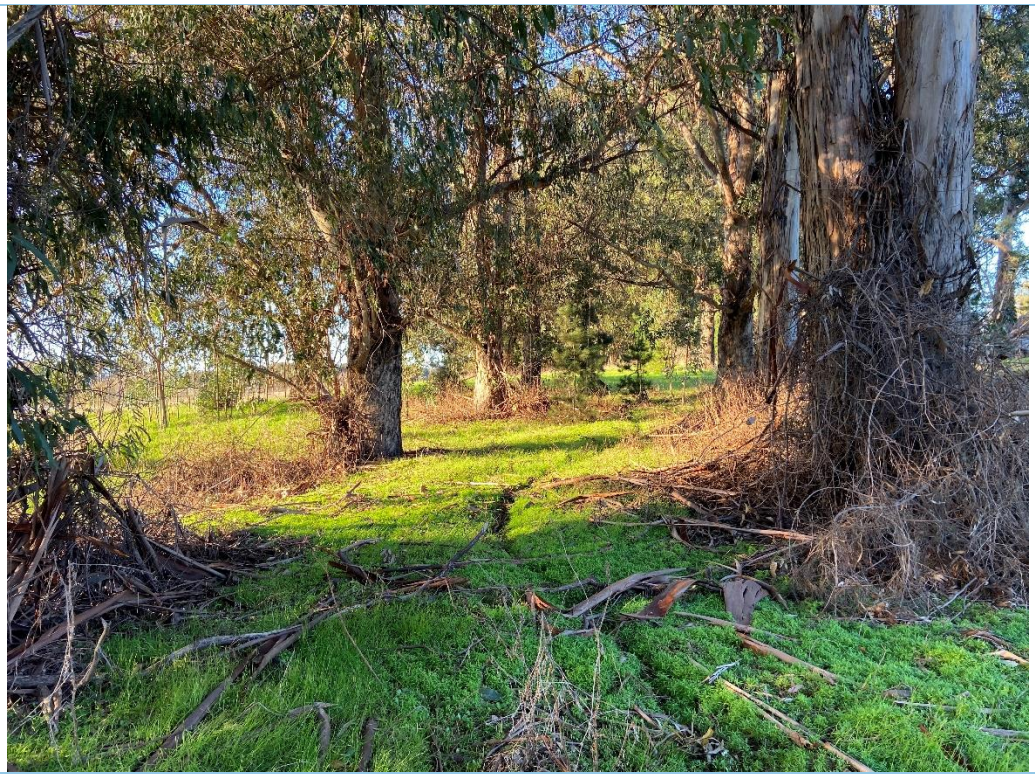
Photograph 3: Overview of the proposed development area; facing south.



Photograph 4: Overview of the proposed development area; facing west



Photograph 5: Detail of western boundary of the project area and train tracks; facing north.



Photograph 6: Detail of eucalyptus trees running along the western half of the project area; facing north.



Photograph 7: Representative soil visibility and composition in the western half of the project area.



Photograph 8: Representative soil visibility and composition in the western half of the project area.

Appendix D:
Energy Supporting Information

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Richmond Country Club Residential Development Project Energy Use Summary

Summary of Energy Use During Phase 1 Construction		(Annually)
Construction vehicle fuel	52,285	gallons (gasoline, diesel)
Construction equipment fuel	48,683	gallons (diesel)
Construction office electricity	8,986	kilowatt hours
Summary of Energy Use During Phase 2 Construction		(Annually)
Construction vehicle fuel	2,226	gallons (gasoline, diesel)
Construction equipment fuel	59,476	gallons (diesel)
Construction office electricity	8,986	kilowatt hours
Summary of Energy Use During Proposed Operations		(Annually)
Operation vehicle fuel	95,669	gallons (gasoline, diesel)
~~Operation natural gas~~	~~4,317,020~~	~~kilo-British Thermal Units~~
Operation electricity	366,655	kilowatt hours
Summary of Energy Use During Existing Operations		(Annually)
Operation natural gas	102,449	kilo-British Thermal Units
Operation electricity	66,144	kilowatt hours
Increase in Energy Use from Existing Operations to Proposed Operations (Annually)		
Additional operation vehicle fuel	95,669	gallons (gasoline, diesel)
~~Additional operation natural gas~~	~~4,214,571~~	~~kilo-British Thermal Units~~
Additional operation electricity	300,511	kilowatt hours

Natural gas consumption not included in AQ, GHG, or Energy analyses due to compliance with the City of Richmond's Energy Reach Code.

Richmond Country Club Residential Development - Phase 1

Last Updated: 06/16/2020

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors [1]:			
HP: 0 to 100	0.0588	HP: Greater than 100	0.0529
Values above are expressed in gallons per horsepower-hour/BSFC.			

CONSTRUCTION EQUIPMENT [2]

Construction Equipment	Quantity	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons) [A]
Concrete/Industrial Saws	1	8	81	0.73	Demolition	555.96
Excavators	3	8	158	0.38	Demolition	1,523.35
Rubber Tired Dozers	2	8	247	0.40	Demolition	1,671.19
Rubber Tired Dozers	3	8	247	0.40	Site Preparation	1,253.39
Tractors/Loaders/Backhoes	4	8	97	0.37	Site Preparation	674.90
Excavators	2	8	158	0.38	Grading	1,523.35
Graders	1	8	187	0.41	Grading	972.65
Rubber Tired Dozers	1	8	247	0.40	Grading	1,253.39
Scrapers	2	8	367	0.48	Grading	4,469.59
Tractors/Loaders/Backhoes	2	8	97	0.37	Grading	1,012.34
Cranes	1	7	231	0.29	Building Construction	5,577.11
Forklifts	3	8	89	0.20	Building Construction	5,648.42
Generator Sets	1	8	84	0.74	Building Construction	6,575.01
Tractors/Loaders/Backhoes	3	7	97	0.37	Building Construction	9,965.25
Welders	1	8	46	0.45	Building Construction	2,189.55
Pavers	2	8	130	0.42	Paving	923.55
Paving Equipment	2	8	132	0.36	Paving	803.80
Rollers	2	8	80	0.38	Paving	571.66
Air Compressors	1	6	78	0.48	Architectural Coating	1,518.09

Construction Phase	Days of Operation
Demolition	20
Site Preparation	10
Grading	30
Building Construction	225
Architectural Coating	115
Paving	20
Total Days	420

Total Diesel Fuel Used	**48,682.56 (Gallons)**

WORKER TRIPS [2]

Constuction Phase	MPG [3]	Trips	Trip Length (miles)	Fuel Used (gallons) [B]
Demolition	28.1	15	10.8	115.26
Site Preparation	28.1	18	10.8	69.15
Grading	28.1	20	10.8	230.51
Building Construction	28.1	126	10.8	10,891.65
Paving	28.1	15	10.8	115.26
Architectural Coating	28.1	25	10.8	1,104.53

Total Gasoline Fuel Used	**12,526.36**

HAULING AND VENDOR TRIPS [2]				
Trip Class	MPG [3]	Trips	Trip Length (miles)	Fuel Used (gallons) [C]
HAULING TRIPS				
Demolition	5.2	26	20.0	100.82
Site Preparation	5.2	3496	20.0	13,556.76
Grading	5.2	5000	20.0	19,388.95
Building Construction	5.2	0	20.0	-
Architectural Coating	5.2	0	20.0	-
Paving	5.2	0	20.0	-
			Total Diesel Fuel Used	**33,046.53**
VENDOR TRIPS				
Demolition	11.7	0	7.3	-
Site Preparation	11.7	0	7.3	-
Grading	11.7	0	7.3	-
Building Construction	11.7	48	7.3	6,711.66
Architectural Coating	11.7	0	7.3	-
Paving	11.7	0	7.3	-
			Total Diesel Fuel Used	**6,711.66**

Total Gasoline Consumption (gallons)	**12,526.36**
Total Diesel Consumption (gallons)	**88,440.75**

Notes:

[A] *Construction Equipment Fuel Used (Formula):*
Quantity * Hours per Day * Horsepower * Load Factor * Days of Operation * BSFC Factor = Total Diesel Fuel Used

[B] *Worker Trips Fuel Used (Formula):*
(Trips * Trip Length * Days) / MPG = Total Gasoline Fuel Used

[C] *Vendor & Hauling Trips Fuel Used (Formula):*
(Trips * Trip Length) / MPG = Total Diesel Fuel Used

Sources:

[1] United States Environmental Protection Agency. 2018. Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES2014b. July 2018. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100UXEN.pdf.

[2] CalEEMod (Version 2016.3.2) Run for Richmond Country Club - Phase 1 Construction, dated June 15, 2020.

[3] California Air Resources Board. 2020. EMFAC2017 [Interactive Database]. Website: https://arb.ca.gov/emfac/2017/. Accessed June 7, 2020.

Richmond Country Club Residential Development - Phase 2

Last Updated: 06/16/2020

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors [1]:			
HP: 0 to 100	0.0588	HP: Greater than 100	0.0529
Values above are expressed in gallons per horsepower-hour/BSFC.			

CONSTRUCTION EQUIPMENT [2]

Construction Equipment	Quantity	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons) [A]
Cranes	1	7	231	0.29	Building Construction	5,205.31
Forklifts	3	8	89	0.20	Building Construction	5,271.86
Generator Sets	1	8	84	0.74	Building Construction	6,136.68
Tractors/Loaders/Backhoes	3	7	97	0.37	Building Construction	9,300.90
Welders	1	8	46	0.45	Building Construction	2,043.58
Air Compressors	1	6	78	0.48	Architectural Coating	1,518.09
Pavers	2	8	130	0.42	Paving	923.55
Paving Equipment	2	8	132	0.36	Paving	803.80
Rollers	2	8	80	0.38	Paving	571.66

Construction Phase	Days of Operation
Building Construction	210
Architectural Coating	115
Paving	20
Total Days	325

Total Diesel Fuel Used	**29,476.42 (Gallons)**

WORKER TRIPS [2]

Constuction Phase	MPG [3]	Trips	Trip Length (miles)	Fuel Used (gallons) [B]
Building Construction	28.9	18	10.8	1,410.86
Architectural Coating	28.9	4	10.8	171.69
Paving	28.9	15	10.8	111.97
	28.9	0	0.0	-
	28.9	0	0.0	-
	28.9	0	0.0	-

Total Gasoline Fuel Used	**1,582.55**

HAULING AND VENDOR TRIPS [2]				
Trip Class	MPG [3]	Trips	Trip Length (miles)	Fuel Used (gallons) [C]
HAULING TRIPS				
Building Construction	5.2	0	20.0	-
Architectural Coating	5.2	0	20.0	-
Paving	5.2	0	20.0	-
	5.2	0	0.0	-
	5.2	0	0.0	-
	5.2	0	0.0	-
			Total Diesel Fuel Used	**-**
VENDOR TRIPS				
Building Construction	11.9	5	7.3	643.12
Architectural Coating	11.9	0	7.3	-
Paving	11.9	0	7.3	-
	11.9	0	0.0	-
	11.9	0	0.0	-
	11.9	0	0.0	-
			Total Diesel Fuel Used	**643.12**

Total Gasoline Consumption (gallons)	**1,582.55**
Total Diesel Consumption (gallons)	**30,119.53**

Notes:

[A] *Construction Equipment Fuel Used (Formula):*

Quantity * Hours per Day * Horsepower * Load Factor * Days of Operation * BSFC Factor = Total Diesel Fuel Used

[B] *Worker Trips Fuel Used (Formula):*

(Trips * Trip Length * Days) / MPG = Total Gasoline Fuel Used

[C] *Vendor & Hauling Trips Fuel Used (Formula):*

(Trips * Trip Length) / MPG = Total Diesel Fuel Used

Sources:

[1] United States Environmental Protection Agency. 2018. Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES2014b. July 2018. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100UXEN.pdf.

[2] CalEEMod (Version 2016.3.2) Run for Richmond Country Club - Phase 2 Construction, dated June 15, 2020.

[3] California Air Resources Board. 2020. EMFAC2017 [Interactive Database]. Website: https://arb.ca.gov/emfac/2017/. Accessed June 7, 2020.

Construction Office Electricity Calculation

Energy Appendix: CalEEMod Typical Construction Trailer

Typical Construction Trailer - Contra Costa County, Annual

Date: 6/12/2020 8:30 PM

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	8985.6	0.8559	1.2000e-004	2.0000e-005	0.8662
Total		**0.8559**	**1.2000e-004**	**2.0000e-005**	**0.8662**

kWh/yr = kilowatt hours per year

Energy by Land Use - Electricity

Annual	8,986	kWh/yr
Total Over Construction	**18,414**	**kWh**

Total Construction Schedule	
Start	10/1/2021
End	10/19/2023
Total Calendar Days	748
Years	2.05

Richmond Country Club Residential Development - Full Operation

Last Updated: 06/16/2020

Populate one of the following tables (Leave the other blank):

Annual VMT [1]		OR	Daily Vehicle Trips [3]	
Annual VMT:	2,223,875		Daily Vehicle Trips:	
			Average Trip Distance:	

Fleet Class	Fleet Mix [1]	Fuel Economy (MPG) [2]	
Light Duty Auto (LDA)	0.586711	LDA	31.93
Light Duty Truck 1 (LDT1)	0.038259	LDT1	27.24
Light Duty Truck 2 (LDT2)	0.185486	LDT2	25.17
Medium Duty Vehicle (MDV)	0.120728	MDV	20.40
Light Heavy Duty 1 (LHD1)	0.016377	LHD1	8.38
Light Heavy Duty 2 (LHD2)	0.005053	LHD2	7.38
Medium Heavy Duty (MHD)	0.010699	T6 Public	7.50
Heavy Heavy Duty (HHD)	0.024311	T7 Public	5.16
Other Bus (OBUS)	0.001622	OBUS	4.78
Urban Bus (UBUS)	0.001773	UBUS	6.04
School Bus (SBUS)	0.002738	SBUS	8.87
Motorhome (MH)	0.000835	MH	9.86
Motorcycle (MCY)	0.005406	MCY	37.33

Fleet Mix

Vehicle Type	Percent	Fuel Type	Annual VMT: VMT	Vehicle Trips: VMT	Fuel Consumption (Gallons) [A]
Light Duty Auto (LDA)		*Gasoline*	1,304,771.93	-	40,865.46
Light Duty Truck 1 (LDT1)		*Gasoline*	85,083.23	-	3,123.88
Light Duty Truck 2 (LDT2)		*Gasoline*	412,497.68	-	16,388.87
Medium Duty Vehicle (MDV)		*Gasoline*	268,483.98	-	13,162.84
Light Heavy Duty 1 (LHD1)		*Diesel*	36,420.40	-	4,343.75
Light Heavy Duty 2 (LHD2)		*Diesel*	11,237.24	-	1,523.11
Medium Heavy Duty (MHD)		*Diesel*	23,793.24	-	3,172.81
Heavy Heavy Duty (HHD)		*Diesel*	54,064.63	-	10,482.56
Other Bus (OBUS)		*Gasoline*	3,607.13	-	755.30
Urban Bus (UBUS)		*Diesel*	3,942.93	-	653.34
School Bus (SBUS)		*Diesel*	6,088.97	-	686.39
Motorhome (MH)		*Diesel*	1,856.94	-	188.33
Motorcycle (MCY)		*Gasoline*	12,022.27	-	322.01

Total Gasoline Consumption (gallons)	**74,618.35**
Total Diesel Consumption (gallons)	**21,050.30**

Notes:

[A] *Fleet Mix Fuel Consumption (Formula):*

([Annual VMT] OR [Vehicle Trip VMT * Average Trip Length]) * Fleet Mix / MPG = Total Fuel Consumed

Sources:

[1] California Air Resources Board (ARB). 2018. "EMFAC2017 Web Database." Website: https://www.arb.ca.gov/emfac/2017/. Accessed June 15, 2020.

[2] CalEEMod (Version 2016.3.2) Run for Richmond Country Club - Operation, dated June 15, 2020.

[3] Draft Report Transportation Impact Analysis for the Richmond Country Club, dated May 6, 2020.

Operation Natural Gas Use

Source: AQ/GHG Appendix, CalEEMod Output
Richmond Country Club Residential Project
Date: 6/16/2020 10:30 AM

Natural gas consumption not included in AQ, GHG, or Energy analyses due to compliance with the City of Richmond's Energy Reach Code.

kBTU/yr = kilo-British Thermal Units/year
CF = cubic feet

Proposed project would be all-electric (no natural gas)

	Natural Gas Use
Single-Family Housing	4.32E+06

~~**Total** **4,317,020 kBTU/yr**~~

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	4.31702e+006	0.0233	0.1989	0.0847	1.2700e-003		0.0161	0.0161		0.0161	0.0161	0.0000	230.3728	230.3728	4.4200e-003	4.2200e-003	231.7418
Total		**0.0233**	**0.1989**	**0.0847**	**1.2700e-003**		**0.0161**	**0.0161**		**0.0161**	**0.0161**	**0.0000**	**230.3728**	**230.3728**	**4.4200e-003**	**4.2200e-003**	**231.7418**

Proposed Operation Electricity Use
Source: AQ/GHG Appendix, CalEEMod Output
Richmond Country Club Residential Project
Date: 6/16/2020 10:35 AM

Project Electricity Use

kWh/yr = kilowatt hours per year

Land Use	Electricity Use (kWh/yr)
Single-Family Housing	814,214.00

Total **814,214 kWh/yr**

Project would include on-site solar, see CalEEMod Note 12.

Land Use	Electricity Use
Single-Family Housing	366,655.00

Total **366,655 kWh/yr**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	814214	77.5575	0.0107	2.2200e-003	78.4856
Total		**77.5575**	**0.0107**	**2.2200e-003**	**78.4856**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	366855	34.9256	4.8200e-003	1.0000e-003	35.3435
Total		**34.9256**	**4.8200e-003**	**1.0000e-003**	**35.3435**

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Appendix E:
Geology and Soils Supporting Information

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E.1 - Preliminary Geotechnical Exploration

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RICHMOND COUNTRY CLUB
RICHMOND, CALIFORNIA

PRELIMINARY GEOTECHNICAL EXPLORATION

SUBMITTED TO
Mr. Chris Zaballos
MLC Holdings Inc.
2603 Camino Ramon, Suite 140
San Ramon, CA 94583

PREPARED BY
ENGEO Incorporated

January 30, 2020

PROJECT NO.
15693.000.000

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ENGEO
Expect Excellence

Project No.
15693.000.000

January 30, 2020

Mr. Chris Zaballos
MLC Holdings Inc.
2603 Camino Ramon, Suite 140
San Ramon, CA 94583

Subject: Richmond Country Club
1 Markovich Lane
Richmond, California

PRELIMINARY GEOTECHNICAL EXPLORATION

Dear Mr. Zaballos:

This report summarizes geotechnical and geological existing conditions and constraints and provides preliminary geotechnical recommendations for conceptual planning of the Richmond Country Club project located in Richmond, California. The preliminary conclusions and recommendations of this report are based on geotechnical and geologic studies completed to date.

Based on the results of this study, we identified the following geotechnical and geologic considerations to incorporate in the project planning:

- Existing undocumented fill.
- Soft soil that could compress under new structural loads or additional fills.
- Surface ruptures from the Hayward fault

It is our opinion that the proposed Richmond Country Club project is feasible from a geotechnical standpoint provided the recommendations by ENGEO Incorporated, as summarized in this document, are incorporated into project planning.

We trust that this document provides geotechnical guidance appropriate for the current planning process. Please contact us if you have any questions regarding this document.

Sincerely,

ENGEO Incorporated

Jerry Chen

James Allen

REGISTERED PROFESSIONAL ENGINEER
STEVEN HARRIS
No. 60007
CIVIL
STATE OF CALIFORNIA

Steve Harris, PE
jc/ja/sh/cjn

TABLE OF CONTENTS

Letter of Transmittal

1.0 INTRODUCTION 1

1.1 PURPOSE AND SCOPE 1
1.2 PROJECT LOCATION 1
1.3 PROJECT DESCRIPTION 1
1.4 SITE BACKGROUND 1

2.0 SITE GEOLOGY AND SEISMICITY 1

2.1 REGIONAL AND SITE GEOLOGY 1
2.2 SITE SEISMICITY 2
2.3 SURFACE CONDITIONS 2
2.4 FIELD EXPLORATION 3
2.5 SUBSURFACE CONDITIONS 3
2.6 GROUNDWATER CONDITIONS 3

3.0 DISCUSSION AND PRELIMINARY CONCLUSIONS 4

3.1 DISTURBED NEAR SURFACE SOIL AND EXISTING UNDOCUMENTED FILL 4
3.2 SEISMIC HAZARDS 6

3.2.1 Ground Rupture 6
3.2.2 Ground Shaking 6
3.2.3 Liquefaction/Clay Soil Softening 6
3.2.4 Seismic-Induced Settlement Analyses 6
3.2.5 Lateral Spreading 7

3.3 FLOOD ZONE 7
3.4 PRELIMINARY BUILDING CODE SEISMIC DESIGN 7

4.0 PRELIMINARY RECOMMENDATIONS 8

4.1 GRADING 8

4.1.1 Demolition and Stripping 8
4.1.2 Existing Fill Removal 8
4.1.3 Selection of Materials 8
4.1.4 Fill Placement 9

4.2 PRELIMINARY FOUNDATION RECOMMENDATIONS 9

4.2.1 Post-Tensioned Mat Foundations 9

4.3 PRELIMINARY PAVEMENT DESIGN 9
4.4 DRAINAGE 10

5.0 FUTURE STUDIES 10

6.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS 10

SELECTED REFERENCES

FIGURES

APPENDIX A - Test Pit Logs

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of this preliminary geotechnical exploration, as described in our proposal dated November 27, 2018, is to provide an assessment of the potential geotechnical and geologic concerns associated with the use of the site for a residential neighborhood and associated improvements. The scope of our services included a site visit, a review of published geologic maps, review of readily available geotechnical reports for the site, conducting twelve test pits on site and logging of subsurface conditions, and preparation of this report discussing potential hazards.

This report was prepared the exclusive use of you and your consultants for evaluation of this project. In the event that any changes are made in the character, design or layout of the development, we must be contacted to review the preliminary conclusions and recommendations contained in this report to determine whether modifications are necessary. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent.

1.2 PROJECT LOCATION

The approximately 24-acre site is located in Richmond, California. The Property is bordered by the Atchison Topeka and Santa Fe Railroad to the west and north, and by the Richmond Country Club Golf Course to the east and south.

1.3 PROJECT DESCRIPTION

We understand the proposed improvements will include development of single-family residences, paved streets, parking areas and associated utilities. Structural loads and grading are yet to be determined; however, we assume that structural loads will be representative for this type of construction. According to the conceptual site plan, prepared by CBG engineers (November 2018) approximately 88 units are proposed at the site. The plan shows a fill slope proposed along the west side of the proposed development. Conceptual grading plans were not available for our review but we anticipate minor fills and site grading to accommodate the development.

1.4 SITE BACKGROUND

We reviewed historical aerial photographs, and published geologic and hazard maps for the site and local vicinity. Aerial photographs as early as 1939 show the site to be already in use as a golf course. The Hayward Fault is oriented in the north-south direction and runs west of the project site. The southwest portion of the site is currently located within an Alquist-Priolo setback zone.

2.0 SITE GEOLOGY AND SEISMICITY

2.1 REGIONAL AND SITE GEOLOGY

The region is within the North Coast Range Province of California, an area dominated by northwest-trending geologic features such as folds and faults. The San Francisco Bay is located

in a fault bound, elongated structural trough that has been filled with a sequence of Quaternary age sedimentary deposits derived from the surrounding Coast Ranges. According to mapping by Graymer (1994) shown in Figure 3, the subject site is located on undivided quaternary deposits (Qu), which consists of alluvial deposits underlain by the Orinda Formation and Franciscan Complex.

2.2 SITE SEISMICITY

The San Francisco Bay Area contains numerous active faults. Figure 4 shows the approximate location of active and potentially active faults and significant historic earthquakes mapped within the San Francisco Bay Region. An active fault is defined by the State as one that has had surface displacement within Holocene time, about the last 11,000 years (Bryant and Hart, 1997). Based on the 2008 USGS National Seismic Hazard Maps, the nearest active faults is the Hayward-Rodgers Creek Fault, which runs north to south within a few hundred feet west of the site. This fault is considered capable of a moment magnitude earthquake of 7.3. Other active faults located near the site include the West Napa fault, located approximately 13.4 miles north of the site, considered capable of a moment magnitude earthquake of 6.7, and the Green Valley Connected fault, located approximately 15.4 miles east of the site, considered capable of a moment magnitude earthquake of 6.8.

TABLE 2.2-1: Active Faults Capable of Producing Significant Ground Shaking at the Site Latitude: 37.99000, Longitude: -122.35230

FAULT NAME	DISTANCE FROM SITE (MILES)	DIRECTION FROM SITE	MAXIMUM MOMENT MAGNITUDE (ELLSWORTH)
Hayward-Rodgers Creek	0.01	West	7.3
West Napa	13.4	North	6.7
Green Valley Connected	15.4	East	6.8
Mount Diablo Thrust	18.8	Southeast	6.7
San Gregorio Connected	21.1	Southwest	7.5
Calaveras	22.1	Southeast	7

As shown in Figure 5, certain segments of the subject site is within a currently designated Alquist-Priolo Earthquake Fault Zone. This indicates potential surface rupture hazard to structures within this zone. Fault trenching in the indicated areas, in accordance with Public Resources Code Section 2621.5(a), would be required to build within the Fault Zone.

The Uniform California Earthquake Rupture Forecast (UCERF3, 2013) evaluated the 30-year probability of a Moment Magnitude 6.7 or greater earthquake occurring on the known active fault systems in the Bay Area. The UCERF3 generated an overall probability of 72 percent for the San Francisco Region as a whole, a probability of 14.3 percent for the Hayward fault, 7.4 percent for the Calaveras fault, and 6.4 percent for the northern section of the San Andreas fault.

2.3 SURFACE CONDITIONS

This site is generally sloping downwards from east to west and from the middle towards the north and south. Upon review of aerial photographs, it appears the southern and southeast portion of the Property was previously a portion of the golf course, and the northern and western portion of the Property is predominantly open space with numerous stockpiles and evidence of

previous fill placement. Based on preliminary topographic data obtained from Google Earth, the site elevation ranges from approximately 95 feet (WGS84) on the east end of the site to 55 feet in the southwest end of the site. A row of large trees is located on the eastern side of the site.

2.4 FIELD EXPLORATION

We performed a field exploration on January 10, 2019. Our field exploration consisted of excavating and logging 12 test pits at various accessible locations at the site, as shown in Figure 2. The location of our explorations are approximately located and were estimated using consumer-grade global positioning system (GPS) and their proximity to existing site features; therefore, the locations shown should be considered accurate only to the degree implied by the method used.

We retained a track mounted excavator to dig test pits to a maximum depth of approximately 10 feet and logged the type, location, and uniformity of the underlying soil/rock. The test pit logs present descriptions that depict the subsurface conditions encountered. All exploratory test pits were backfilled with the excavated soil with nominal compactive effort, which should be considered as non-engineered fill.

We used the field logs to develop the test pit logs in Appendix A. The logs depict subsurface conditions at the exploration locations for the date of exploration; however, subsurface conditions may vary with time.

2.5 SUBSURFACE CONDITIONS

The stratigraphy of the site, based on test pit data, is generally native soils, fill, or stockpiled materials, which overlie native soils, two Pleistocene units, which consist of sandy clay/clayey sand, grading into a dense conglomerate of the Montezuma Formation, which then overlie the Garrity Member of the Contra Costa Group bedrock along a disconformable contact. The upper 2 to 3 feet of site soil generally consists of sandy lean clay to clayey sand, which could be an indication that the near-surface soils have a low to moderate expansion potential. Soil and Pleistocene deposit information is corroborated using a local study by Borchardt (1988) and bedrock correlations from (Wagner, 1978; Allen, 2003). The approximate location of the nonengineered fill is shown on Figure 2.

Approximately 5 feet of landslide debris was also encountered in Test Pit 11 in the western section of the site. Estimations of the extent of this debris is outlined in Figure 2. However, further test pit studies are needed to refine these boundaries.

The Test Pit logs include the specific subsurface conditions at the location of the pits. We include our Test Pit logs in Appendix A.

2.6 GROUNDWATER CONDITIONS

Groundwater was not encountered during our test pit field exploration and we have not identified any publicly available well information. Further testing will be required if determining the depth to groundwater is important for development of the project.

3.0 DISCUSSION AND PRELIMINARY CONCLUSIONS

Based upon this preliminary study, it is our opinion that the project site is feasible for the proposed residential development from a geotechnical standpoint provided that the preliminary recommendations contained in this report and future design-level geotechnical studies are incorporated into the development plans. A more comprehensive site-specific geotechnical exploration should be performed as part of the design process. The exploration would include borings and laboratory soil testing to provide data for preparation of specific recommendations regarding grading and foundation design, and test pits to determine the extent of landslide hazards on the west end of the site. The exploration will also allow for more detailed evaluations of the geotechnical issues discussed below and afford the opportunity to provide recommendations regarding techniques and procedures to be implemented during construction to mitigate potential geotechnical/geological hazards.

Based upon our field exploration and review of readily available published maps for the site, the main geotechnical concerns for the proposed site development include:

- Disturbed near surface soil and existing undocumented fill
- Potentially expansive soil
- Surface ruptures from the Hayward Fault
- Landslide debris

3.1 DISTURBED NEAR SURFACE SOIL AND EXISTING UNDOCUMENTED FILL

As previously mentioned, much of the development area has been used as an area of filling and stockpiling of organics, which includes large areas of tree trunks, thick brush stockpiles, wood chip piles, and bunker sand storage, all of which resulting in disturbed near surface soil. Disturbed near surface soil and undocumented fill, which includes both above and below present day stockpiled materials associated with the golf course maintenance and groundskeeper activities, will undergo excessive settlement, especially when subject to new loads from grading and the planned building. The extent and quality of existing fills were preliminarily evaluated in the 12 test pits; however, detailed mapping of subsurface fill materials should be performed at the time of our design-level study.

For convenience, we have assigned labels to distinguish between unique stockpiles/fill of above ground materials, which also were found at varying depths into native materials via our test pit investigation. We named these areas as: Existing Fill South, Existing Fill North, Bunker Sand and Wood Chips/Organics. Our volume estimates should be regarded as a minimum and are based on our limited test pit investigation and surficial mapping. The approximate location of these materials are shown on Figure 2. Most of the materials in all areas mapped as fill are thickly packed mats of vegetation/organic rubbish, and are not a suitable surface to build on and should be removed from structural areas. In addition, there is a large stockpile of cut eucalyptus tree trunks, on the order of 20+feet long and 2 to 4 feet in diameter. The approximate location of the tree trunks is shown on Figure 2.

We present fill removal recommendations in Section 4.1.

TABLE 3.1-1

RICHMOND COUNTRY CLUB			
EXISTING FILL			**1/22/2019**
LOCATION	**DEPTH (FEET)**	**APPROXIMATE AREA (SQ. FEET)**	**APPROXIMATE VOLUME (CUBIC YARDS)**
Existing Fill South	4.0	71,200	11,000
Existing Fill North	4.0	110,700	16,000
Bunker Sand	4.0	13,500	2,000
		TOTAL	**29,000**
EXISTING ORGANICS			
Wood Chips/Organics	1.5	791,000	44,000

PHOTO 3.1-1: Tree Trunk area, looking west to TP-7



PHOTO 3.1-2: Wood chips and organic stockpiles.



3.2 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking, soil liquefaction, and lateral spreading. These hazards are discussed in the following sections.

Based on topographic and lithological data, the risk of regional subsidence or uplift, tsunamis, and seiches is considered low at the site. A landslide is a potential concern on the western edge of the site and would require more detailed test pits and strength data to determine the risk.

3.2.1 Ground Rupture

The Hayward fault trace is currently mapped to run west of the project site, with a portion of the property in the southwest region located within its associated Alquist-Priolo Earthquake Fault Zone. This indicates that there is a high risk of surface rupture hazard. The current plans from CBG indicate that all proposed developments are outside the current setback zone. Further fault trenching studies would need to be performed to accurately assess the surface rupture hazard should plans be altered to include developments in this setback zone.

3.2.2 Ground Shaking

An earthquake of moderate to high magnitude generated within the San Francisco Bay Region, similar to those that have occurred in the past, could cause considerable ground shaking at the site. To mitigate the shaking effects, all structures should be designed using sound engineering judgment and the latest California Building Code (CBC) requirements as a minimum. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally substantially smaller than the expected peak forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1996).

3.2.3 Liquefaction/Clay Soil Softening

The project site is currently not mapped within a zone of required investigation for liquefaction by the State of California. Due to the shallow bedrock and lack of evidence of a high water table, it is our opinion that the risk for liquefaction is low.

3.2.4 Seismic-Induced Settlement Analyses

Seismically induced settlement can be generally subdivided into two categories for granular soils: (1) settlement as a result of liquefaction of saturated or nearly saturated soils and (2) dynamic densification of non-saturated soils. Research has also shown that low-expansive cohesive soils can also undergo post-seismic settlement.

Deformation of the ground surface is a common result of liquefaction. Vertical settlement may result from densification of the deposit or volume loss from venting to the ground surface. Densification occurs as excess pore pressures dissipate, resulting in vertical settlement at the ground surface. In addition to the above analysis, we also evaluated the capping effect of any overlying non-liquefiable soils. In order for liquefaction-induced ground failure to occur, the pore water pressure generated within the liquefied strata must exert a sufficient enough force to break through the overlying soil and vent to the surface resulting in sand boils or fissures.

Clay-like (cohesive) soils can also develop pore pressures during cyclic loading, but generally do not reach zero effective stress and are typically considered non-liquefiable (Robertson, 2009). However, clay-like soils can deform during cyclic earthquake loading and experience volumetric strains and post-earthquake reconsolidation. The volumetric strains for clay-like soils are generally small compared to cohesionless soils (sand-like), since clay-like soils often retain some original soil structure.

Additional evaluation should be conducted during a design-level study to verify the soil susceptibility to liquefaction.

3.2.5 Lateral Spreading

Lateral spreading involves lateral ground movements caused by seismic shaking. These lateral ground movements are often associated with a weakening or failure of an embankment or soil mass overlying a layer of liquefied sands or weak soils. Since liquefaction is not anticipated at the site, the risk for lateral spreading is considered low.

3.3 FLOOD ZONE

The project site is mapped within Zone X on the Federal Emergency Management Agency (FEMA 2015) Flood Hazard Map for the City of Richmond, indicating that it is within an area determined to be outside the 0.2 percent annual chance floodplain. The Tsunami Inundation Map for the Richmond/San Quentin Quadrangle (CGS, 2009) maps the tsunami inundation line as close as one mile west of the project site. The project Civil Engineer should review pertinent information relating to possible flood levels for the subject site based on final pad elevations and provide appropriate design measures for development of the project, if necessary.

3.4 PRELIMINARY BUILDING CODE SEISMIC DESIGN

We provide the 2016 California Building Code (CBC) seismic parameters in Table 3.4-1 below.

TABLE 3.4-1: 2016 CBC Seismic Design Parameters
Latitude: 37.99000, Longitude: -122.35230

PARAMETER	VALUE
Site Class	D
Mapped MCE_R Spectral Response Acceleration at Short Periods, S_S (g)	2.49
Mapped MCE_R Spectral Response Acceleration at 1-second Period, S_1 (g)	1.03
Site Coefficient, F_A	1.00
Site Coefficient, F_V	1.50
MCE_R Spectral Response Acceleration at Short Periods, S_{MS} (g)	2.49
MCE_R Spectral Response Acceleration at 1-second Period, S_{M1} (g)	1.55
Design Spectral Response Acceleration at Short Periods, S_{DS} (g)	1.66

PARAMETER	VALUE
Design Spectral Response Acceleration at 1-second Period, S_{D1} (g)	1.03
Mapped MCE Geometric Mean (MCE_G) Peak Ground Acceleration, PGA (g)	0.96
Site Coefficient, F_{PGA}	1.00
MCE_G Peak Ground Acceleration adjusted for Site Class effects, PGA_M (g)	0.96

4.0 PRELIMINARY RECOMMENDATIONS

4.1 GRADING

The following preliminary recommendations are for initial land planning and preliminary estimating purposes. Final recommendations regarding site grading and foundation construction will be provided after more detailed land plans have been prepared.

4.1.1 Demolition and Stripping

Site development will commence with the demolition of existing improvements, including abandoned utilities, if any exist. All debris should be removed from any location to be graded, from areas to receive fill or structures, or those areas to serve as borrow. The depth of removal of such materials should be determined by the Geotechnical Engineer in the field at the time of grading.

Existing vegetation should be removed from areas to receive fill, or structures, or those areas to serve for borrow. Tree trunks and above-grade stockpiles of woodchips and bunker sands should also be removed. Tree roots should be removed down to a depth of at least 3 feet below existing grade. The actual depth of tree root removal should be determined by the Geotechnical Engineer's representative in the field. Subject to approval by the Landscape Architect, strippings and organically contaminated soils can be used in landscape areas. Otherwise, such soils should be removed from the project site. Any topsoil that will be retained for future use in landscape areas should be stockpiled in areas where it will not interfere with grading operations.

All excavations from demolition and stripping below design grades should be cleaned to a firm undisturbed soil surface determined by the Geotechnical Engineer. This surface should then be scarified, moisture conditioned, and backfilled with compacted engineered fill. The requirements for backfill materials and placement operations are the same as for engineered fill.

No loose or uncontrolled backfilling of depressions resulting from demolition and stripping is permitted.

4.1.2 Existing Fill Removal

All existing fill and soft material, as well as any landslide debris, should be excavated to expose firm native soils. Excavated material may be used as fill material if it meets the requirements of Section 4.1.3. The approximate location of the existing fill is shown on Figure 2.

4.1.3 Selection of Materials

With the exception of construction debris (wood, brick, asphalt, concrete, metal, etc.), trees, organically contaminated materials, and environmentally impacted soils (if any), we anticipate the site soils are suitable for use as engineered fill provided they are broken down to particles

with diameter of 6 inches or less. Other materials and debris, including trees with their root balls, should be removed from the project site.

Imported fill materials should meet the above requirements and have a plasticity index equal to or less than the onsite material. ENGEO should sample and test proposed imported fill materials at least 72 hours prior to delivery to the site.

4.1.4 Fill Placement

For land planning and cost estimating purposes, the following compaction control requirements should be anticipated for general fill areas:

- Test Procedures: ASTM D-1557.
- Required Moisture Content: Not less than 3 percentage points above optimum moisture content for soil with PI of 12 or greater.

  Not less than 1 percentage points above optimum moisture content for soil with PI of less than 12.
- Minimum Relative Compaction: 90 percent.

Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material.

Additional compaction requirements may be required for deeper fills and retaining wall backfill. These additional requirements will be developed during our design level exploration.

4.2 PRELIMINARY FOUNDATION RECOMMENDATIONS

In order to reduce the effects of potentially expansive soil, post-tensioned mat foundations can be used to support the single-family structure. If the areas of non-expansive can be delineated through supplemental data collected during the design level geotechnical exploration, conventional footings with slab-on-grade may be a viable option.

4.2.1 Post-Tensioned Mat Foundations

From a structural performance standpoint, post-tensioned (PT) foundations are superior for limiting structural damage resulting from post-construction soil movement. In addition, PT slabs can reduce problems with non-geotechnical issues such as shrinkage cracking and slab moisture transmission. We anticipate the site soil conditions would likely result in a 10-inch-thick post-tensioned mat. Additional laboratory testing and analysis is required to estimate the differential pad movement and bearing design bearing capacities.

4.3 PRELIMINARY PAVEMENT DESIGN

The following preliminary pavement sections have been determined for an assumed Resistance Value (R-value) of 5 and in accordance to the design methods contained in Chapter 630 of Caltrans Highway Design Manual.

TABLE 4.3-1: Preliminary Pavement Section

TRAFFIC INDEX	AC (INCHES)	AB (INCHES)
5.0	3.0	10.0
6.0	3.5	13.0
7.0	4.0	16.0

Note: AC – Asphalt Concrete
AB – Caltrans Class 2 aggregate base (R-value of 78 or greater)

The above preliminary pavement sections are provided for estimating only. We recommend the actual subgrade material should be tested for R-value, and the Traffic Index and minimum pavement section(s) should be confirmed by the Civil Engineer and the City of Richmond.

4.4 DRAINAGE

The building pad must be positively graded at all times to provide for rapid removal of surface water runoff from the foundation systems and to prevent ponding of water under floors or seepage toward the foundation systems at any time during or after construction. Ponding of stormwater must not be permitted on the building pad during prolonged periods of inclement weather. All surface water should be collected and discharged into the storm drain system. Landscape mounds must not interfere with this requirement.

All roof stormwater should be collected and directed to downspouts. Stormwater from roof downspouts should be directed to a solid pipe that discharges to the street or to an approved outlet or onto an impervious surface, such as pavement that will drain at a 2 percent slope gradient.

5.0 FUTURE STUDIES

As previously discussed, a site-specific design level geotechnical exploration should be performed as part of the design process. The exploration should include supplemental borings, laboratory soil testing, and test pits on the western portion of the site to provide additional data for evaluation of potentially expansive material, non-engineered fill and landslide. The design-level report will also provide specific recommendations regarding grading, foundation design, retaining wall design, and drainage for the proposed development.

6.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents preliminary geotechnical recommendations for design of the improvements discussed in Section 1.3 for the subject Richmond Country Club project. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations, if any. It is the responsibility of the owner to transmit the information and preliminary recommendations of this report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The preliminary conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

We strived to perform our professional services in accordance with generally accepted geotechnical engineering principles and practices currently employed in the area; no warranty is expressed or implied. There are risks of earth movement and property damages inherent in building on or with earth materials. We are unable to eliminate all risks or provide insurance; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field and other conditions discovered at the time of report preparation. We developed this report with limited subsurface exploration data. We assumed that our subsurface exploration data is representative of the actual subsurface conditions across the site. Considering possible underground variability of soil, rock, stockpiled material, and groundwater, additional costs may be required to complete the project. We recommend that the owner establish a contingency fund to cover such costs. If unexpected conditions are encountered, notify ENGEO immediately to review these conditions and provide additional and/or modified recommendations, as necessary.

Our services did not include excavation sloping or shoring, soil volume change factors, or a geohazard exploration. In addition, our geotechnical exploration did not include work to determine the existence of possible hazardous materials. If any hazardous materials are encountered during construction, then notify the proper regulatory officials immediately.

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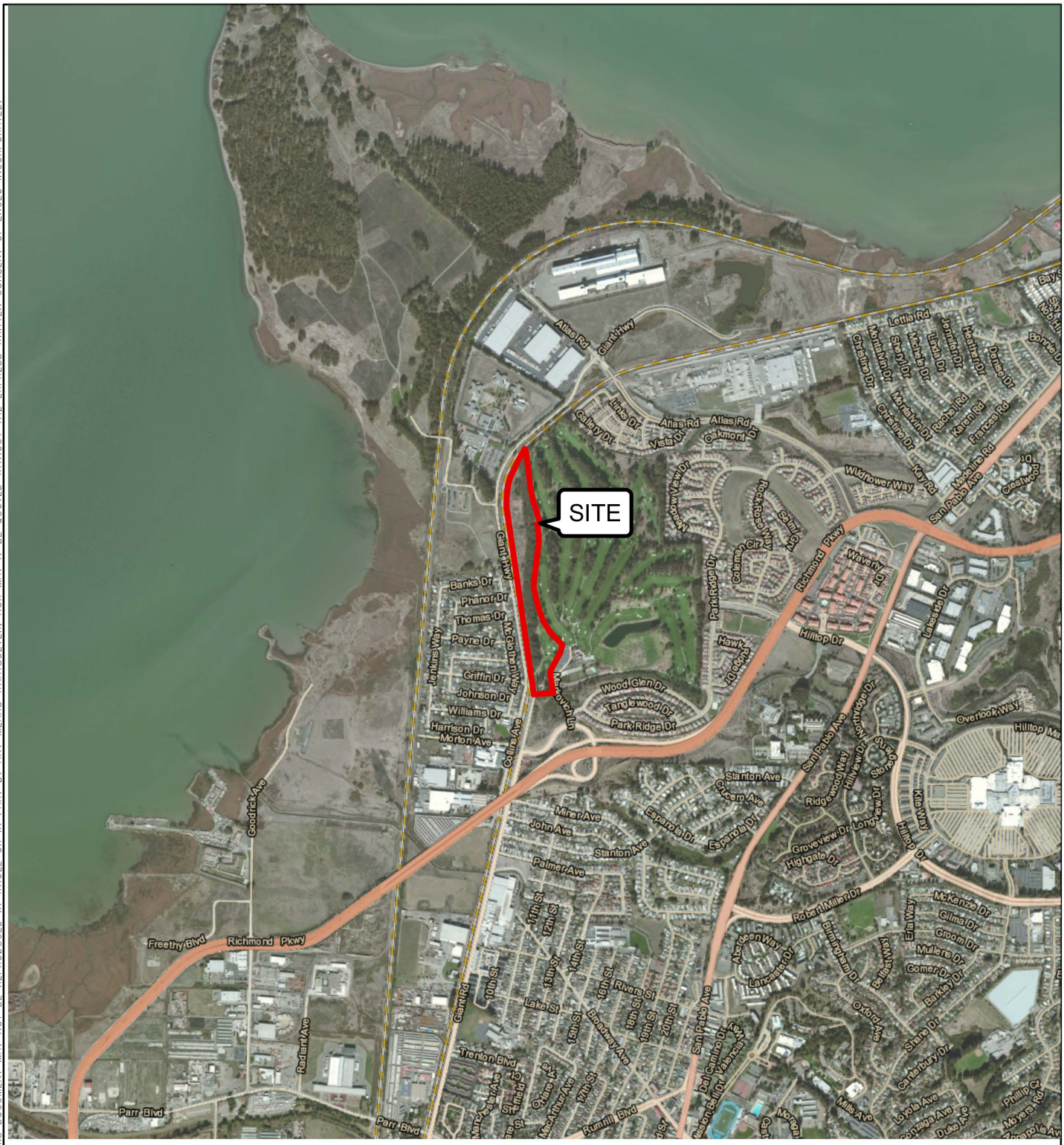
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FIGURES

Figure 1 - Vicinity Map
Figure 2 - Site Plan
Figure 3 – Regional Geologic Map
Figure 4 - Regional Faulting and Seismicity Map
Figure 5 - Seismic Hazard Zones Map

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BASEMAP SOURCE: ESRI MAPPING SERVICE

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VICINITY MAP

RICHMOND COUNTRY CLUB

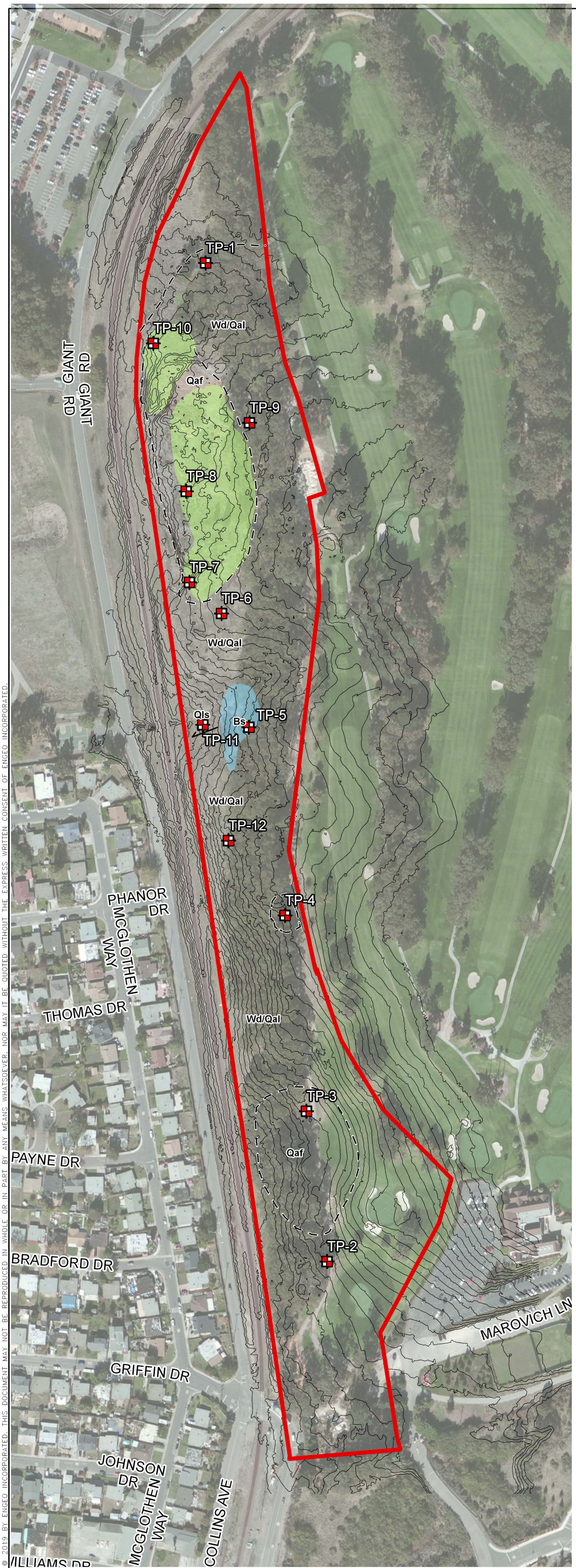
RICHMOND, CALIFORNIA

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FIGURE NO. 1

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N

0 125 250

FEET

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

PROJECT SITE

TREE TRUNKS (5 TO 6 FEET ABOVE EXISTING GRADE)

BUNKER SAND (UP TO 5 FEET ABOVE EXISTING GRADE)

GEOLOGIC CONTACT

1-TP-12 TEST PIT (ENGEO, 2018)

Qaf EXISTING UNDOCUMENTED FILL

Wd/Qal WOODY DEBRIS (WOOD CHIPS, TREE TRIMMINGS, ORGANICS, ETC...) OVERLYING NATIVE ALLUVIAL DEPOSITS (THICKNESS VARIES FROM 3 FEET TO LESS THAN 1 FOOT)

Qls LANDSLIDE

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SITE PLAN

RICHMOND, CALIFORNIA

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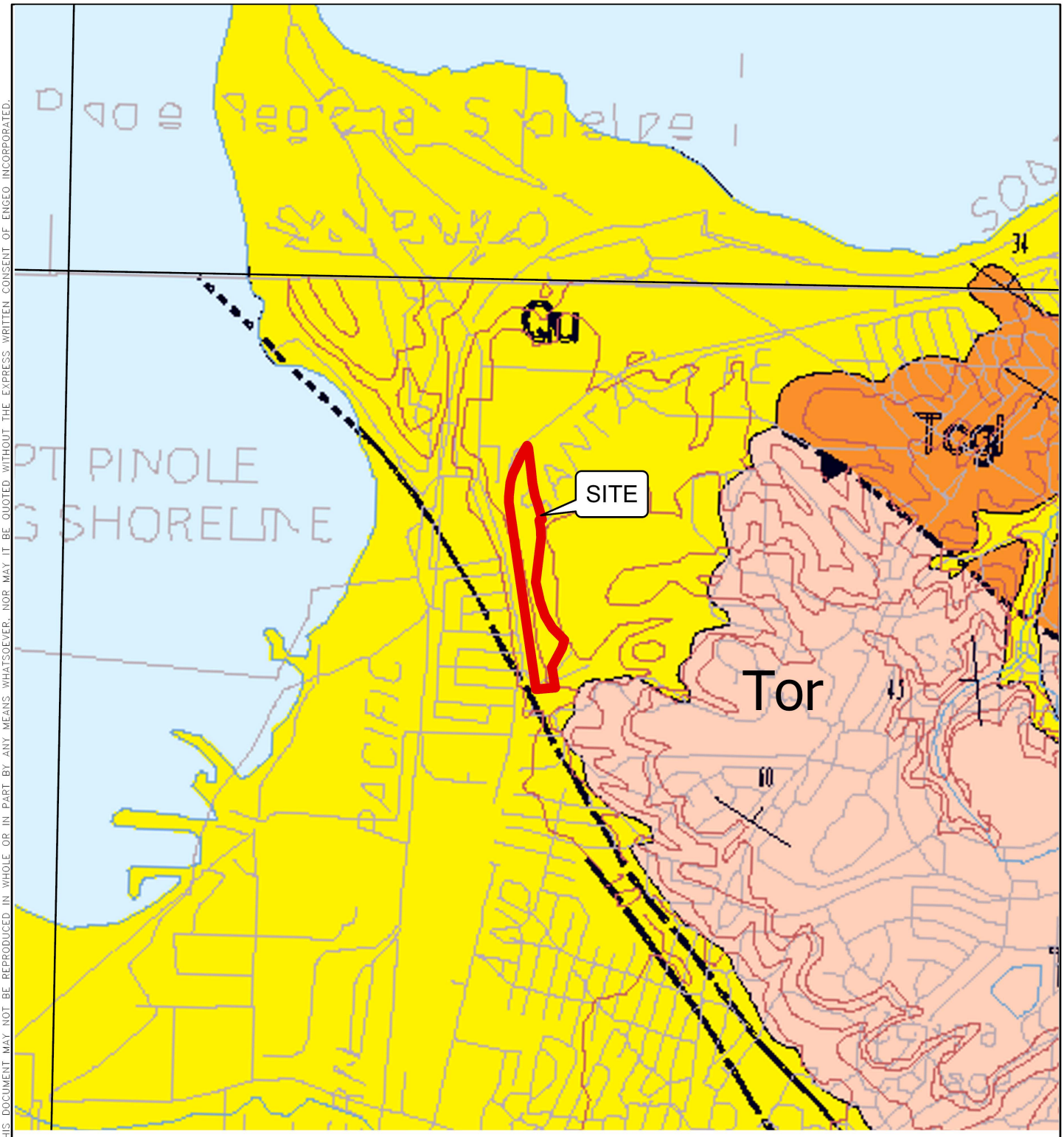
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FIGURE NO. 2

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- Qu — UNDIVIDED QUATERNARY DEPOSITS
- Tor — ORINDA FORMATION
- Tcgl — CONGLOMERATE

N

0 1,000 2,000

FEET

BASEMAP SOURCE: GRAYMER 1994

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REGIONAL GEOLOGIC MAP

RICHMOND COUNTRY CLUB

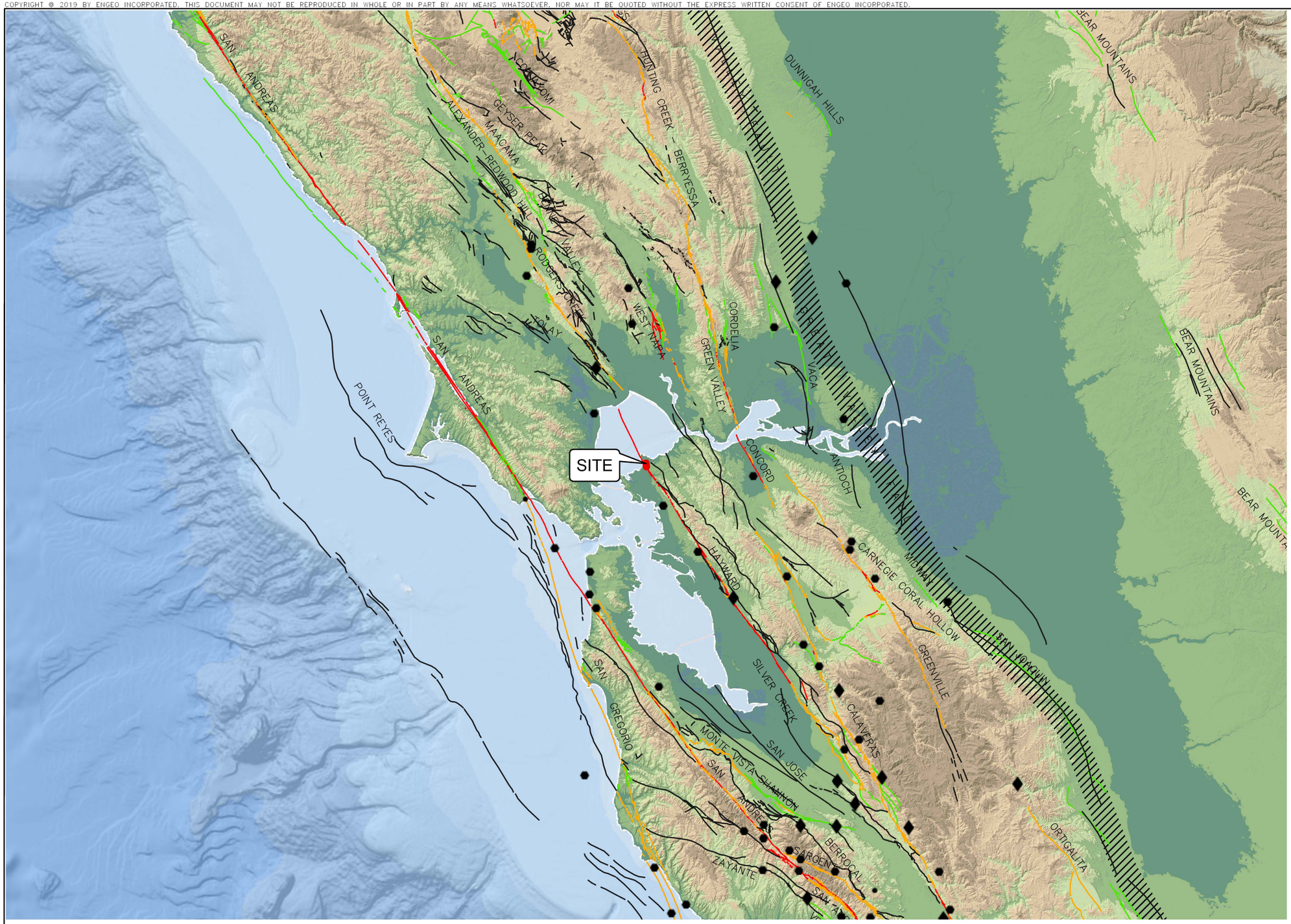
RICHMOND, CALIFORNIA

PROJECT NO. : 15693.000.000	FIGURE NO. 3
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N

0 7.5 15

Miles

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

EARTHQUAKE

- MAGNITUDE 7+
- MAGNITUDE 6-7
- MAGNITUDE 5-6

USGS QUATERNARY FAULTS

- HISTORICAL
- LATEST QUATERNARY
- LATE QUATERNARY
- UNDIFFERENTIATED QUATERNARY
- HISTORIC BLIND THRUST FAULT ZONE

BASE MAP SOURCE
ESRI, GARMIN, GEBCO, NOAA NGDC, AND OTHER CONTRIBUTORS
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATA SET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, 2018
U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800-PRESENT)

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REGIONAL FAULTING AND SEISMICITY

RICHMOND COUNTRY CLUB
RICHMOND, CALIFORNIA

PROJECT NO. : 15693.000.000
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FIGURE NO. 4

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N

0 1,000 2,000 FEET

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

Fault Traces

- Accurately Located
- Approximately Located
- Inferred
- Concealed

Earthquake Fault Zones

Zone boundaries are delineated by straight-line segments; the boundaries define the zone encompassing active faults that constitute a potential hazard to structures from surface faultingor fault creep such that avoidance as described in Public Resources Code Section 2621.5(a) would be required.

BASEMAP SOURCE: ESRI MAPPING SERVICE, CALIFORNIA DEPARTMENT OF CONSERVATION, CALIFORNIA GEOLOGICAL SURVEY

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SEISMIC HAZARDS ZONE MAP

RICHMOND COUNTRY CLUB

RICHMOND, CALIFORNIA

PROJECT NO. : 15693.000.000	FIGURE NO. 5
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APPENDIX A

Test Pit Logs

TEST PIT LOG

Richmond Country Club 1 Markovich Lane, Richmond, CA. 15693.000.000	Logged By: James Allen Logged Date: January 10, 2019 Equipment: 313 CAT Excavator

Test Pit Number	Depth (ft.)	Description
T-1	0-1	CLAY (CL) with some very fine-grained sand, very dark gray (2.5Y 3/1), very stiff, moist, lightens in color at depth and grades into a more clayey B-Horizon [NATIVE A & B HORIZON SOIL PACKAGE].
	1-6.5	Sandy CLAY (CL), reddish brown (5YR 5/4) to brown (7.5YR 5/3), very stiff (pp = 3.5 tsf) at top of unit and very stiff to hard (pp = 4.0 to >4.5 tsf) at base of unit, moist, contains more gravel at base, contains weathered clasts of highly weathered basalt and scoria, Claremont Chert, and Franciscan Complex-derived, black metavolcanics, red, green and varicolored chert. Contact with bedrock below is disconformable [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT].
	6.5-8.5	CLAYSTONE, dark bluish gray (Gley 2 4/1/5B), very weak, slightly weathered, very thinly bedded (1-inch thick partings), internally sheared from aseismic movement along bedding planes from broad-regional tectonics [GARRITY MEMBER OF CONTRA COSTA GROUP BEDROCK]. -No groundwater encountered





TEST PIT LOG

Richmond Country Club 1 Markovich Lane, Richmond, CA. 15693.000.000	Logged By: James Allen Logged Date: January 10, 2019 Equipment: 313 CAT Excavator

Test Pit Number	Depth (ft.)	Description
T-2	0-0.8	Clayey SILT (ML) with some very fine-grained sand, very dark gray (2.5Y 3/1), very stiff, moist, lightens in color at depth and grades into a more clayey A/B-Horizons below. [FILL - DISTURBED].
	0.8-2.9	Sandy CLAY (CL/ML), dark reddish gray (5YR 4/2), very stiff (pp = 3.5 tsf), moist, well-developed cly-lined ped surfaces. [NATIVE SOILS].
	2.9-4.5	Sandy CLAY (CL), light yellowish brown (10YR 6/4) at top of unit, grades to brown (7.5YR 5/3), and to dark reddish brown (2.5YR 5/4) where oxidized, and dark reddish gray (2.5YR 4/1) at base of pit, hard (pp > 4.5 tsf), moist, sandy-clay/clayey-sand younger Pleistocene deposit, typically sits stratigraphically above coarse gravels (See T-1). [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT].
		2-feet: Gallon Bag Sample 4-feet: Gallon Bag Sample -No groundwater encountered





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TEST PIT LOG

Richmond Country Club 1 Markovich Lane, Richmond, CA. 15693.000.000	Logged By: James Allen Logged Date: January 10, 2019 Equipment: 313 CAT Excavator

Test Pit Number	Depth (ft.)	Description
T-3	0 - 5	Clayey SILT (ML) with some gravels and woody debris, grayish brown (2.5Y 5/2) to very dark gray (2.5Y 3/1), loose to medium dense/stiff (pp = 2.0 tsf), moist, contains partially decomposed wood debris, discarded bunker and lawn cuttings [ARTIFICAL FILL (AF) - DISTURBED].
	5 - 8	Silty CLAY (CL), light yellowish brown (10YR 6/4) at top of unit, to dark reddish gray (2.5YR 4/1) at base of pit, hard (pp > 4.5 tsf), moist, abundant $CaCO_3$ at top of unit below AF, younger Pleistocene deposit, typically sits stratigraphically above coarse gravels as in T-1. [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT].
		3-Feet: One Bulk/Bucket Sample -No groundwater encountered





TEST PIT LOG

Richmond Country Club 1 Markovich Lane, Richmond, CA. 15693.000.000	Logged By: James Allen Logged Date: January 10, 2019 Equipment: 313 CAT Excavator

Test Pit Number	Depth (ft.)	Description
T-4	0 – 2.6	CLAY (CL) with some very fine-grained sand, very dark gray (2.5Y 3/1) at top grading down to dark gray (7.5YR 4/1) , stiff to very stiff, moist, lightens in color at depth and grades into a more clayey B-Horizon [NATIVE A & B HORIZON SOIL PACKAGE].
	2.6 – 7.3	Sandy CLAY (CL), light yellowish brown (10YR 6/4) at top of unit, grades to brown (7.5YR 5/3), and to dark reddish brown (2.5YR 5/4) at base above gravel/conglomerate, hard (pp > 4.5 tsf), moist, sandy-clay/clayey-sand younger Pleistocene deposit, typically sits stratigraphically above coarse gravels (See T-1). [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT].
	7.3 - 12	CONGLOMERATE, dark gray (5YR 4/1) to olive gray (5Y 4/2), weak, massive bedded, slightly weathered with some FeO_2 staining, contains tightly packed, clast-supported gravels of Monterey and Franciscan Complex rocks, can also be logged as a very dense Clayey GRAVEL (GC). [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT]. 6-Feet: Gallon Bag sample 9-Feet: Gallon Bag sample No Groundwater





TEST PIT LOG

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Expect Excellence

Richmond Country Club
1 Markovich Lane,
Richmond, CA.
15693.000.000

Logged By: James Allen
Logged Date: January 10, 2019
Equipment: 313 CAT Excavator

Test Pit Number	Depth (ft.)	Description
T-5	0 – 1.5	Clayey SAND (SP-SC), mixture of very dark gray (2.5Y 3/1) clays and grayish brown (2.5Y 5/2) discarded bunker sands, clays are typically stiff (pp = 2.0 tsf), moist, sands are typically well sorted and loose. Sands and native clay mix extend to approximately 1.5 feet below ground surface at this time. [FILL].
	1.5 – 2.5	CLAY (CL) with some very fine-grained sand, very dark gray (2.5Y 3/1) at top grading down to dark gray (7.5YR 4/1), stiff to very stiff, moist, lightens in color at depth and grades into a more clayey B-Horizon [NATIVE A & B HORIZON SOIL PACKAGE].
	2.5 - 4	CONGLOMERATE, dark gray (5YR 4/1) to olive gray (5Y 4/2), weak, massive bedded, slightly weathered with some FeO_2 staining, moist, contains tightly packed, clast-supported gravels of Monterey chert, Tertiary Sandstone and Franciscan Complex red/green chert and graywacke, can also be logged as a very dense Clayey GRAVEL (GC). [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT].
		No Groundwater





ENGEO Expect Excellence	TEST PIT LOG	
Richmond Country Club 1 Markovich Lane, Richmond, CA. 15693.000.000	Logged By: James Allen Logged Date: January 10, 2019 Equipment: 313 CAT Excavator	
Test Pit Number	Depth (ft.)	Description
T-6	0 – 1.8	CLAY (CL) with some very fine-grained sand, very dark gray (2.5Y 3/1) at top grading down to dark gray (7.5YR 4/1), stiff to very stiff, moist, lightens in color at depth and grades into a more clayey B-Horizon, gradational with underlying deposit [NATIVE A & B HORIZON SOIL PACKAGE].
	1.8 – 8.2	Sandy CLAY (CL), light yellowish brown (10YR 6/4) at top of unit, yellowish red (5YR 5/6) in middle and grades to brown (7.5YR 5/3) to dark reddish brown (2.5YR 5/4) at base above gravel/conglomerate, hard (pp > 4.5 tsf), moist, sandy-clay/clayey-sand younger Pleistocene deposit, typically sits stratigraphically above coarse gravels (See T-1). [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT].
	8.2 – 9	CONGLOMERATE, dark gray (5YR 4/1) to olive gray (5Y 4/2), weak, massive bedded, slightly weathered with some FeO_2 staining, moist, contains tightly packed, clast-supported gravels of Monterey chert, Tertiary Sandstone and Franciscan Complex red/green chert and graywacke, can also be logged as a very dense Clayey GRAVEL (GC). Overlies Garrity Member of Contra Costa Group bedrock in this area. [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT]. No Groundwater
		 

TEST PIT LOG

Richmond Country Club 1 Markovich Lane, Richmond, CA. 15693.000.000	Logged By: James Allen Logged Date: January 10, 2019 Equipment: 313 CAT Excavator

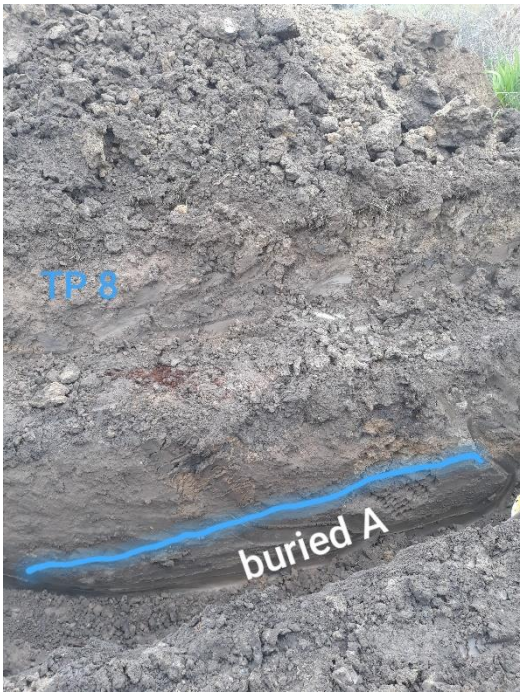
Test Pit Number	Depth (ft.)	Description
T-7	0 – 1.7	CLAY (CL) with some very fine-grained sand, very dark gray (2.5Y 3/1) at top grading down to dark gray (7.5YR 4/1), stiff to very stiff, moist, plastic, lightens in color at depth and grades into a more clayey B-Horizon, gradational with underlying deposit [NATIVE A & B HORIZON SOIL PACKAGE].
	1.7 - 12	Sandy CLAY (CL), light yellowish brown (10YR 6/4) at top of unit, yellowish red (5YR 5/6) in middle and grades to brown (7.5YR 5/3) to dark reddish brown (2.5YR 5/4) at base above gravel/conglomerate, hard (pp > 4.5 tsf), moist, sandy-clay/clayey-sand younger Pleistocene deposit, typically sits stratigraphically above coarse gravels (See T-1), bucket teeth of excavator scraping on top of conglomerate/gravels at 12-feet. [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT]. 5-Feet: One-Gallon bag collected No Groundwater 

TEST PIT LOG

Richmond Country Club 1 Markovich Lane, Richmond, CA. 15693.000.000	Logged By: James Allen Logged Date: January 10, 2019 Equipment: 313 CAT Excavator

Test Pit Number	Depth (ft.)	Description
T-8	0 – 5.7	Clayey SILT (ML) with some gravels, sand zones and woody debris, mottled grayish brown (2.5Y 5/2), very dark gray (2.5Y 3/1) to light reddish brown (5YR 6/4), loose to medium dense/stiff (pp = 2.0 tsf), moist to very moist, contains partially decomposed wood debris, sticks and brush, bunker sands and golf course lawn cuttings [ARTIFICAL FILL (AF) - DISTURBED].
	5.5 - 7	CLAY (CL) with some very fine-grained sand, very dark gray (2.5Y 3/1) at top grading down to dark gray (7.5YR 4/1), hard (pp=4.5 tsf), moist, plastic, lightens in color at depth and grades into a more clayey B-Horizon buried below Artificial Fill. [NATIVE A & B HORIZON SOIL PACKAGE]. No Groundwater





TEST PIT LOG

Richmond Country Club 1 Markovich Lane, Richmond, CA. 15693.000.000	Logged By: James Allen Logged Date: January 10, 2019 Equipment: 313 CAT Excavator

Test Pit Number	Depth (ft.)	Description
T-9	0 - 1	CLAY (CL) with some very fine-grained sand, very dark gray (2.5Y 3/1) at top grading down to dark gray (7.5YR 4/1), very stiff (pp = 3.5 tsf), moist, plastic [NATIVE A HORIZON SOIL].
	1 - 9	Sandy CLAY (CL), light yellowish brown (10YR 6/4) at top of unit, yellowish red (5YR 5/6) in middle and grades to brown (7.5YR 5/3) to dark reddish brown (2.5YR 5/4) at base above gravel/conglomerate, very stiff to 3-feet below ground surface, then hard (pp > 4.5 tsf) from 3 feet and deeper, moist, sandy-clay/clayey-sand younger Pleistocene deposit. [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT].
	9 - 10	CONGLOMERATE, dark gray (5YR 4/1) to olive gray (5Y 4/2), weak, massive bedded, slightly weathered with some FeO_2 staining, moist, contains tightly packed, clast-supported gravels of Monterey chert, Tertiary Sandstone and Franciscan Complex red/green chert and graywacke, can also be logged as a very dense Clayey GRAVEL (GC). Overlies Garrity Member of Contra Costa Group bedrock in this area. [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT]. 3-Feet: One Gallon bag sample No Groundwater  

TEST PIT LOG

Richmond Country Club
1 Markovich Lane,
Richmond, CA.
15693.000.000

Logged By: James Allen
Logged Date: January 10, 2019
Equipment: 313 CAT Excavator

Test Pit Number	Depth (ft.)	Description
T-10	0 – 5.8	Clayey SILT (ML) with some gravels, sand zones and woody debris, mottled grayish brown (2.5Y 5/2), very dark gray (2.5Y 3/1) to light reddish brown (5YR 6/4), loose to medium dense/stiff (pp = 2.0 tsf), moist to very moist, contains partially decomposed wood debris, sticks and brush, bunker sands and golf course lawn cuttings [ARTIFICAL FILL (AF) - DISTURBED].
	5.8 – 6.8	CLAY (CL) with some very fine-grained sand, very dark gray (2.5Y 3/1) at top grading down to dark gray (7.5YR 4/1), very stiff (pp = 3.5 tsf), moist, plastic [NATIVE A HORIZON SOIL].
	5.8 - 13	CONGLOMERATE, dark gray (5YR 4/1) to olive gray (5Y 4/2), weak, massive bedded, slightly weathered with some FeO_2 staining, moist, contains tightly packed, clast-supported gravels of Monterey chert, Tertiary Sandstone and Franciscan Complex red/green chert and graywacke, can also be logged as a very dense Clayey GRAVEL (GC). Overlies Garrity Member of Contra Costa Group bedrock in this area. [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT]. No Groundwater 12-Feet: One Gallon bag sample





TEST PIT LOG

Richmond Country Club 1 Markovich Lane, Richmond, CA. 15693.000.000	Logged By: James Allen Logged Date: January 10, 2019 Equipment: 313 CAT Excavator

Test Pit Number	Depth (ft.)	Description
T-11	0 - 5	CLAY (CL) with fine-grained sand and gravels, mottled very dark gray (2.5Y 3/1) at top of mass, and reddish brown (2.5 YR 4/4), soft, wet, slicken-sided slide plane low-angle dip down-hill, undulating in elevation from 4.5-feet to 5-feet deep in test pit wall [LANDLSIDE DEBRIS].
	5 – 8.5	CLAYSTONE and SANDSTONE, olive gray to dark gray (5Y 4/2 and 4/1), very weak, moderately weathered, thin bedded sandstone and claystone with attitude of N50^{o}W, 57°NE, very closely sheared with polished slick surfaces throughout, prominent shears N25^{o}W, 47°NE [GARRITY MEMBER OF CONTRA COSTA GROUP BEDROCK].
		Ground Water at 4-5 feet below ground surface.







TEST PIT LOG

Richmond Country Club 1 Markovich Lane, Richmond, CA. 15693.000.000	Logged By: James Allen Logged Date: January 10, 2019 Equipment: 313 CAT Excavator

Test Pit Number	Depth (ft.)	Description
T-12	0 – 2.9	CLAY (CL) with some very fine-grained sand, very dark gray (2.5Y 3/1) at top grading down to dark gray (7.5YR 4/1), stiff to very stiff, moist, plastic, lightens in color at depth and grades into a more clayey B-Horizon, gradational with underlying deposit [NATIVE A & B HORIZON SOIL PACKAGE].
	2.9 – 6.5	CONGLOMERATE, dark gray (5YR 4/1) to olive gray (5Y 4/2), weak, massive bedded, slightly weathered with some FeO_2 staining, moist, contains tightly packed, clast-supported gravels of Monterey chert, Tertiary Sandstone and Franciscan Complex red/green chert and graywacke, can also be logged as a very dense Clayey GRAVEL (GC). Overlies Garrity Member of Contra Costa Group bedrock in this area. [MONTEZUMA FORMATION - PLEISTOCENE ALLUVIAL FAN DEPOSIT]. No Groundwater







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E.2 - Paleontological Records Search

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Kenneth L. Finger, Ph.D.
Consulting Paleontologist

18208 Judy St., Castro Valley, CA 94546-2306 510.305.1080 klfpaleo@comcast.net

September 18, 2019

Dana DePietro
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

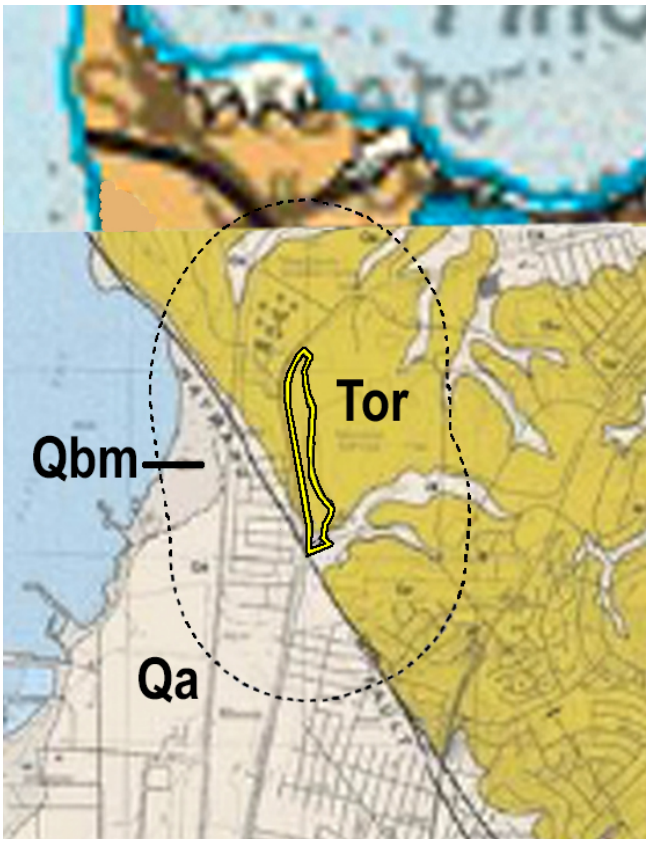
Re: Paleontological Records Search for Records Search for the Richmond Country Club Project (2121.0012), Richmond, Contra Costa County

Dear Dr. DePietro:

As per your request, I have performed a paleontological records search for the Richmond Country Club project in northwest Richmond. The project site is between Giant Highway to the west and Country Club Vista Park to the east. Its PRS location is NW¼, SW¼, Sec. 30, T2N, R4W, Richmond quadrangle (USGS 7.5-series topographic map). It appears from Google Earth imagery that the project site had been cleared of forest during construction of the Giant Highway.

Geologic Units

The adjacent geologic map shows a marked discontinuity because it adjoins parts of those by Blake et al. (2000) and Dibblee and Minch (2005), which are of different scales. The surface of the area of the project site (yellow outline at center) consists mostly of the Orinda Formation (Tor) and has some young alluvium (Qa) at its southern end. The surrounding half-mile search area (dashed outline) also has bay mud (Qbm) to the west of the site. Both the alluvium and bay mud are Holocene in age and therefore are too young to be fossiliferous; hence, only the Miocene Orinda Formation is of concern here.



Geologic Map Legend

Qa Alluvium (Holocene)
Qbm Bay mud (Holocene)
Tor Orinda Fm. (Miocene)

UCMP Records Search

The records search was performed on the University of California Museum of Paleontology database with the focus on the Orinda Formation. It revealed 23 vertebrate localities in Contra Costa County plus three in Alameda County; those nearest to the project site are more than 8 miles to the southeast. Some of the 140 vertebrate specimens recovered are documented in scientific publications by Merriam (1913), Stirton (1939), Woodburne et al. (1981), and Poust (2007). Taxa identified in the composite assemblage are listed below and represent the Clarendonian NALMS (North American Land Mammal Stage), which spans the interval of 13.6–10.3 million years BP.

Miocene Vertebrates from the Orinda Formation in the UCMP Collection

Class Reptilia (reptiles)
- Order Testudines (turtles, tortoises)
  - Family Testudinidae
    - *Hesperotestudo*
- Order Osteichthyes (boney fish)
  - Family Lepisosteidae (gars)
    - *Lepisosteus*
  - cf. Family Lutjanidae (snappers)
  - Family Cyprinidae (carps, minnows, barbs)

Class Aves (birds)

Class Mammalia
- Order Lagomorpha
  - Family Leporidae (rabbits, hares)
    - cf. *Hypolagus*
- Order Rodentia
  - Family Cricetidae (mice, rats, voles, etc.)
    - *Copemys*
    - cf. *Pliosaccomys*
- Order Carnivora (carnivores)
  - Family Felidae (cats)
    - *Barbourofelis* (false saber-tooth cat)
  - Family Mustelidae (weasels, badgers, otters)
- Order Cetacea (whales, dolphins)
  - Family Cetotheriidae (extinct baleen whales)
- Order Praeungulata (sirenians)
  - Family Desmostylidae
    - *Desmostylus*
- Order Eulipotyphla
  - Family Soricidae (shrews)
    - *Sorex*
- Order Proboscidea (elephants)
  - Family Gomphotheriidae
    - *Gomphotherium simpsoni*
  - Family Mammutidae (mastodons)
- Order Perissodactyla (odd-toed ungulates)
  - Family Equidae (horses)
    - *Hipparion* cf. *H. mohavense.*
    - *Nannippus tehonensis*
    - *Pliohippus* cf. *P leardi*
  - Family Rhinocerotidae (rhinoceroses)
    - *Aphelops*?
- Order Artiodactyla (even-toed ungulates)
  - Family Camelidae (camels)
    - *Procamelus*
  - Family Dromomerycidae
    - *Cranioceras*
  - Family Merycoidodontidae (oreodonts)
    - *Ticholeptus*

In addition, plants were collected from the Orinda Formation at five Caldecott Tunnel localities.

Remarks and Recommendations

The project site is almost exclusively on the Orinda Formation, which has a high sensitivity and moderate potential for significant paleontological resources. Although a preconstruction paleontological walkover of the site is not in order because the surface is disturbed, I recommend paleontological monitoring of project-related excavations. Should any significant fossils (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants) be unearthed, the construction crew should not attempt to remove them**,** as they could be extremely fragile and therefore prone to crumbling; instead, all work in the immediate vicinity of the discovery should be diverted at least 15 feet from the find until a paleontological monitor or professional paleontologist has assessed the find and, if deemed significant, salvaged it in a timely manner. Recovered

fossils should be deposited in an appropriate repository, such as the UCMP, where they will be properly curated and made accessible for future study.

Sincerely,

Ken Finger

References Cited

Blake, M.C., Graymer, R.W., Jones, D.L., and Soule, A., 2000, Geologic map and map database of parts of Marin, San Francisco, Alameda, Contra Costa, and Sonoma Counties, California, U.S. Geological Survey Miscellaneous Field Studies Map MF-2337, scale 1:75,000.

Dibblee, T.W., and Minch, J.A., 2005, Geologic map of the Richmond quadrangle, Contra Costa & Alameda Counties, California: Dibblee Geological Foundation, Dibblee Foundation Map DF-147, scale 1:24,000.

Merriam, J.C. 1913. Vertebrate fauna of the Orindan and Siestan beds in middle California. University of California Publications, Bulletin of the Department of Geological Sciences 7: 359–372.

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Stirton, R.A. 1939. Cenozoic mammal remains from the San Francisco Bay region. University of California Publications, Bulletin of the Department of Geological Sciences 24 (13): 411–420.

Woodburne, M.O., MacFadden, B.J., and Skinner, M.F., 1981. The North American "*Hipparion*" datum and implications for the Neogene of the Old World. Geobios 14(4): 493–524.

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E.3 - Updated Site Boundary Memo

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January 29, 2020

Project No.
15693.000.000

Mr. Paul Manyisha
MLC Holdings, Inc.
2603 Camino Ramon, Suite 140
San Ramon, CA 94583

Subject: Richmond County Club – 1 Markovich Lane
Richmond, California

UPDATED SITE BOUNDARY
GEOTECHNICAL AND ENVIRONMENTAL REPORTS

References:

1. ENGEO; Preliminary Geotechnical Exploration, Richmond Country Club, Richmond, California; January 28, 2019; Project No. 15693.000.000
2. ENGEO; Phase I Environmental Site Assessment, Richmond Country Club, Richmond, California; December 28, 2019, 2019; Project No. 15693.000.000
3. ENGEO; Phase II Environmental Site Assessment, Richmond Country Club, Richmond, California; January 31, 2019; Project No. 15693.000.000
4. ENGEO; Fault Exploration Report, Richmond Country Club, Richmond, California; May 28, 2019; Project No. 15693.000.000

Dear Mr. Manyisha:

As requested, we have evaluated the updated study area of the subject project located at 1 Markovich Lane, Richmond, California.

We understand that the project area has been changed since the original publication of our referenced reports. The latest site plan, attached, show minor increases in area on the eastern portion of the project site, encompassing a portion of the existing golf course. This increases the acreage from approximately 24 acres to 27 acres. Based on review of the referenced reports and site conditions, the findings of the referenced reports remain valid for this new site plan.

If you have any questions concerning this letter, or if we can be of further service to you, please contact us.

Sincerely,

ENGEO Incorporated

Jerry Chen

Steve Harris, GE

REGISTERED PROFESSIONAL ENGINEER
STEVE HARRIS
No. 2804
GEOTECHNICAL
STATE OF CALIFORNIA

Scott Johns, PE

jc/sh/sj/jf

Attachment: Site Plan

ATLAS ROAD

WOOD GLEN DRIVE

SUBDIVISION 8234

RICHMOND PARKWAY

CLUB HOUSE

MARKOVICH LANE

RICHMOND COUNTRY CLUB
405-050-019-0

NEW BOUNDARY

OLD BOUNDARY

PROJECT SITE
25.91± AC (OLD)
27.05± AC (NEW)

GIANT ROAD

COLLINS AVENUE

GIANT HIGHWAY

AT & SF RAILROAD

GIANT HIGHWAY

BOUNDARY OVERLAY
AERIAL EXHIBIT
RICHMOND COUNTRY CLUB

CITY OF RICHMOND CONTRA COSTA COUNTY CALIFORNIA

0' 150' 450' 600'

SCALE: 1" = 150'

DATE: DECEMBER 2019

cbg
CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS
SAN RAMON ▪ (925) 866-0322
SACRAMENTO ▪ (916) 375-1877
WWW.CBANDG.COM

12/13/2019 10:48 AM

F:\2924-010\ACAD\EXHIBITS\2924-010_BOUNDARY OVERLAY AERIAL EXHIBIT.DWG

E.4 - Fault Exploration Report

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RICHMOND COUNTRY CLUB
1 MARKOVICH LANE
RICHMOND, CALIFORNIA

FAULT EXPLORATION REPORT

Submitted to
Mr. Charles McKeag
MLC Holdings Inc.
2603 Camino Ramon, Suite 140
San Ramon, CA 94583

Prepared by
ENGEO Incorporated

May 28, 2019

Project No.
15693.000.000

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ENGEO
Expect Excellence

Project No.
15693.000.000

May 28, 2019

Mr. Charles McKeag
MLC Holdings Inc.
2603 Camino Ramon, Suite 140
San Ramon, CA 94583

Subject: Richmond Country Club
1 Markovich Lane
Richmond, California

FAULT EXPLORATION REPORT

Dear Mr. McKeag:

With your authorization, we have completed this fault evaluation report for the Richmond Country Club property located in Richmond, California. The accompanying report presents the findings of our field exploration and reconnaissance mapping, paper-study findings and conclusions regarding geologic hazards at the site.

We are pleased to have been of service to you on this project and are prepared to consult further with you and your design team as the project progresses.

Sincerely

ENGEO Incorporated

Ryan Rud

J. Brooks Ramsdell, CEG

CERTIFIED ENGINEERING GEOLOGIST
J. BROOKS RAMSDELL
No. 2356
STATE OF CALIFORNIA

Jeff Fippin, GE

REGISTERED PROFESSIONAL ENGINEER
JEFFREY A. FIPPIN
No. 2631
GEOTECHNICAL
STATE OF CALIFORNIA

rr/jbr/jf/jf

TABLE OF CONTENTS

LETTER OF TRANSMITTAL

1.0 INTRODUCTION 1

1.1 PURPOSE AND SCOPE 1
1.2 SITE DESCRIPTION 1
1.3 PROPOSED DEVELOPMENT 1

2.0 FINDINGS 1

2.1 GEOLOGY 1
2.2 FAULTING AND SEISMICITY 2
2.2.1 Hayward Fault 2
2.2.2 Seismicity 2
2.2.3 Alquist-Priolo Earthquake Hazard Zone Act 3
2.3 BACKGROUND AND PREVIOUS EXPLORATIONS 3
2.3.1 ENGEO, 2005 3
2.3.2 ENGEO, 2019 3
2.4 CURRENT INVESTIGATION SCOPE 4
2.4.1 Aerial Photograph Interpretation 4
2.4.2 Geologic Mapping 4
2.4.3 Exploratory Trench Excavation 4
2.5 SITE SOILS AND GEOLOGY 4
2.5.1 Artificial Fill (Qaf) 4
2.5.2 Surficial Soil 5
2.5.3 Holocene Alluvium (Qal) 5
2.5.4 Pleistocene Alluvium (Qal) 5
2.6 TRENCH LOGGING 5

3.0 CONCLUSIONS AND RECOMMENDATIONS 6

4.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS 6

SELECTED REFERENCES

FIGURES

APPENDIX A – Trench Log (2019)

APPENDIX B – Radiocarbon Dating Result, Beta Analytical, Inc.

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of the fault exploration is to evaluate subsurface conditions and to investigate the possible existence of Holocene-age (<11,700 year old) ground rupture related to fault activity within the Alquist-Priolo Earthquake Hazard Zone that overlaps the south-southwestern portion of the proposed development area. This study included the following scope of services:

- Review of published geologic maps and literature pertinent to the site.
- Review of aerial photographs.
- Review of our previous studies at the site as well as studies by others.
- Excavation and detailed geologic logging of one exploratory trench.
- Site reconnaissance to identify appropriate locations for the exploratory trench.
- Preparation of this report summarizing our findings, conclusions, and recommendations to assist in site planning.

We prepared this report exclusively for you and your design team consultants. ENGEO should review any changes made in the character, design or layout of the development to modify the conclusions and recommendations contained in this report, as necessary. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent.

1.2 SITE DESCRIPTION

The roughly 23-acre property (Property) is a compilation of two parcels with separate Assessor's Parcel Numbers (APN); the southern parcel is APN 405-050-006 and the northern parcel is APN 405-050-019. The Property is bordered by the Atchison Topeka and Santa Fe Railroad to the west and north, and by the Richmond Country Club Golf Course to the east and south. The surrounding area of Richmond was once occupied by the San Pablo Oil Tank Farm. The fault trench exploration was set in the southern portion of the site to the west of the parking lot within the Alquist-Priolo Earthquake Fault Zone.

1.3 PROPOSED DEVELOPMENT

Although no formal plans are available at this time, conceptual plans prepared by CBG Civil Engineers (November, 2018) show the proposed development to include approximately 90 single-family residential lots with interior paved roadways, a sound wall, bio-retention ponds and all-weather emergency vehicle access road.

2.0 FINDINGS

2.1 GEOLOGY

The region is within the Coast Range Province of California, an area dominated by northwest-trending valleys and mountain ranges. The San Francisco Bay is located in a fault-bound, elongated structural trough that has been filled with a sequence of Quaternary age

sedimentary deposits derived from the surrounding Coast Ranges. According to mapping by Graymer (1994) shown in Figure 3, the subject site is located on undivided quaternary deposits (Qu), which consist of alluvial deposits underlain by the Orinda Formation and Franciscan Complex.

2.2 FAULTING AND SEISMICITY

The southern portion of the development site is located within a State of California Alquist-Priolo Earthquake Fault Zone for the active Hayward fault (Figure 5). The main creeping trace of the Hayward fault is mapped by the California Geological Survey (CGS) as passing just to the southwest of the southwestern property edge of the site. A recently active fault trace is defined by the state of California as displaying signs of displacement within the last 11,700 years as stated in the California Geological Survey Special Publication 42, Revised 2018.

2.2.1 Hayward Fault

The Hayward fault is one of the main branches of the San Andreas fault, displaying predominantly right-lateral displacement. The approximately 60-mile-long fault extends from San Jose along the East Bay Hills to Point Pinole and possibly right stepping and passing strain to the active and en-echelon Rodgers Creek Fault system (Lienkaemper, 2008). Although much of the area surrounding the fault system has experienced rapid urbanization over the last several decades, many geomorphic features indicative of strike-slip faulting can still be observed along the fault trace, such as right-laterally offset drainages, shutter ridges, sag ponds, and rift or hillside valleys.

The Hayward fault has been extensively studied and the active creeping trace is well defined in the site vicinity (Lienkaemper, 2008). The CGS compiled available published fault mapping, consultant investigations, and creep survey data (Smith, 1980), as part of the preparation of the Earthquake Fault Zone map of the Richmond Quadrangle (CGS, 1982). In the site vicinity, the CGS map identified a single creeping strand of the Hayward Fault, located approximately 85 feet west of the southwest corner of the site, passing through the intersection of Grant Road and Giant Highway, as shown on Figure 5.

The USGS Quaternary Fold and Fault Database (QFFD) is a nationwide GIS-based database that identifies fault locations and classifies faults based on estimated age. In California, the QFFD is jointly maintained by the USGS and the California Geological Survey (CGS). The QFFD shows the active Hayward fault at approximately the same location as the CGS Earthquake Fault Zone map. Lienkaemper (2008), produced a digitized database that presents his interpretation of the locations of recently active traces of the Hayward fault based on geomorphic expression, recent creep, and fault investigations. Lienkaemper places the active trace similarly to the west of the site. This strand of the Hayward fault shows evidence of creep up to 3.5 ±0.5 mm/yr (Borchardt, 1998).

2.2.2 Seismicity

The San Francisco Bay Area has experienced numerous significant earthquakes in recorded history. In 1868, a major earthquake occurred along the Hayward fault causing a nearly 27-mile-long surface rupture and a reported displacement of up to 3 feet.

The 2014 Working Group on California Earthquake Probabilities evaluated the regional seismicity of the Bay Area and published their results as The Uniform California Earthquake

Rupture Forecast, Version 3 (UCERF 3). The Working Group periodically attempts to summarize seismic risk in California with time-dependent earthquake rupture forecasts, in which the probabilities of future events are conditioned upon the dates of previous earthquakes. According to UCERF 3, there is an aggregated 72 percent probability of a Moment Magnitude (M_W) 6.7 or greater earthquake on an active Bay Area fault over the next 30 years. The probability of a M_W 6.7 or greater earthquake on the Hayward fault and San Andreas fault are 33 and 22 percent, respectively, over the next 30 years.

2.2.3 Alquist-Priolo Earthquake Hazard Zone Act

The Alquist-Priolo program requires the State Geologist, via the California Geological Survey (CGS) to establish regulatory zones around fault traces that are considered active and sufficiently well defined to create the potential for surface fault rupture hazards to structures. A fault trace is considered “active” if it is judged to have had identifiable surface rupture during the Holocene (defined by the CGS as the last 11,700 years). The State requires geological investigations prior to construction of new structures within Earthquake Fault hazard zones as described in CGS Special Publication 42 and Note 49. The policies and criteria of the State Mining and Geology Board with reference to the Alquist-Priolo Earthquake Fault Zoning Act are described in CGS Special Publication 42, Specific Criteria that include:

Appendix B Section 3603 (a): No structure for human occupancy, identified as a project under Section 2621.6 of the Act, shall be permitted to be placed across the trace of an active fault. Furthermore, as the area within fifty (50) feet of such active faults shall be presumed to be underlain by active branches of that fault unless proven otherwise by an appropriate geologic investigation and report prepared as specified in Section 3603(d) of this subchapter, no such structures shall be permitted in this area.

2.3 BACKGROUND AND PREVIOUS EXPLORATIONS

2.3.1 ENGEO, 2005

In 2005, ENGEO produced a preliminary geotechnical exploration report at the Richmond Country Club for Centex Homes. The scope included review of geotechnical and geological literature and maps, review of aerial photographs, review of geotechnical reports by others, a site reconnaissance, and preparation of the report. Based on the collected data, it was recommended that a detailed subsurface study be conducted, including trenching and test pit investigations as well as borings or cone penetration tests.

2.3.2 ENGEO, 2019

In 2019, ENGEO completed a second preliminary geotechnical exploration report for MLC. The scope included a site reconnaissance, a review of published geologic maps, review of readily available geotechnical reports for the site, conducting twelve test pits on site and logging of subsurface conditions, and preparation of a report discussing potential hazards. The test pit logs show no evidence of faulting.

2.4 CURRENT INVESTIGATION SCOPE

2.4.1 Aerial Photograph Interpretation

We reviewed aerial photographs from 1939 through present, listed in the References. The aerial photographs show that the property remained relatively unchanged in that period. During that time, the site was an unused portion of the Richmond Country Club. The aerial photos showed two small areas where the grounds were disrupted. We have interpreted these to be small, undocumented fills, where soil mixed with landscape clippings were placed and possibly buried. Additionally, we did not identify any geomorphic expression in the aerial photos that suggests active faulting within the boundary of the planned development.

2.4.2 Geologic Mapping

Figure 2 presents our interpretation of site soil conditions, based on site reconnaissance, surface geologic mapping, photo review, and our 2019 exploratory trenching.

2.4.3 Exploratory Trench Excavation

The location of trench exploration was intended to cover the Earthquake Fault Zone that crosses the south-southwestern portion of the proposed development. Our fault exploration was performed between April 15, 2019, and through April 22, 2019.

We excavated a total of approximately 310 feet of trench with a tracked excavator to an average depth of 10 feet. The trench was cut vertically without benches and was shored for safety. Subsequently, we cleaned the north wall of the trench of smeared materials, and our geologists logged the trench sidewall. We backfilled the trench once logging was complete.

The purpose of the trench excavation was to expose the in-situ soil and bedrock so that they could be closely examined for evidence of recent fault displacement. The geologic logging process included description of soil color, estimated grain size, structure and interpretation of geologic features such as development of soil weathering profiles, depositional layering and contacts between differing soil layers. The geologic log of the trench is included in Appendix A and detailed descriptions are included in Section 2.6.

Soil features described on the log include the soil color, the relative development of blocky structure, the relative accumulation of translocated clay as films on soil grains and fracture surfaces, and the accumulation of pedogenic (weathering-derived) manganese oxides. We collected three samples for radiocarbon dating by Beta Analytic (Appendix B).

2.5 SITE SOILS AND GEOLOGY

The following section presents a summary of trench soil conditions.

2.5.1 Artificial Fill (Qaf)

The uppermost 5 to 6 inches of the surface soil was observed to be disturbed by past site use. Furthermore, several existing backfilled utility trenches up to 3 feet deep crossed the trench and are shown on the trench log in Appendix A.

2.5.2 Surficial Soil

Surficial soil consisting of very dark gray clayey silt interpreted to be an organic surficial soil (A-Horizon), approximately 1 foot thick with disturbance of the upper 5 to 6 inches and contains abundant rootlets. This is in gradational contact with the underlying soil horizon that consists of a very dark grayish brown sandy clay with strong iron oxide (FeO2) mottling and blocky pedogenic structures and translocated clay films interpreted to be a B-Horizon. This soil horizon also contains abundant rootlets.

2.5.3 Holocene Alluvium (Qal)

The surficial soil package is underlain by a thin, dark gray clay with strong iron oxide mottling interpreted to be a Holocene alluvial fan deposit.

2.5.4 Pleistocene Alluvium (Qal)

As described above, regional mapping by Graymer (1994) shows the site to be underlain by undivided Quaternary deposits. Mapping by Dibblee (1980), Wagner, (1978) and Witter (2006) show the site and surrounding areas generally east of the Hayward fault to be underlain by Miocene nonmarine sedimentary bedrock, generally dipping between 30 to 60 degrees to the east. The deposits exposed in the trench excavation appear to be nearly horizontally stratified clayey sand, with lenses of sand and clayey gravel typical of Pleistocene age alluvial fan deposits. The Pleistocene alluvium is interpreted to be underlain at depth by bedrock deposits.

2.6 TRENCH LOGGING

We excavated Trench T-1 for a length of approximately 310 feet. The trench trends approximately N81W from station 0+00 to 0+60 and N74E from station 0+60 through 3+10. The trench log is attached in Appendix A. We located the trench to extend through the Hayward Fault Zone Boundary. The trench was excavated to an average depth of 10 feet with shoring placed throughout the length of the trench. Several existing live and abandoned utility lines were located crossing the trench. We observed seepage in the B-Horizon, likely from landscape watering associated with the golf course. No groundwater was encountered in the trench.

The overall stratigraphy is generally flat-lying and slopes from east to west. We observed surficial soils consisting of a disturbed clayey silt A-Horizon that overlies a sandy clay B-Horizon. Below the B-Horizon is a dark gray Holocene fan deposit with strong iron oxide mottling. The Holocene alluvium and overlying B- and A-Horizons comprised the upper 5 feet of the trench on the east end and gradually thinned to approximately 2 feet on the west end of the trench. The lower contact of this deposit was a relatively sharp, undulating surface underlain by a well-cemented calcium carbonate-rich (hard pan) clayey sand in the upper 2 to 3 feet of the unit and grades into sandy clay at the bottom of the trench. Throughout the exposed portion of the unit within the trench, we observed several well-defined fluvial interfingering and cross-bedded lenticular structures consisting of silty over-bank deposits, gravelly channel deposits and sandy bar deposits. Translocated clays were visible within many of the lenses as matrix and coating gravels. Within the hard pan, we observed weakly to moderately developed blocky pedogenic structures. Throughout the unit, manganese oxide (MnO) was highly abundant and occurred as staining on pedogenic surfaces and as rootlet replacement. Occasional Manganese and calcium carbonate nodules were present as well. Based on the degree of soil development, we interpret these deposits to be Pleistocene-age alluvium. We collected three bulk samples of the Pleistocene alluvium near the base of the trench at the

location shown on the trench log. We submitted the samples for radiocarbon dating by Beta Analytical. The measured conventional radiocarbon ages ranged from 20,000 to 23,500 years before present (BP). The radiocarbon dating results are presented in Appendix B. These dates are consistent with an interpreted Pleistocene age for the alluvial deposits.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Published maps depict the location of the active, creeping trace of the Hayward Fault to be approximately 85 feet southwest of the site (Lienkaemper, 2008, CGS, 1982). In Trench T-1, we encountered un-faulted and un-deformed Pleistocene age alluvium for the entire length of the trench. Based on our review of published maps and aerial images and on the soil conditions exposed in Trench T-1, we conclude that there is no evidence of Holocene faulting on the portions of the property that are within the State Earthquake fault zone.

4.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This preliminary report is issued with the understanding that it is the responsibility of the owner to transmit the information and recommendations of this preliminary report to developers, owners, buyers, architects, engineers, and designers for the project so that the necessary steps can be taken by the contractors and subcontractors to carry out such recommendations in the field. The conclusions and recommendations contained in this preliminary report are solely professional opinions.

The professional staff of ENGEO strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. There are risks of earth movement and property damages inherent in land development. We are unable to eliminate all risks; therefore, we are unable to guarantee or warrant the results of our services.

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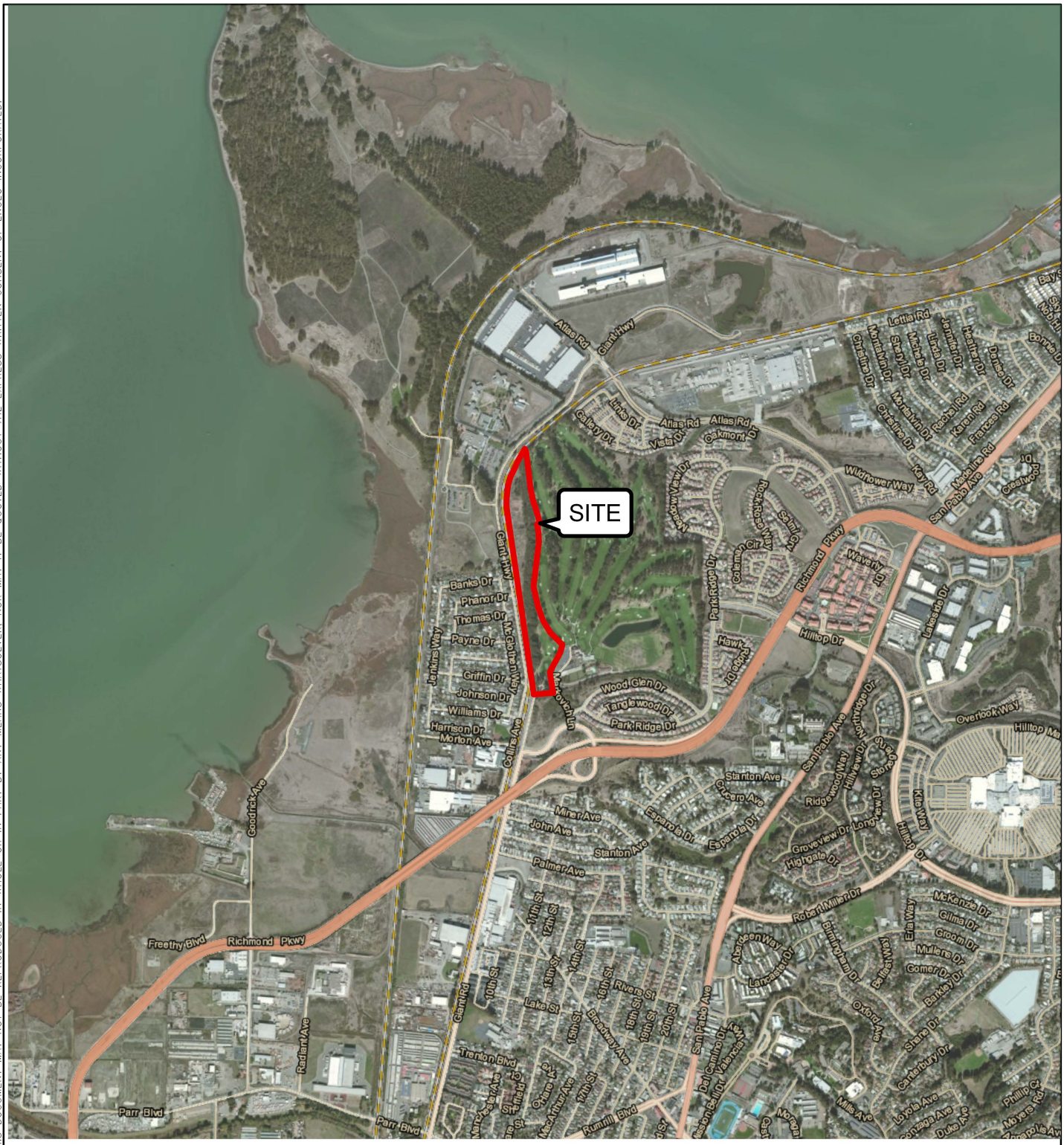
Various Aerial Photographs Reviewed; BUU-1958 12V-80 (5-15-1959), C-5750 290-23 and 24 (8-4-1939), CAS-65-130 15-32 and 53 (5-18-1965)



FIGURES

FIGURE 1: Vicinity Map
FIGURE 2: Site Plan
FIGURE 3: Regional Geologic Map
FIGURE 4: Regional Faulting and Seismicity Map
FIGURE 5: Alquist-Priolo Fault Zone Map

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BASEMAP SOURCE: ESRI MAPPING SERVICE

ENGEO Expect Excellence

VICINITY MAP

RICHMOND COUNTRY CLUB

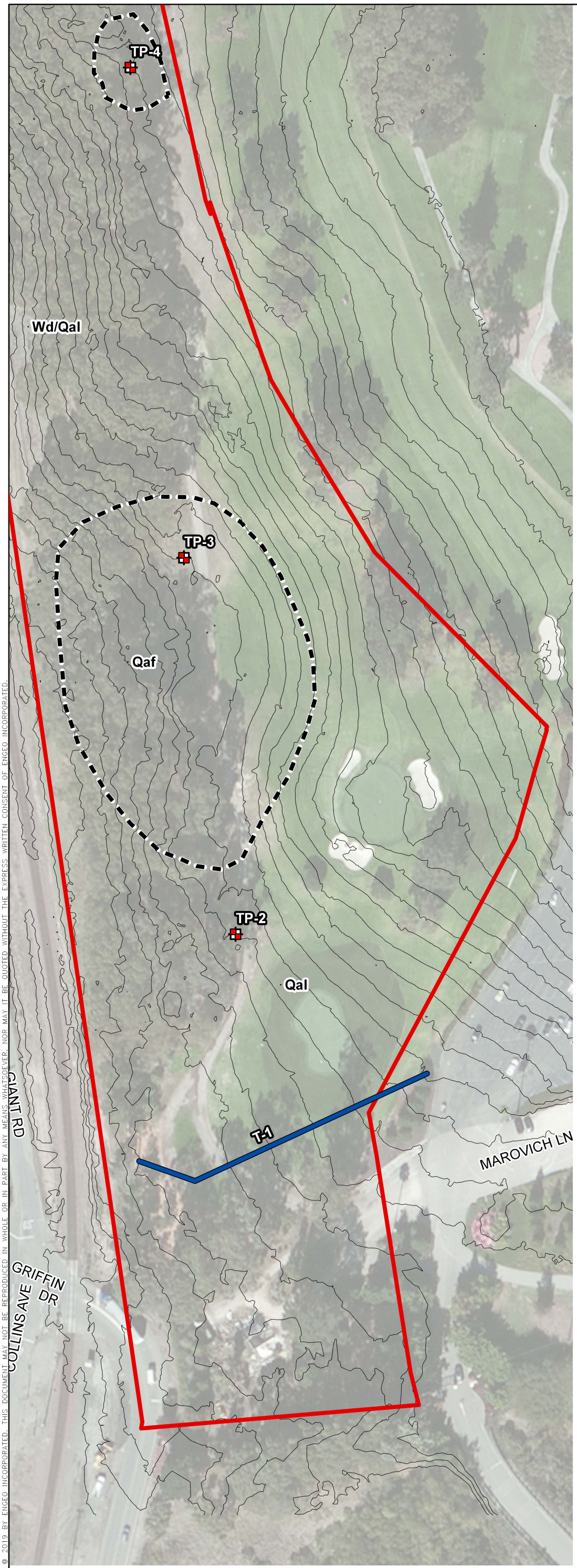
RICHMOND, CALIFORNIA

PROJECT NO. :	15693.000.000
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FIGURE NO. 1

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N

0 50 100

FEET

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- PROJECT SITE
- GEOLOGIC CONTACT
- T-1 TRENCH
- 1-TP-4 TEST PIT (ENGEO, 2018)
- **Qaf** EXISTING UNDOCUMENTED FILL
- **Wd/Qal** WOODY DEBRIS (WOOD CHIPS, TREE TRIMMINGS, ORGANICS, ETC...) OVERLYING NATIVE ALLUVIAL DEPOSITS (THICKNESS VARIES FROM 3 FEET TO LESS THAN 1 FOOT)
- **Qal** ALLUVIUM

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BASEMAP SOURCE: ESRI MAPPING SERVICE

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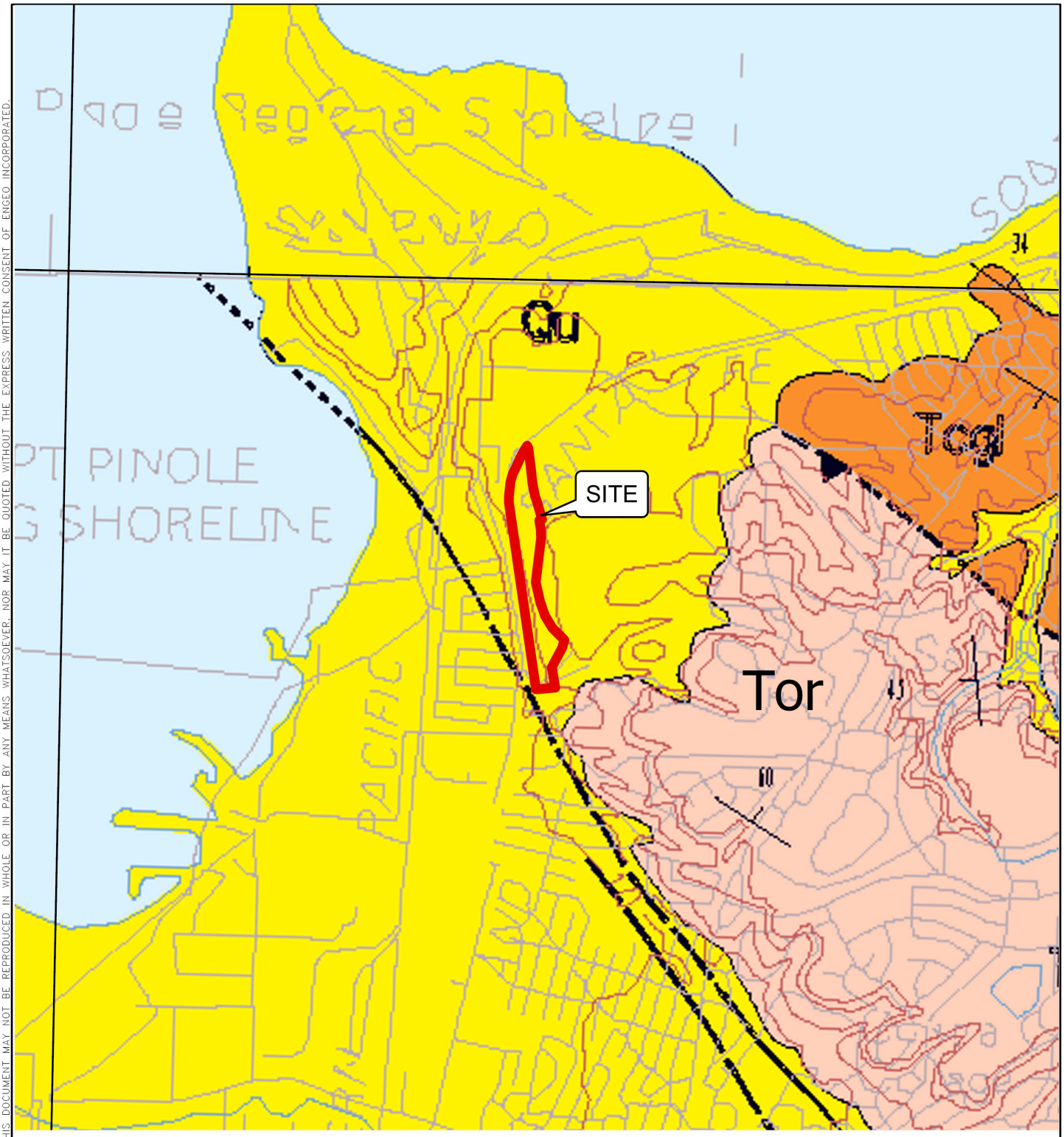
SITE PLAN
RICHMOND COUNTRY CLUB
RICHMOND, CALIFORNIA

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CHECKED BY: JBR

FIGURE NO. 2

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- Qu — UNDIVIDED QUATERNARY DEPOSITS
- Tor — ORINDA FORMATION
- Tcgl — CONGLOMERATE

N

0 1,000 2,000

FEET

BASEMAP SOURCE: GRAYMER 1994

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REGIONAL GEOLOGIC MAP

RICHMOND COUNTRY CLUB

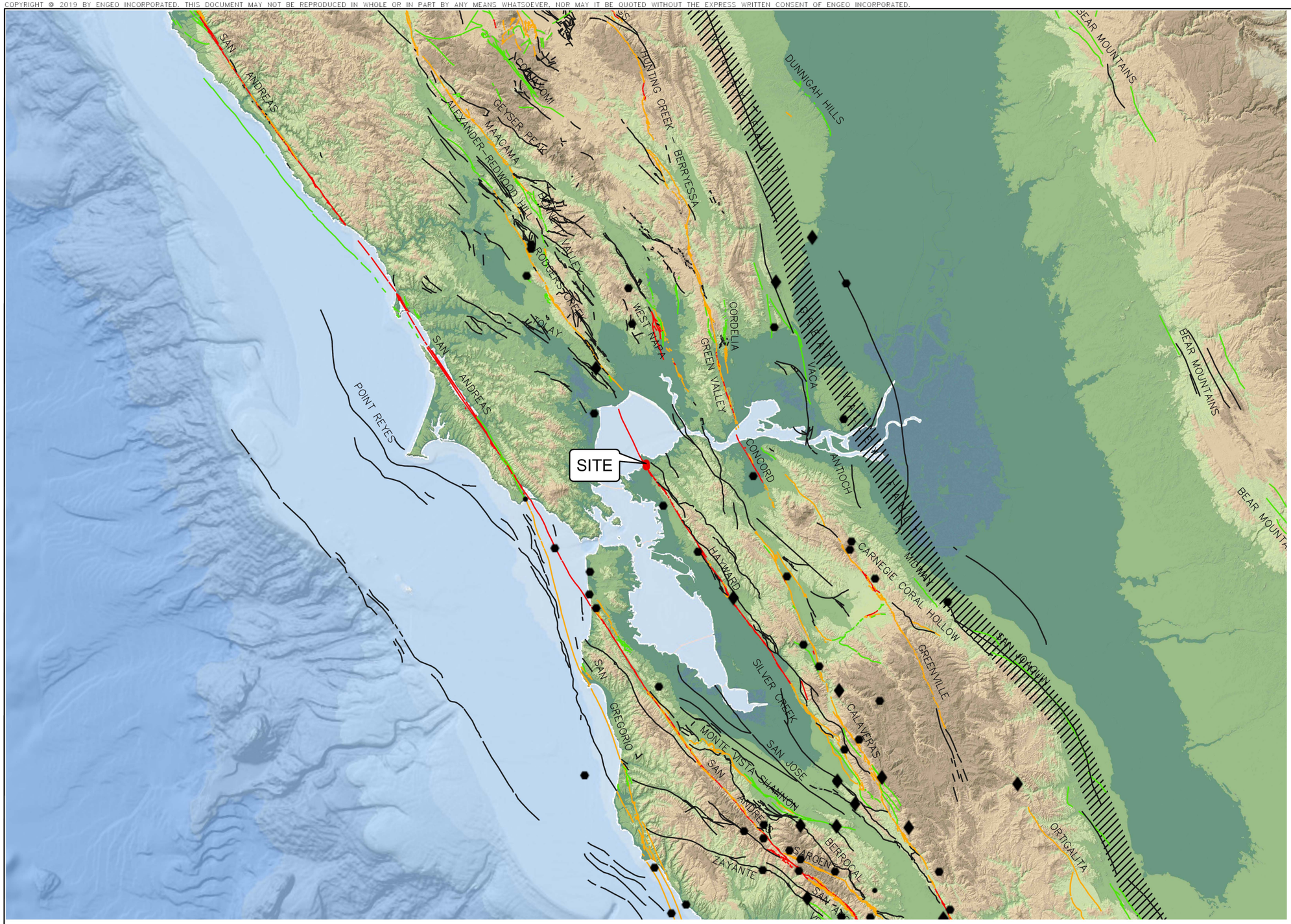
RICHMOND, CALIFORNIA

PROJECT NO. : 15693.000.000	FIGURE NO. 3
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N

0 7.5 15

Miles

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

EARTHQUAKE

- MAGNITUDE 7+
- MAGNITUDE 6-7
- MAGNITUDE 5-6

USGS QUATERNARY FAULTS

- HISTORICAL
- LATEST QUATERNARY
- LATE QUATERNARY
- UNDIFFERENTIATED QUATERNARY
- HISTORIC BLIND THRUST FAULT ZONE

BASE MAP SOURCE
ESRI, GARMIN, GEBCO, NOAA NGDC, AND OTHER CONTRIBUTORS
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATA SET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, 2018
U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800-PRESENT)

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REGIONAL FAULTING AND SEISMICITY

RICHMOND COUNTRY CLUB
RICHMOND, CALIFORNIA

PROJECT NO. : 15693.000.000
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FIGURE NO. 4

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N

0 1,000 2,000 FEET

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

Fault Traces

- Accurately Located
- Approximately Located
- Inferred
- Concealed

Earthquake Fault Zones

Zone boundaries are delineated by straight-line segments; the boundaries define the zone encompassing active faults that constitute a potential hazard to structures from surface faultingor fault creep such that avoidance as described in Public Resources Code Section 2621.5(a) would be required.

BASEMAP SOURCE: ESRI MAPPING SERVICE,
CALIFORNIA DEPARTMENT OF CONSERVATION, CALIFORNIA GEOLOGICAL SURVEY

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ALQUIST-PRIOLO FAULT ZONE MAP

RICHMOND COUNTRY CLUB
RICHMOND, CALIFORNIA

PROJECT NO. : 15693.000.000	FIGURE NO. 5
SCALE: AS SHOWN	
DRAWN BY: JV	CHECKED BY: SDH

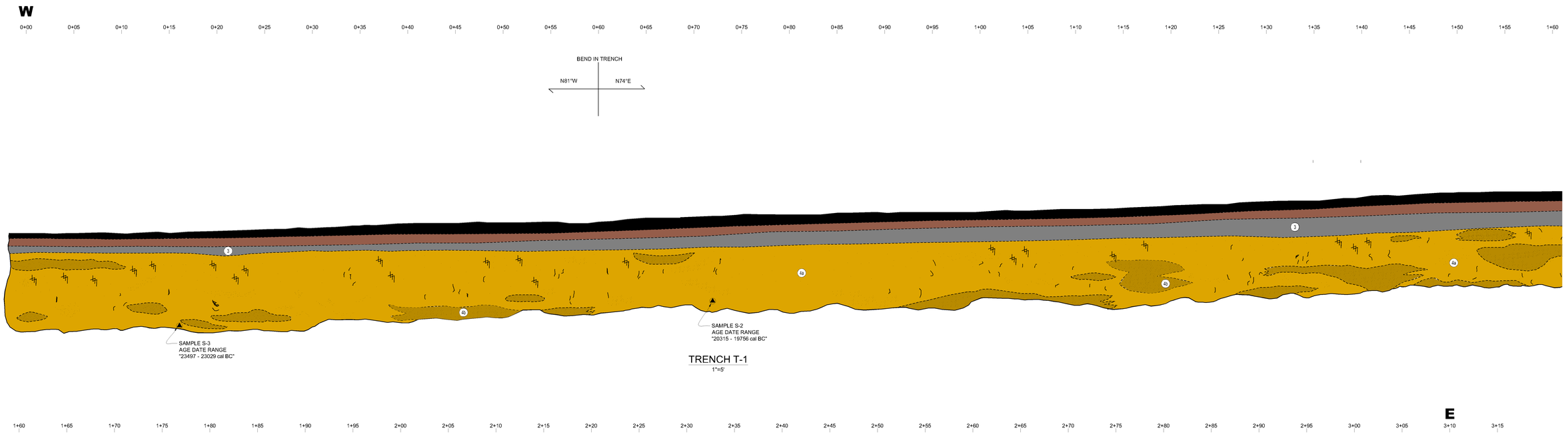
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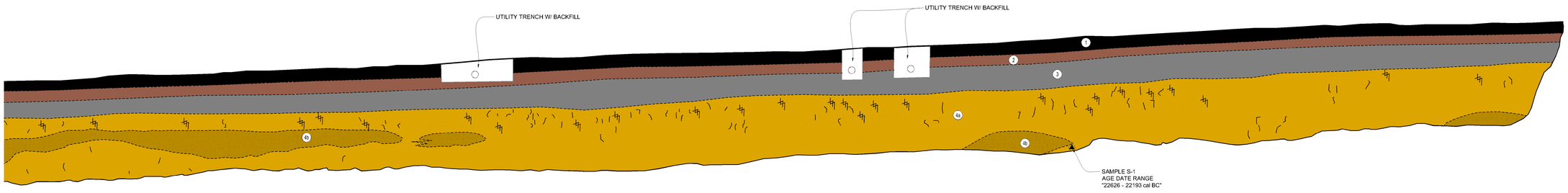


APPENDIX A

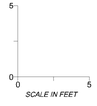
TRENCH LOGS (2019)



TRENCH T-1
1"=5'



TRENCH T-1 (CONTINUED)
1"=5'



(1) Clayey SILT (ML), very dark gray (2.5Y 3/1), very stiff, moist, abundant rootlets [Disturbed A-Horizon]

(2) Sandy CLAY (CL), very dark grayish brown (2.5Y 3/2), stiff, very moist to wet, iron oxide (FeO2) staining, abundant rootlets, [B-Horizon]

(3) CLAY w/ sand (CL), dark gray (2.5Y 4/1), stiff, very moist, strong iron oxide (FeO2) staining and mottling, rootlets [Holocene Fan Deposit]

(4) Clayey SAND (SP/SC) - Sandy CLAY (CL), olive brown (2.5Y 4/3), dense clayey sand and very stiff to hard clay, sand contains hard pan cement (CaCO3) with pedogenic structures and grades downward into sandy clay, abundant manganese oxide (MnO) staining on podogonic surfaces and as rootlet replacement, occasional manganese (Mn) and calcium carbonate (CaCO3) nodules, intermittent zones and pockets with increased abundance of fine to medium grain sand and/or pea gravel, contains abundant fluvial interfingering and cross-bedded lenticular deposits consisting of silty over-bank deposits/gravelly channel deposits/sandy bar deposits, occasional translocated clays within lenses as matrix and coatings on gravels [Pleistocene Deposit]

(4a) Clayey SAND/Sandy CLAY, fine-grained over-bank deposit

(4b) Lenticular pea gravel and coarse sand deposit

Blocky ped structure with weakly developed clay films

Manganese Oxide (MnO) staining

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TRENCH LOG SECTION
RICHMOND COUNTRY CLUB
RICHMOND, CALIFORNIA

PROJECT NO.: 15693.000.000
SCALE: AS SHOWN
DRAWN BY: RD
CHECKD BY: JBR

FIGURE NO.
A1

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APPENDIX B

RADIOCARBON DATING RESULT

Beta Analytical, Inc.

Beta Analytic Inc
4985 SW 74 Court
Miami, Florida 33155
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2005-Accredited Testing Laboratory

May 20, 2019

Mr. Ryan Rud
ENGEO Inc.
2010 Crow Canyon Pl
Suite #250
San Ramon, California 94583
United States

RE: Radiocarbon Dating Results

Dear Mr. Rud,

Enclosed are the radiocarbon dating results for two samples recently sent to us. The report sheet contains the Conventional Radiocarbon Age (BP), the method used, material type, and applied pretreatments, any sample specific comments and, where applicable, the two-sigma calendar calibration range. The Conventional Radiocarbon ages have been corrected for total isotopic fractionation effects (natural and laboratory induced).

All results (excluding some inappropriate material types) which fall within the range of available calibration data are calibrated to calendar years (cal BC/AD) and calibrated radiocarbon years (cal BP). Calibration was calculated using one of the databases associated with the 2013 INTCAL program (cited in the references on the bottom of the calibration graph page provided for each sample.) Multiple probability ranges may appear in some cases, due to short-term variations in the atmospheric 14C contents at certain time periods. Looking closely at the calibration graph provided and where the BP sigma limits intercept the calibration curve will help you understand this phenomenon.

Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result.

All work on these samples was performed in our laboratories in Miami under strict chain of custody and quality control under ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 accreditation protocols. Sample, modern and blanks were all analyzed in the same chemistry lines by qualified professional technicians using identical reagents and counting parameters within our own particle accelerators. A quality assurance report is posted to your directory for each result.

Our invoice has been sent separately. Thank you for your prior efforts in arranging payment. As always, if you have any questions or would like to discuss the results, don't hesitate to contact us.

Sincerely,



Ronald E. Hatfield Director

Beta Analytic Inc
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info@betalabservices.com

ISO/IEC 17025:2005-Accredited Testing Laboratory

REPORT OF RADIOCARBON DATING ANALYSES

Ryan Rud

ENGEO Inc.

Report Date: May 20, 2019

Material Received: May 01, 2019

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) & Stable Isotopes Calendar Calibrated Results: 95.4 % Probability High Probability Density Range Method (HPD)	
Beta - 524340	**15693 S-2**	**18160 +/- 70 BP**	IRMS δ13C: -23.9 o/oo

(95.4%) 20315 - 19856 cal BC (22264 - 21805 cal BP)

Submitter Material: Organic Sediment/Gyttja
Pretreatment: (organic sediment) acid washes
Analyzed Material: Organic sediment
Analysis Service: AMS-Standard delivery
Percent Modern Carbon: 10.43 +/- 0.09 pMC
Fraction Modern Carbon: 0.1043 +/- 0.0009
D14C: -895.72 +/- 0.91 o/oo
Δ14C: -896.59 +/- 0.91 o/oo(1950:2,019.00)
Measured Radiocarbon Age: (without d13C correction): 18140 +/- 70 BP
Calibration: BetaCal3.21: HPD method: INTCAL13

Results are ISO/IEC-17025:2005 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.

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REPORT OF RADIOCARBON DATING ANALYSES

Ryan Rud

ENGEO Inc.

Report Date: May 20, 2019

Material Received: May 01, 2019

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) & Stable Isotopes Calendar Calibrated Results: 95.4 % Probability High Probability Density Range Method (HPD)	
Beta - 524341	**15693 S-3**	**20870 +/- 60 BP**	IRMS δ13C: -22.7 o/oo

(95.4%) 23497 - 23029 cal BC (25446 - 24978 cal BP)

Submitter Material: Organic Sediment/Gyttja
Pretreatment: (organic sediment) acid washes
Analyzed Material: Organic sediment
Analysis Service: AMS-Standard delivery
Percent Modern Carbon: 7.44 +/- 0.06 pMC
Fraction Modern Carbon: 0.0744 +/- 0.0006
D14C: -925.58 +/- 0.56 o/oo
Δ14C: -926.20 +/- 0.56 o/oo(1950:2,019.00)
Measured Radiocarbon Age: (without d13C correction): 20830 +/- 60 BP
Calibration: BetaCal3.21: HPD method: INTCAL13

Results are ISO/IEC-17025:2005 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: d13C = -23.9 o/oo)

Laboratory number **Beta-524340**

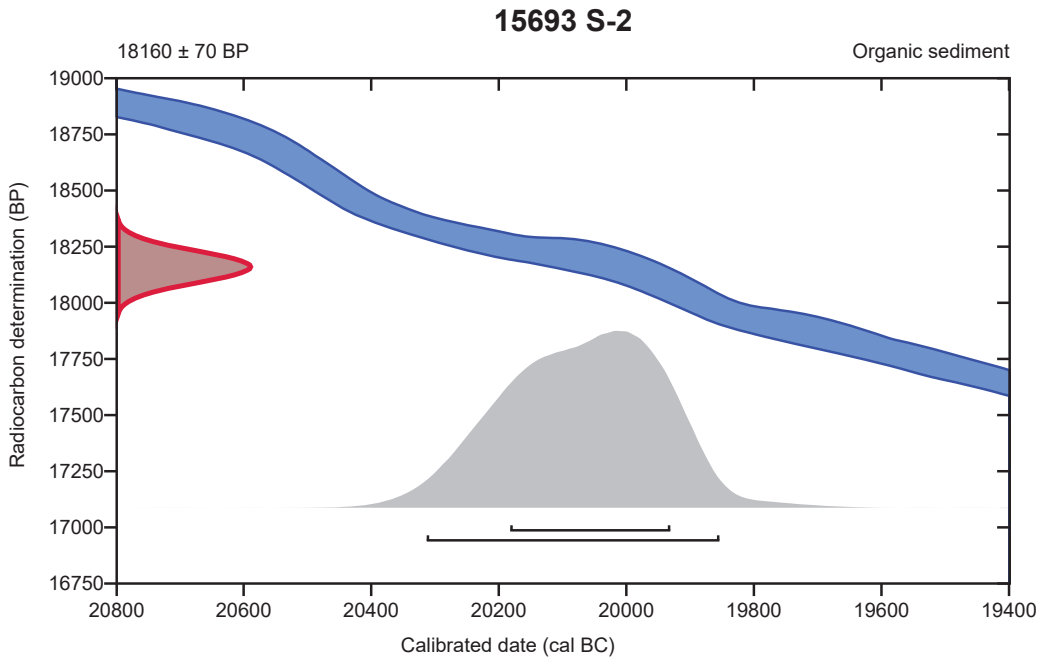
Conventional radiocarbon age **18160 ± 70 BP**

95.4% probability

(95.4%) 20315 - 19856 cal BC (22264 - 21805 cal BP)

68.2% probability

(68.2%) 20184 - 19933 cal BC (22133 - 21882 cal BP)



Database used

INTCAL13

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database INTCAL13

Reimer, et.al., 2013, Radiocarbon55(4).

BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: d13C = -22.7 o/oo)

Laboratory number **Beta-524341**

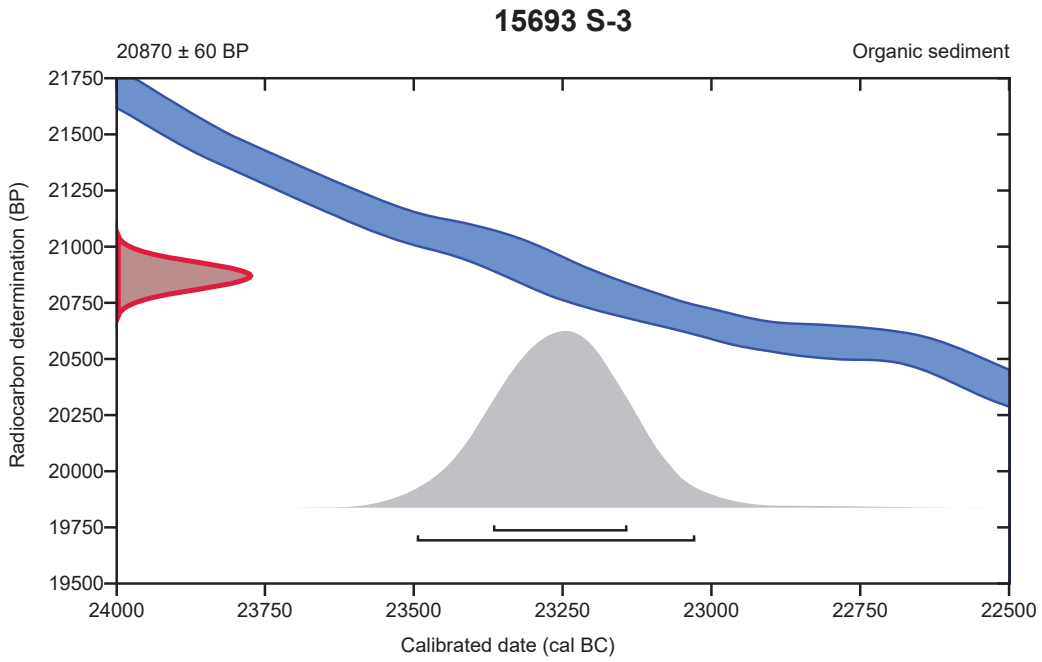
Conventional radiocarbon age **20870 ± 60 BP**

95.4% probability

(95.4%) 23497 - 23029 cal BC (25446 - 24978 cal BP)

68.2% probability

(68.2%) 23369 - 23143 cal BC (25318 - 25092 cal BP)



Database used

INTCAL13

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database INTCAL13

Reimer, et.al., 2013, Radiocarbon55(4).

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ISO/IEC 17025:2005-Accredited Testing Laboratory

Quality Assurance Report

This report provides the results of reference materials used to validate radiocarbon analyses prior to reporting. Known-value reference materials were analyzed quasi-simultaneously with the unknowns. Results are reported as expected values vs measured values. Reported values are calculated relative to NIST SRM-4990B and corrected for isotopic fractionation. Results are reported using the direct analytical measure percent modern carbon (pMC) with one relative standard deviation. Agreement between expected and measured values is taken as being within 2 sigma agreement (error x 2) to account for total laboratory error.

Report Date: May 20, 2019
Submitter: Mr. Ryan Rud

QA MEASUREMENTS

Reference 1

Expected Value:	0.42 +/- 0.04
Measured Value:	0.43 +/- 0.03 pMC
Agreement:	Accepted

Reference 2

Expected Value:	129.41 +/- 0.06 pMC
Measured Value:	129.42 +/- 0.37 pMC
Agreement:	Accepted

Reference 3

Expected Value:	41.14 +/- 0.10 pMC
Measured Value:	40.95 +/- 0.15 pMC
Agreement:	Accepted

COMMENT: All measurements passed acceptance tests.

Validation: Digital signature on file

Date: May 20, 2019

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ISO/IEC 17025:2005-Accredited Testing Laboratory

May 15, 2019

Mr. Curtis Hall
ENGEO Incorporated
2010 Crow Canyon Pl
Suite 250
San Ramon, CA 94583
United States

RE: Radiocarbon Dating Results

Dear Mr. Hall,

Enclosed is the radiocarbon dating result for one sample recently sent to us. As usual, specifics of the analysis are listed on the report with the result and calibration data is provided where applicable. The Conventional Radiocarbon Age has been corrected for total fractionation effects and where applicable, calibration was performed using 2013 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

The reported result is accredited to ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 standards and all pretreatments and chemistry were performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2005 Testing Accreditation PJLA #59423 program participated in the analysis.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result. The reported d13C was measured separately in an IRMS (isotope ratio mass spectrometer). It is NOT the AMS d13C which would include fractionation effects from natural, chemistry and AMS induced sources.

When interpreting the result, please consider any communications you may have had with us regarding the sample. As always, your inquiries are most welcome. If you have any questions or would like further details of the analysis, please do not hesitate to contact us.

Our invoice has been sent separately. Thank you for your prior efforts in arranging payment. As always, if you have any questions or would like to discuss the results, don't hesitate to contact us.

Sincerely,



Ronald E. Hatfield Director

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info@betalabservices.com

ISO/IEC 17025:2005-Accredited Testing Laboratory

REPORT OF RADIOCARBON DATING ANALYSES

Curtis Hall

ENGEO Incorporated

Report Date: May 15, 2019

Material Received: April 25, 2019

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) & Stable Isotopes Calendar Calibrated Results: 95.4 % Probability High Probability Density Range Method (HPD)	
Beta - 523982	**15693.000.000_Sta 0+22_10.5-11"**	**20300 +/- 60 BP**	IRMS δ13C: -23.4 o/oo

(95.4%) 22626 - 22193 cal BC (24575 - 24142 cal BP)

Submitter Material: Sediment
Pretreatment: (alkali insoluble organics) acid/alkali/acid
Analyzed Material: Alkali insoluble organics
Analysis Service: AMS-Standard delivery
Percent Modern Carbon: 7.99 +/- 0.06 pMC
Fraction Modern Carbon: 0.0799 +/- 0.0006
D14C: -920.11 +/- 0.60 o/oo
Δ14C: -920.77 +/- 0.60 o/oo(1950:2,019.00)
Measured Radiocarbon Age: (without d13C correction): 20270 +/- 60 BP
Calibration: BetaCal3.21: HPD method: INTCAL13

Results are ISO/IEC-17025:2005 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.

BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: d13C = -23.4 o/oo)

Laboratory number **Beta-523982**

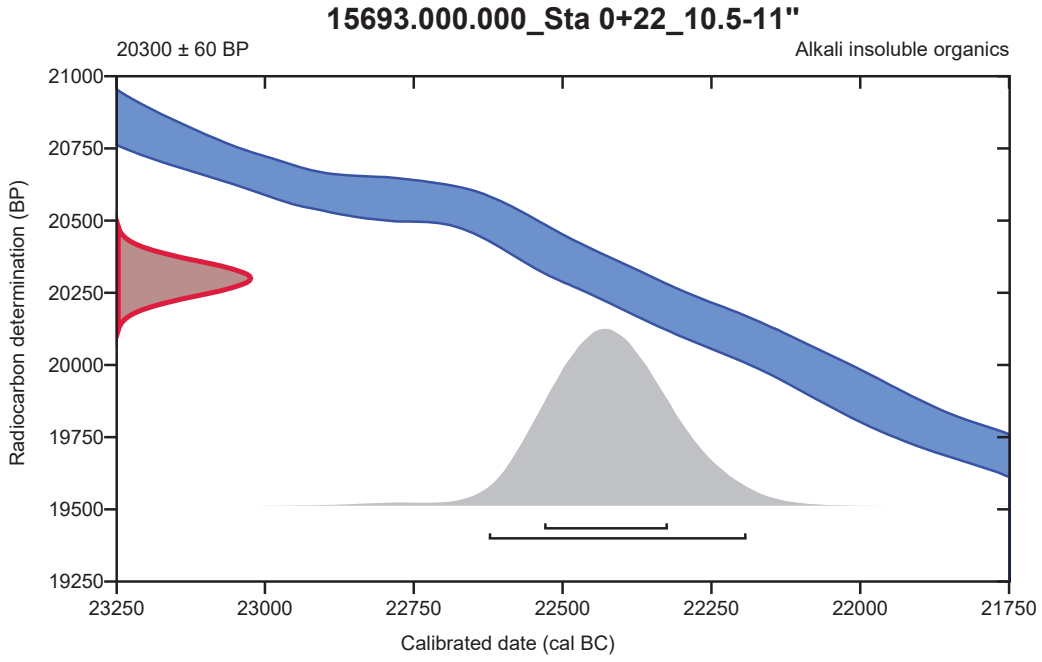
Conventional radiocarbon age **20300 ± 60 BP**

95.4% probability

(95.4%) 22626 - 22193 cal BC (24575 - 24142 cal BP)

68.2% probability

(68.2%) 22533 - 22325 cal BC (24482 - 24274 cal BP)



Database used

INTCAL13

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database INTCAL13

Reimer, et.al., 2013, Radiocarbon55(4).

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Quality Assurance Report

This report provides the results of reference materials used to validate radiocarbon analyses prior to reporting. Known-value reference materials were analyzed quasi-simultaneously with the unknowns. Results are reported as expected values vs measured values. Reported values are calculated relative to NIST SRM-4990B and corrected for isotopic fractionation. Results are reported using the direct analytical measure percent modern carbon (pMC) with one relative standard deviation. Agreement between expected and measured values is taken as being within 2 sigma agreement (error x 2) to account for total laboratory error.

Report Date: May 15, 2019
Submitter: Mr. Curtis Hall

QA MEASUREMENTS

Reference 1	
Expected Value:	129.41 +/- 0.06 pMC
Measured Value:	129.56 +/- 0.39 pMC
Agreement:	Accepted
Reference 2	
Expected Value:	96.69 +/- 0.50 pMC
Measured Value:	95.94 +/- 0.31 pMC
Agreement:	Accepted
Reference 3	
Expected Value:	0.42 +/- 0.04
Measured Value:	0.43 +/- 0.04 pMC
Agreement:	Accepted

COMMENT: All measurements passed acceptance tests.

Validation: Digital signature on file

Date: May 15, 2019



ENGEO

Expect Excellence

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Appendix F:
Hazards and Hazardous Materials Supporting Information

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F.1 - Phase 1 Environmental Site Assessment

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RICHMOND COUNTRY CLUB
RICHMOND, CALIFORNIA

PHASE I ENVIRONMENTAL SITE ASSESSMENT

DRAFT

SUBMITTED TO
Mr. Chris Zaballos
MLC Holdings, Inc.
2603 Camino Ramon
Suite 140
San Ramon, CA 94583

PREPARED BY
ENGEO Incorporated

December 28, 2018

PROJECT NO.
15693.000.000

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ENGEO
Expect Excellence

Project No.
15693.000.000

December 28, 2018

Mr. Chris Zaballos
MLC Holdings, Inc.
2603 Camino Ramon
Suite 140
San Ramon, CA 94583

Subject: Richmond Country Club - 1 Markovich Lane
Richmond, California

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Dear Mr. Zaballos:

ENGEO is pleased to present our phase I environmental site assessment of the subject property (Property), located in Richmond, California. The attached report includes a description of the site assessment activities, along with ENGEO's findings, opinions, and conclusions regarding the Property.

ENGEO has the specific qualifications based on education, training, and experience to assess the nature, history, and setting of the Property, and has developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312 and the American Standard Testing Method (ASTM) Practice E1527-13. We declare that, to the best of our professional knowledge and belief, the responsible charge for this study meets the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312 and ASTM E1527-13.

We are pleased to be of service to you on this project. If you have any questions concerning the contents of our report, please contact us.

Sincerely,

ENGEO Incorporated

Taunee Werts
tw/jaa/bvv

Jeffrey A. Adams, PhD, PE

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TABLE OF CONTENTS

LETTER OF TRANSMITTAL

EXECUTIVE SUMMARY 1

1.0 INTRODUCTION 3

1.1 SITE LOCATION AND DESCRIPTION 3
1.2 CURRENT USE OF PROPERTY AND ADJOINING PROPERTIES 3
1.3 SITE AND VICINITY CHARACTERISTICS 3
1.4 PURPOSE OF PHASE I ENVIRONMENTAL SITE ASSESSMENT 4
1.5 DETAILED SCOPE OF SERVICES 4
1.6 SIGNIFICANT ASSUMPTIONS OR DEVIATIONS FROM ASTM STANDARD PRACTICE 4
1.7 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT 4
1.8 SPECIAL TERMS AND CONDITIONS 5

2.0 RECORDS REVIEW 5

2.1 PROPERTY RECORDS 5
2.1.1 Title Report/Ownership 5
2.2 PREVIOUS ENVIRONMENTAL REPORTS 6
2.3 HISTORICAL RECORD SOURCES 6
2.3.1 Historical Topographic Maps 7
2.3.2 Aerial Photographs 8
2.3.3 Fire Insurance Maps 8
2.3.4 City Directory 9
2.4 ENVIRONMENTAL RECORD SOURCES 9
2.4.1 Standard Environmental Records 9
2.4.1.1 Subject Property 9
2.4.1.2 Other Properties 9
2.4.2 Additional Environmental Records 11
2.4.2.1 Subject Property 11
2.4.2.2 Other Properties 11
2.5 REGULATORY AGENCY FILES AND RECORDS 13

3.0 SITE RECONNAISSANCE 18

3.1 METHODOLOGY 18
3.2 GENERAL SITE SETTING 18
3.3 EXTERIOR OBSERVATIONS 18
3.4 INTERIOR OBSERVATIONS 19
3.5 ASBESTOS-CONTAINING MATERIALS AND LEAD-BASED PAINT 19
3.6 INDOOR AIR QUALITY 19

4.0 INTERVIEWS 20

5.0 EVALUATION 20

5.1 OPINIONS AND DATA GAPS 20
5.2 FINDINGS AND CONCLUSIONS 20

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TABLE OF CONTENTS (Continued)

REFERENCES

FIGURES

APPENDIX A – Environmental Data Resources, Inc., Radius Map Report

APPENDIX B – Environmental Data Resources, Inc., Sanborn Map Report

APPENDIX C – Environmental Data Resources, Inc., Historical Topographic Map Report

APPENDIX D – First American Title Company, Preliminary Title Report

APPENDIX E – Environmental Data Resources, Inc., Aerial Photo Decade Package

APPENDIX F – Environmental Data Resources, Inc., City Directory

APPENDIX G – Environmental Site Assessment Questionnaires (2)

APPENDIX H – RWQCB Transmittal of the Closure Letter and Site Summary

APPENDIX I – Qualifications of Environmental Professional

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EXECUTIVE SUMMARY

ENGEO conducted a phase I environmental site assessment for the property located at 1 Markovich Lane in Richmond, California (Property). The Property is approximately 24 acres in area and is identified as portions of Assessor's Parcel Numbers (APN) 405-050-006 and 405-050-019. The Property study area refers to the undeveloped vegetated land located to the west of the Richmond Country club (Figures 1 and 2).

The Property consists of undeveloped vegetated land. Review of historical records indicates that the Property has remained undeveloped land since the late 1930s. A railroad line has been mapped along the western boundary of the study area since at the least the late 1890s. Prior to the golf course development in the 1940s, the San Pablo Oil Tank Farm operated on a portion of the golf course and further east. The San Pablo Oil Tank Farm is no longer present and has since undergone residential development. Undocumented fill has been present on the central and northern portion of the study area since at least the 1950s.

This assessment included a review of local, state, tribal, and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources. A reconnaissance of the Property was conducted to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials and interviews with persons knowledgeable about current and past site use.

The site reconnaissance and records review did not find documentation or physical evidence of soil, groundwater, or soil gas impairments associated with the use or past use of the Property. A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge for the Property and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the Property.

A closed leaking underground storage tank (LUST) case is associated with Richmond Golf Course, 1 Markovich Lane (part of APN 405-050-006). The LUST case was associated with two underground storage tanks located over 1,000 feet to the southeast of the Property boundary near the golf course maintenance buildings and was closed in 2004. The case closure summary letter obtained from the Regional Water Quality Control Board is presented in Appendix H. Concentrations in soil, at the time of closure, were reported below the laboratory reporting limit for TPH as gasoline (TPH-g), benzene, toluene, ethyl benzene, and MTBE. Groundwater samples exhibited concentrations of TPH-g, TPH-d, toluene, and xylene(s) below residential screening levels[1]. Given the case closure summary letter and distance to the subject Property, the former LUST case is not expected to represent an environmental concern for the subject Property.

Based on the findings of this assessment, no Recognized Environmental Conditions (RECs), no historical RECs, and no controlled RECs were identified for the Property.

Based on the review of regulatory databases and site reconnaissance, we present information on features of potential environmental concern that were either contained in the databases or observed on the Property. These features were not considered to be RECs. We briefly discuss each feature below:

[1] San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels (ESLs), Tier 1 Values – Groundwater, February 2016 (Revision 3).

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- Undocumented fill has been placed over the years in the central and northern portion of the Property.

- BNSF railroad tracks are located along the western boundary of the study area.

- The Key Site Manager indicated that the Property has been used to dispose of organic waste, or “green waste.” Pits reportedly were dug to dispose of the green waste. The locations of the pits are unknown.

ENGEO has performed a phase I environmental site assessment in general conformance with the scope and limitations of ASTM E1527-13 and the standards and practices of the All Appropriate Inquiry – Final Rule (40 Code of Federal Regulations Part 312). This assessment has revealed no evidence of Recognized Environmental Conditions in connection with the Property.

ENGEO recommends the following:

- The source and contents of the existing undocumented fill placed at the Property has not been identified. It would be prudent to perform a preliminary soil sampling with laboratory analysis assessment to assess if the material poses a risk for redevelopment.

- A preliminary soil screening assessment of the western boundary of the Property, near the railroad corridor, should be performed to assess if past railroad activities have impacted near-surface soils.

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1.0 INTRODUCTION

1.1 SITE LOCATION AND DESCRIPTION

ENGEO conducted a phase I environmental site assessment for the Property located at 1 Markovich Lane in Richmond, California (Figures 1 and 2). The approximately 24-acre Property is identified as APN 405-050-006 and 405-050-019. The Property is bordered by the Burlington Northern Santa Fe (BNSF) Railroad to the west and north, and by the Richmond Country Club to the east and south (Figure 3) and is currently vegetated undeveloped land.

1.2 CURRENT USE OF PROPERTY AND ADJOINING PROPERTIES

The Property is currently vegetated undeveloped land. The Property is bordered by BNSF railroad tracks to the west and north, and by the Richmond Country Club to the east and south.

1.3 SITE AND VICINITY CHARACTERISTICS

According to published topographic maps, the Property ranges in elevation from approximately 52 feet above mean sea level (msl) in the south to approximately 98 feet above msl to the north. Review of regional geologic maps by Graymer (1994) and Dibblee (1980), along with prior exploration in the vicinity area indicates that the Property may be underlain by shallow sedimentary bedrock and quaternary alluvium deposits. The southwest parcel of the Property is mapped within an Alquist-Priolo Zone for the Hayward-Rodgers Creek fault and is not mapped within an area that has been evaluated by the California Geologic Survey (CGS) for liquefaction or landslide susceptibility.

Geocheck – The following sources indicated that no wells were mapped within 1 mile of the Property: Federal United States Geological Survey, Federal Public Water Supply System, and State Database Well Information.

We reviewed the Department of Water Resources On-line Water Data Library for depth to water in the vicinity of the Property. The website did not identify any wells within 1 mile of the Property.

We reviewed EnviroStor, a website maintained by the State of California Department of Toxic Substances Control, and GeoTracker, a website maintained by the State of California Water Resources Control Board, for nearby facilities with records that include depth to groundwater measurements. No information was obtained regarding local groundwater conditions.

The site-specific depth to groundwater and direction of groundwater flow was not determined as part of this assessment. Fluctuations in groundwater levels may occur seasonally and over a period of years due to variations in precipitation, temperature, irrigation and other factors.

We reviewed the Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) website and map database to determine if any historic oil and/or gas wells were located within the Property. Three wells were mapped within 1 mile of the Property. Well 2-R is mapped to the northwest of the Property. R-5 was installed in June 1969 and abandoned in February 1972. Well 1 is mapped northwest of the Property. Well 1 was installed in January 1969 and abandoned in 1975.

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1.4 PURPOSE OF PHASE I ENVIRONMENTAL SITE ASSESSMENT

This assessment was performed at the request of MLC Holdings, Inc. for the purpose of environmental due diligence during property acquisition. The objective of this phase I environmental site assessment is to identify Recognized Environmental Conditions (RECs) associated with the Property. As defined in the ASTM Standard Practice E1527-13, an REC is "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

1.5 DETAILED SCOPE OF SERVICES

The scope of services performed included the following:

- A review of previous environmental reports prepared for the Property.
- A review of publicly available and practically reviewable standard local, state, tribal, and federal environmental record sources.
- A review of publicly available and practically reviewable standard historical sources, aerial photographs, fire insurance maps and physical setting sources.
- A reconnaissance of the Property to review site use and current conditions. The reconnaissance was conducted to check for the storage, use, production or disposal of hazardous or potentially hazardous materials.
- Interviews with owners/occupants and public sector officials.
- Preparation of this report with our findings, opinions, and conclusions.

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1.6 SIGNIFICANT ASSUMPTIONS OR DEVIATIONS FROM ASTM STANDARD PRACTICE

No significant assumptions or deviations from ASTM Standard Practice were made.

1.7 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The professional staff at ENGEO strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. The recommendations and conclusions presented in this report were based on the findings of our study, which were developed solely from the contracted services. The findings of the report are based in part on contracted database research, out-of-house reports and personal communications. The opinions formed by ENGEO are based on the assumed accuracy of the relied upon data in conjunction with our relevant professional experience related to such data interpretation. ENGEO assumes no liability for the validity of the materials relied upon in the preparation of this report.

This document must not be subject to unauthorized reuse; that is, reuse without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time.

The findings from a phase I environmental site assessment are valid for one year after completion of the report. Updates of portions of the assessment may be necessary after a period of 180 days after completion.

This phase I environmental site assessment is not intended to represent a complete soil or groundwater characterization, nor define the depth or extent of soil or groundwater contamination. It is intended to provide an evaluation of potential environmental concerns associated with the use of the Property. A more extensive assessment that would include a subsurface exploration with laboratory testing of soil and groundwater samples could provide more definitive information concerning site-specific conditions. If additional assessment activities are considered for the Property and if other entities are retained to provide such services, ENGEO cannot be held responsible for any and all claims arising from or resulting from the performance of such services by other persons or entities. ENGEO can also not be held responsible from any and all claims arising or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

1.8 SPECIAL TERMS AND CONDITIONS

ENGEO has prepared this report for the exclusive use of our client, MLC Holdings, Inc. It is recognized and agreed that ENGEO has assumed responsibility only for undertaking the study for the client. The responsibility for disclosures or reports to a third party and for remedial or mitigative action shall be solely that of the Client.

Laboratory testing of soil or groundwater samples was not within the scope of the contracted services. The assessment did not include an asbestos survey, an evaluation of lead-based paint, an inspection of light ballasts for polychlorinated biphenyls (PCBs), a radon evaluation, or a mold survey.

This report is based upon field and other conditions discovered at the time of preparation of ENGEO's assessment. Visual observations referenced in this report are intended only to represent conditions at the time of the reconnaissance. ENGEO would not be aware of site contamination, such as dumping and/or accidental spillage, that occurred subsequent to the reconnaissance conducted by ENGEO personnel.

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2.0 RECORDS REVIEW

2.1 PROPERTY RECORDS

2.1.1 Title Report/Ownership

The Title Report lists recorded land title detail, ownership fees, leases, land contracts, easements, liens, deficiencies, and other encumbrances attached to or recorded against a subject property. Laws and regulations pertaining to land trusts vary from state to state and the detail of information presented in a Title Report can vary greatly by jurisdiction. As a result, ENGEO utilizes a Title Report, when provided to us, as a supplement to other historical record sources.

A Preliminary Title Report for the Property, prepared by First American Title Company and dated October 23, 2018, was provided for our review. The Property title is vested in Richmond Golf & Country Club, A California Non-Profit Corporation. No references to environmental liens, deed restrictions or other potential environmental issues were noted. This report is included in Appendix D.

2.2 PREVIOUS ENVIRONMENTAL REPORTS

Technology, Engineering, and Construction, Inc. Accutite, Removal of Two Underground Storage Tanks From One Markovich Lane in Richmond, California, August 2002

Technology, Engineering, and Construction, Inc. Accutite (TEC Accutite) removed USTs at the Richmond Country Club in July 2002. After tank removal, four soil samples were collected from the native soil and from the UST pit (T1@10 through T4@10). One grab groundwater sample was collected from the groundwater encountered during excavation (TP-W). One composite soil sample was collected from the pea-gravel stockpile generated during excavation (SP-1). TEC Accutite concluded that noticeable concentrations of total petroleum hydrocarbons (TPH) were detected in the groundwater sample collected from the tank excavation. TPH as gasoline (TPH-g), benzene, toluene, ethyl benzene, and MTBE were detected at concentrations of 1,020, 143, 423, 11.2, and 1,250 milligrams per kilogram (mg/kg), respectively. MTBE in soil ranged from non-detect to 0.03 and 0.011 mg/kg. Other constituents of concern were not detected above the laboratory reporting limit. TEC Accutite concluded that further investigation was at the discretion of the Contra Costa County Health Services.

Aqua Science Engineers, Inc. Soil and Groundwater Assessment at 1 Markovich Lane, Richmond, California, (ASE Job No. 3969), July 9, 2004.

In July, 2004 Aqua Science Engineers, Inc. (ASE) drilled soil borings BH-A through BH-C approximately 10 feet from the former USTs. Soil samples were collected from 14.5 feet below the ground surface in borings BH-A and BH-C and 13.5 feet below the ground surface in boring BH-B. In the samples analyzed, all constituents were reported below the laboratory reporting limit. ASE collected three groundwater samples from each boring. TPH-g, TPH as diesel (TPH-d), toluene, and xylene(s) were detected at concentrations of 67, 0.51, and 0.79 mg/kg, respectively in sample BH-A. BH-B reported concentrations of TPH-d and toluene at concentrations of 86 and 2.5 mg/kg, respectively. BH-C reported TPH-d at a concentration of 54 mg/kg. Based on the results, ASE recommended no further investigations and case closure by the RWQCB.

California Regional Water Quality Control Board, Closure Letter – Richmond Country Club, 1 Markovich Lane, Richmond, Contra Costa County. September 2004.

The RWQCB issued a closure letter for the Richmond Country Club dated September 17, 2004. The letter confirms the completion of the site investigation and remedial action for the underground storage tanks formerly located at 1 Markovich Lane. Concentrations in soil at the time of sampling were below the laboratory reporting limits. Groundwater samples exhibited concentrations of TPH-g, TPH-d, toluene, and xylene(s) below residential screening levels. RWQCB concluded that no further action related to the underground storage tanks release was required. The case closure letter and site summary are presented in Appendix H.

2.3 HISTORICAL RECORD SOURCES

The purpose of the historical record review is to develop a history of the previous uses or occupancies of the Property and surrounding area in order to identify those uses or occupancies that are likely to have led to recognized environmental conditions on the Property.

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2.3.1 Historical Topographic Maps

Historical USGS topographic maps were reviewed to determine if discernible changes in topography or improvements pertaining to the Property had been recorded. The following maps were provided to us through an EDR Historical Topographic Map Report, presented in Appendix C.

TABLE 2.3.1-1: Historical Topographic Maps

QUAD	YEAR	DESCRIPTION
San Francisco	1895, 1899	Property: The Property appears to be undeveloped. Adjoining: Giant Road is visible to the west and north of the Property. A railroad extends north and south along Giant Road, then bends and trends to the east. A few small structures and their associated access roads can be seen along Giant Road. San Pablo Bay is mapped west of the railroad.
San Francisco	1915	Property: The Property remains undeveloped. Approximately six oil tanks are mapped on adjoining parcels but not within the study area. Adjoining: Atchison, Topeka and Santa Fe (now BNSF) railroad tracks are mapped west of the Property. Oil tanks are visible to the east, southeast, and south of the Property.
San Francisco	1948	Property: Only one oil tank remains on an adjoining parcel to the southeast of the study area. No other significant changes are noted from the 1915 topographic map. Adjoining: No significant changes are noted from the 1915 topographic map.
Richmond	1949	Property: An access road enters the study area in the southwest corner. The access road has one small structure on the southern side and a lager structure at the end of the road. Adjoining: The Richmond Country Club is mapped to the east of the study area. The San Pablo Oil Tank Farm is mapped to the east of the Richmond Country Club.
Richmond	1959, 1968, 1973, & 1980	Property: No significant changes are noted from the 1949 topographic map. Adjoining: An oil sump is mapped south of the study area. Significant development has occurred west of the Property.
Richmond	1995	Property: No significant changes are noted from the 1980 topographic map. Adjoining: The San Pablo Oil Tank Farm is no longer present. No other significant changes are noted from the 1980 topographic map.
Richmond	1996	Property: No significant changes are noted from the 1995 topographic map. Adjoining: Three additional structures have been added to the adjoining parcel. The small structure mapped on the southern side of the access road is no longer present.

QUAD	YEAR	DESCRIPTION
Richmond	2012	Property: The Property appears to be in its current configuration. Adjoining: Surrounding properties appear to be in their current configuration.

2.3.2 Aerial Photographs

The following aerial photographs, provided by EDR, were reviewed for information regarding past conditions and land use at the Property and in the immediate vicinity. These photographs are presented in Appendix E.

TABLE 2.3.2-1: Aerial Photographs

YEAR	DESCRIPTION
1939	Property: The Property appears to be undeveloped vegetated land. Adjoining: A water feature is depicted on the southern portion of the adjoining parcel. The San Pablo Oil Tank Farm is visible to the east and south. Giant Road is depicted to the west of the Property.
1946	Property: No significant changes are noted from the 1939 aerial photograph. Adjoining: The Richmond Country Club is visible to the east of the study area. The water feature previously noted is no longer visible on the southern portion of the adjoining parcel.
1950, 1958	Property: Vegetation borders the study area and the Richmond Country Club. In the approximate center of the study area, disturbed soil is visible. Adjoining: A large structure is depicted to the east-southeast of the study area.
1963, 1968, 1972, 1982	Property: Significant earth movement has occurred on the northern portion of the study area. Adjoining: Additional buildings have been developed on the southern portion of the adjoining parcel.
1993, 1998	Property: Earth movement has occurred on the northern and central portion of the study area, potentially associated with adjacent golf course operations. Adjoining: The San Pablo Oil Tank Farm has been removed.
2005, 2009, 2012	Property: Continued earth movement has occurred on the northern and central portion of the study area. Adjoining: Significant residential development has occurred to the east of the Richmond Country Club.
2016	Property: The study area appears to be in its current configuration. Adjoining: The adjoining parcels and surrounding adjoining properties appear to be in their current configuration.

2.3.3 Fire Insurance Maps

EDR prepared a Sanborn Fire insurance map search for the Property and surrounding properties. EDR reported that no maps were available for the Property and surrounding properties. The EDR is presented in Appendix B.

2.3.4 City Directory

City Directories, published since the 18th century for major towns and cities, lists the name of the resident or business associated with each address. A city directory search conducted by EDR is located in Appendix F.

TABLE 2.3.4-1: City Directory

YEAR	LISTING(S)
1995	1 Markovich Lane: Richmond Country Club
2005	1 Markovich Lane: Richmond Country Club
2010	1 Markovich Lane: Richmond Country Club
2014	1 Markovich Lane: Richmond Country Club

2.4 ENVIRONMENTAL RECORD SOURCES

EDR performed a search of federal, tribal, state, and local databases regarding the Property and nearby properties. Details regarding the databases searched by EDR are provided in Appendix A. A list of the facilities documented by EDR within the approximate minimum search distance of the Property is provided below.

2.4.1 Standard Environmental Records

2.4.1.1 Subject Property

The Property is listed on the following Standard Environmental Record source databases:

- RGA LUST – *1 Markovich Lane*
- CERS – *1 Markovich Lane*
- LUST, CERS, CERS HAZ WASTE – *1 Markovich lane*
- LUST, UST – *1 Markovich Lane*

However, the study area is not affected by the UST located on the associated parcel.

2.4.1.2 Other Properties

The following database(s) include(s) facilities listed within the appropriate ASTM search distances of the Property on Standard Environmental Records sources.

TABLE 2.4.1.2-1

FACILITY	STREET	DATABASE(S)
WEST COUNTY DETENTION FACILITY	5555 GIANT RD	UST
ATLAS ROAD EXTENSION IMPROVEMENTS PROJECT	5551 GIANT HWY	RCRA-LQG
EPITOME TRANSPORTATION	5532 HORIZON DR	RCRA NONGEN / NLR
MELS TRUCKING	3705 WOODLAND PL	RCRA NONGEN / NLR
CCC WEST COUNTY DETENTION FACILITY	5555 GIANT HWY	UST

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FACILITY	STREET	DATABASE(S)
UPS	1600 ATLAS RD	LUST
POINT PINOLE REGIONAL PARK	ATLAS ROAD AT GIANT ROAD	ENVIROSTOR
FALCON SPIRITS DISTILLERY	3701 COLLINS AVENUE #1B&C	CERS,CERS HAZ WASTE
ATLAS FOUNDRY AND MANUFACTURING COMPANY	3701 COLLINS AVENUE	ENVIROSTOR
ATLAS FOUNDRY & MFG CO	3701 COLLINS AVE	SEMS-ARCHIVE
PACIFIC SITE MANAGEMENT	3655 COLLINS AVE	AST,DEED
BIO-RAD LABORATORIES	2500 ATLAS RD	CERS,CERS HAZ WASTE
KOPPERS, INC.	3501 COLLINS AVENUE	ENVIROSTOR,CERS
J J MAGANA CORP	3501 COLLINS AVE	RCRA NONGEN / NLR,SEMS-ARCHIVE
CHEVRON USA INC SAN PABLO TANK FARM	GIANT RD & MINER AVE	RCRA-SQG,SEMS-ARCHIVE
REACTION PRODUCTS	840 MORTON AVENUE	LUST,ENVIROSTOR,LIENS,CERS
WITCO CHEM CORP	850 MORTON AVE	RCRA-SQG,ENVIROSTOR,RCRA-TSDF,DEED,US INST CONTROL,SEMS-ARCHIVE,CERS
CHEMTURA	850 MORTON (3655 COLLINS AVE)	DEED
DENNISON-EASTMAN CO	3451 COLLINS AVE	RCRA-SQG,SEMS-ARCHIVE
DENNISON EASTMAN CORP.	3451 COLLINS ST	ENVIROSTOR,CERS
STEELSCAPE INC.	2995 ATLAS ROAD	RCRA-SQG,SEMS-ARCHIVE
BAY AREA INDUSTRIAL PARK	2995 ATLAS ROAD	CPS-SLIC,CERS
PINOLE POINT STEEL	5000 GIANT	ENVIROSTOR,DEED,CERS
LAZY J RANCH/CHEVRON PIPELINE SITE	3001 GIANT RD	CPS-SLIC,CERS
MI-JACK PRODUCTS, INC DBA TSI	1601 ATLAS RD	ENVIROSTOR,AST,CERS TANKS,CERS HAZ WASTE
CHEVRON HILLTOP WEST PROJECT	ATLAS ROAD AND SAN PABLO AVENUE	ENVIROSTOR
PARKWAY TRANSIT VILLAGE	NORTH END OF GOODRICK AVENUE	ENVIROSTOR,DEED,VCP
BERLEX LABORATORIES	15049 SAN PABLO AVE	LUST,ENVIROSTOR,CERS
MONTALVIN MANOR	CHRISTINE DR.	ENVIROSTOR
CA AUTISM FOUND., A BETTER CHANCE DAY CA	4075 LAKESIDE DR	ENVIROSTOR
AMERICAN STANDARD PRODUCTS: OU-III/LJR	3002 GIANT ROAD	ENVIROSTOR,DEED
COOPER CHEMICAL	2801 GIANT ROAD	AST,DEED,CERS
ACME TRANSPORTATION COMPANY	2832 GIANT RD.	LUST,ENVIROSTOR,DEED,CERS
HILDRETH HOLDINGS	2812 GIANT ROAD	ENVIROSTOR,DEED,CPS-SLIC,CERS

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FACILITY	STREET	DATABASE(S)
RADIANT COLOR	2800 RADIANT AVE	RCRA-SQG,ENVIROSTOR
STAUFFER CHEM CO RICHMOND PHOSPATE PLT	525 MAAS AVE	RCRA-LQG, ENVIROSTOR,DEED,SEMS-ARCHIVE,CPS-SLIC,CERS

2.4.2 Additional Environmental Records

2.4.2.1 Subject Property

The Property is listed on the following Additional Environmental Record source databases:

- FINDS – *1 Markovich Lane*
- CIWQS – *1 Markovich Lane*
- CHMIRS – *1 Markovich Lane*
- PEST LIC – *1 Markovich Lane*
- Contra Costa Co. SITE LIST – *1 Markovich Lane*
- WDS – *3900 Giant Road*
- SWEEPS UST – *1 Markovich Lane*
- CA FID UST – *1 Markovich Lane*

However, the study area is not affected by the UST located on the associated parcel.

2.4.2.2 Other Properties

The following database(s) include(s) facilities listed within the appropriate ASTM search distances of the Property on the Additional Environmental Record sources.

TABLE 2.4.2.2-1

FACILITY	STREET	DATABASE(S)
W CNTY CONTRA COSTA DETENTION	5555 GIANT HWY	SWEEPS UST,CA FID UST
TREE RESTORATION AT WEST COUNTY DETENTION CENTER F	5555 GIANT HIGHWAY	EMI,NPDES,CONTRA COSTA CO. SITE LIST,CIWQS
UPS	1600 ATLAS RD	HIST UST,SWEEPS UST,CA FID UST,HIST CORTESE,NPDES,CONTRA COSTA CO. SITE LIST,CIWQS
ATLAS FOUNDRY AND MANUFACTURING COMPANY	3701 COLLINS AVENUE	CHMIRS,CONTRA COSTA CO. SITE LIST
FALCON SPIRITS DISTILLERY	3701 COLLINS AVE 1B&C	CONTRA COSTA CO. SITE LIST
ATLAS FOUNDRY & MFG CO	3701 COLLINS AVE	PRP,SEMS-ARCHIVE
PG&E POINT PINOLE SUBSTATION	ATLAS & GIANT RD	CONTRA COSTA CO. SITE LIST
PACIFIC SITE MANAGEMENT	3655 COLLINS AVE	HAZNET,NPDES,AST,DEED,CONTRA COSTA CO. SITE LIST,CIWQS

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FACILITY	STREET	DATABASE(S)
BIO-RAD LABORATORIES	2500 ATLAS RD	CONTRA COSTA CO. SITE LIST,CERS,CERS HAZ WASTE
KOPPERS, INC.	3501 COLLINS AVENUE	HIST UST,HAZNET,ENF,HIST CORTESE,NPDES,LDS,CONTRA COSTA CO. SITE LIST,CIWQS
J J MAGANA CORP	3501 COLLINS AVE	FINDS,ECHO
KOPPERS CO., INC.	3501 COLLINS AVE	HIST UST
REACTION PRODUCTS	840 MORTON AVENUE	HIST CORTESE,WDS,CHMIRS,RESPONSE,CORTESE,HIST CAL-SITES,CONTRA COSTA CO. SITE LIST
WITCO CHEM CORP	850 MORTON AVE	FINDS,HIST UST,HAZNET,SWEEPS UST,CA FID UST,HWP,CORRACTS,FINANCIAL ASSURANCE,2020 COR ACTION,US FIN ASSUR,ECHO,ICE
CHEMTURA	850 MORTON (3655 COLLINS AVE)	ENF,CONTRA COSTA CO. SITE LIST,CIWQS
WITCO, U.S. PEROXYGEN DIVISION	850 MORTON AVENUE	TOXIC PITS
CROMPTON CORPORATION PROPERTY	850 MORTON (3655 COLLINS AVE) AVE	WDS,WMUDS/SWAT
DENNISON-EASTMAN CO	3451 COLLINS AVE	FINDS,ECHO
DENNISON EASTMAN CORP.	3451 COLLINS ST	RESPONSE,HIST CAL-SITES,CONTRA COSTA CO. SITE LIST
BAY AREA INDUSTRIAL PARK	2995 ATLAS ROAD	HAZNET,NPDES
PINOLE PT STEEL CO	5000 GIANT ROAD	WMUDS/SWAT
POINT PINOLE PROPERTIES	5000 GIANT ROAD	HIST CAL-SITES
PINOLE POINT STEEL COMPANY	5000 GIANT RD	SWEEPS UST,CA FID UST,HWP
MSC PINOLE POINT STEEL INC	5000 GIANT ROAD	EMI,CA BOND EXP. PLAN,CIWQS
PINOLE POINT STEEL	5000 GIANT	ENF,HIST CORTESE,RESPONSE,LDS,CIWQS
PINOLE POINT, OLD BETHLEMEM	5000 GIANT ROAD	EMI,TOXIC PITS
MI-JACK PRODUCTS, INC DBA TSI	1601 ATLAS RD	HAZNET,NPDES,CONTRA COSTA CO. SITE LIST
BERLEX LABORATORIES	15049 SAN PABLO AVE	HIST UST,SWEEPS UST,CA FID UST,EMI,HIST CORTESE,CONTRA COSTA CO. SITE LIST
AMERICAN STANDARD PRODUCTS: OU-III/LJR	3002 GIANT ROAD	HIST CORTESE,RESPONSE,CONTRA COSTA CO. SITE LIST
AMERICAN STANDARD PRODUCTS	3002 GIANT ROAD	HIST CAL-SITES,CA BOND EXP. PLAN
TRIPLE A MACHINE SHOP, INC	2801 GIANT ROAD	EMI,HIST CAL-SITES,CA BOND EXP. PLAN

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FACILITY	STREET	DATABASE(S)
COOPER CHEMICAL	2801 GIANT ROAD	HIST CORTESE, RESPONSE,CORTESE
ACME TRANSPORTATION COMPANY	2832 GIANT RD.	HIST UST,HIST CORTESE,CONTRA COSTA CO. SITE LIST,CIWQS
HILDRETH HOLDINGS	2812 GIANT ROAD	HIST CORTESE,RESPONSE
PT. PINOLE REGIONAL PARK		NOTIFY 65
RADIANT COLOR	2800 RADIANT AVE	RCRA-SQG,ENVIROSTOR,FTTS,WDS,HIST FTTS,CHMIRS
STAUFFER CHEM CO RICHMOND PHOSPATE PLT	525 MAAS AVE	FINDS,HIST UST,SWEEPS UST,CA FID UST,NPDES,CONTRA COSTA CO. SITE LIST,ECHO,CIWQS

1 Markovich Lane and 3900 Giant Road

The Property is listed on RGA LUST, FINDS, CIWQS, CERS, PEST LIC, LUST, CONTRA COSTA COUNTY SITE LIST, CERS HAZ WASTE, LUST, UST, HAZNET, and WDS. The reported chemical contaminants of concern was gasoline, which was identified in groundwater. Two underground storage tanks were operated at the Property from approximately the late 1980s to 2002. One 500-gallon diesel and one 2,500-gallon gasoline UST were removed from the Property in September 2002 under a permit granted by Contra Costa County. Detectable concentrations of total petroleum hydrocarbons (TPH) as gasoline (TPH-g), diesel (TPH-d), benzene, ethylbenzene, toluene, xylene(s), and MTBE remained in the groundwater after excavation and removal of contaminated soil. TPH-g was reported in groundwater after cleanup at a concentration of 67 micrograms per liter (µg/L), TPH-d at a concentration of 86 µg/L, toluene at a concentration of 2.5 µg/L, and xylene(s) at a concentration of 0.79 µg/L. All constituents in soil were reported below respective laboratory reporting limits. The RWQCB issued a case closure letter in September 2004. The study area is not affected by the UST located on the associated parcel.

Based on the distances to the identified database sites, regional topographic gradient, and the EDR findings, it is unlikely that the above-stated database sites pose an environmental risk to the Property. Properties that are on the "Orphan Summary" list appear to be either located beyond the ASTM recommended radius search criteria or unlikely to pose an environmental risk to the Property.

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2.5 REGULATORY AGENCY FILES AND RECORDS

The following agencies were contacted pertaining to possible past development and/or activity at the Property.

TABLE 2.5-1: Regulatory Agency Records

NAME OF AGENCY	RECORDS REVIEWED
City of Richmond Building and Planning Departments	The Richmond Building Department provided a file history document for the Property. The files pertain to the Richmond Country Club (grading permits, inspections, stormwater, etc.). The reviewed documents do not appear to be associated with the study area.
City of Richmond Fire Department	The Richmond Fire Department provided inspection records for review. Minor violations such as overgrowth of vegetation were noted.

NAME OF AGENCY	RECORDS REVIEWED
Contra Costa County Department of Environmental Health	Contra Costa County Department of Environmental Health provided the following documents for review: • Well permit for soil borings (6/17/2004) • Well permit (12/14/2007) • Well completion report (12/14/2007) • Harris Laboratories analytical data (7/31/2008) • A & L Western Agricultural Laboratories analytical data (9/19/2013) • Well permit application for a new well (12/11/2007)
Contra Costa County Department of Hazardous Materials	Contra Costa County Hazardous Materials Department provided the following documents for review: • Application for permit to operate underground storage tank (4/22/1987) ○ One, 550-gallon diesel UST. • Application for permit to operate underground storage tank ○ One, 2,500-gallon gasoline UST. • Underground hazardous substance storage tank removal permit and information form ○ One 1,000-gallon tank of motor fuel to be removed and replaced (7/24/1987). • Underground Tank Program ○ Facility inspections noted three observation wells (11/8/1988) ○ Removal of one, 1,000-gallon gasoline tank at an approximate depth of 4 feet. Product was observed on water surface, however, no visible holes were seen. Confirmation samples were taken and the tank was off-hauled (6/8/1987) ○ Facility was inspected, leak detection alarms turned off. Lube oil in fire extinguisher left at fuel pumps was drilling oil on the ground (11/4/1988) • Underground tank facility inspections (10/8/1988) • Underground storage tank permit application (3/16/1991) • Underground storage tank permit application ○ 2,500-gallon premium unleaded and leaded product (8/16/1991) • Underground storage tank permit application ○ 500-gallon diesel (8/16/1991) • Permit to operate underground storage tank ○ 5-year permit, issued 9/1/1991 and expires 3/31/1996 for the 550-gallon diesel UST. • Underground tank facility inspection (10/17/1991) • Underground tank facility inspection (6/15/1994) • Underground storage tank permit application – renewal permit (7/26/1996) • Permit to operate underground storage tank ○ 5-year permit, issued 9/1/1996 and expired 3/31/2001 for the 550-gallon diesel UST. • Underground tank facility inspection (8/21/1997).

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NAME OF AGENCY	RECORDS REVIEWED
	• Hazardous waste management program inspection compliance report ○ 3 violations reported: emergency coordinator, equipment maintenance and testing, and container management (8/21/1997) • Underground tank facility inspection (11/30/1998) • Underground storage tank facility upgrade compliance certificate (11/30/1998). • Underground storage tank inspection (12/22/2000) • Hazardous waste generator inspection (12/22/2000) • Certified unified program agency – unified hazardous waste and hazardous materials management regulatory program – annual business authorization/permit ○ Date issued: 7/1/2001; expiration date: 6/30/2002 • Underground storage tank inspection (12/21/2001) • Underground storage tank permit application – renewal permit (2/20/2002) • Underground storage tanks – facility ○ New site permit (7/1/2002) • Underground storage tanks – facility ○ New site permit (7/1/2002) • Technology, Engineering, & Construction, Inc. – Safety Plan. ○ Scope of work: TEC/Accutite removal of two underground storage tanks at the Richmond Country Club, located at 1 Markovich Lane, Richmond, CA. • Underground Hazardous Substance Storage Tank Removal Permit and Information Form. ○ Number of tanks to be removed: 2 (one 2,500-gallon unleaded and one 500-gallon diesel) (9/28/2002). • Unified Hazardous Waste and Hazardous Materials Management Regulatory Program – Annual Business Authorization/Permit ○ Permitted for Hazardous Materials Business Plan/Hazardous Materials Management Plan ○ Date issued: 7/1/2002, Expiration date: 6/30/2004. • Underground storage tank – removal/installation/closure inspection ○ Removal/closure in place (7/16/2002) • Hazardous waste operator inspection ○ Waste oil (330 gallons) (9/29/2003). • Hazardous Materials Release Response & Inventory Program Business Plan Validation & Site Inspection (9/29/2003) • Unified Hazardous Waste and Hazardous Materials Management Regulatory Program – Annual Business Authorization/Permit

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NAME OF AGENCY	RECORDS REVIEWED
	○ Permitted for hazardous materials business plan/hazardous materials management plan and hazardous waste generator ○ Date issued: 7/1/2004, Expiration date: 6/30/2005 • Unified Hazardous Waste and Hazardous Materials Management Regulatory Program – Annual Business Authorization/Permit ○ Permitted for hazardous materials business plan/hazardous materials management plan and hazardous waste generator ○ Date issued: 7/1/2005, expiration date: 6/30/2006 • Governor's Office of Emergency Services – Hazardous Materials Spill Report ○ Fresh rain water mixed with treated affluent (13/31/2005). • Unified Hazardous Waste and Hazardous Materials Management Regulatory Program – Annual Business Authorization/Permit ○ permitted for hazardous materials business plan/hazardous materials management plan and hazardous waste generator ○ Date issued: 7/1/2006, expiration date: 6/30/2007 • Hazardous waste operator inspection (4/13/2007). • Hazardous Materials Release Response & Inventory Program Business Plan Validation & Site Inspection (4/13/2007). • Unified Hazardous Waste and Hazardous Materials Management Regulatory Program – Annual Business Authorization/Permit ○ Permitted for hazardous materials business plan/hazardous materials management plan and hazardous waste generator ○ Date issued: 7/1/2007, expiration date: 6/30/2008 • Hazardous waste generator reporting form ○ Less than 5 tons generated (5/3/2008). • Unified Hazardous Waste and Hazardous Materials Management Regulatory Program – Annual Business Authorization/Permit ○ Permitted for hazardous materials business plan/hazardous materials management plan and hazardous waste generator ○ Date issued: 7/1/2008, expiration date: 6/30/2009 • Hazardous waste generator reporting form ○ Less than 5-gallons (2/25/2009). • Unified Hazardous Waste and Hazardous Materials Management Regulatory Program – Annual Business Authorization/Permit

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NAME OF AGENCY	RECORDS REVIEWED
	○ Permitted for hazardous materials business plan/hazardous materials management plan and hazardous waste generator ○ Date issued: 7/1/2009, expiration date: 6/30/2010 • Hazardous Materials Release Response & Inventory Program Business Plan Validation & Site Inspection Report (9/27/2009). • Hazardous waste generator reporting form ○ Less than 5-gallons (2/24/2010). • Unified Hazardous Waste and Hazardous Materials Management Regulatory Program – Annual Business Authorization/Permit ○ Permitted for hazardous materials business plan/hazardous materials management plan and hazardous waste generator ○ Date issued: 7/1/2010, Expiration date: 6/30/2011 • Hazardous materials business plan inspection/compliance checklist ○ No violations (10/31/2010). • Hazardous waste generator reporting form ○ Less than 0 tons (3/30/2011). • Hazardous materials business plan inspection/compliance checklist ○ No Violations (5/25/2011). • Unified Hazardous Waste and Hazardous Materials Management Regulatory Program – Annual Business Authorization/Permit ○ Permitted for hazardous materials business plan/hazardous materials management plan and hazardous waste generator ○ Date issued: 7/1/2011, expiration date: 6/30/2012 • Hazardous waste generator reporting form ○ Less than 1 ton (2/29/2012). • Hazardous Materials Programs Certified Unified Program – Permit to Operate ○ Permit valid 7/1/2012 through 6/30/2013 • Hazardous waste generator reporting form ○ 0 ton (2/28/2013). • Hazardous Materials Programs Certified Unified Program – Permit to Operate ○ Permit valid 7/1/2013 through 6/30/2014 • Hazardous Materials Programs Certified Unified Program – Permit to Operate ○ Permit valid 7/1/2014 through 6/30/2015 • Hazardous waste generator reporting form ○ 0.225 ton (3/1/2015). • Hazardous Materials Programs Certified Unified Program – Permit to Operate ○ Permit valid 7/1/2015 through 6/30/2016 • Hazardous waste generator reporting form

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NAME OF AGENCY	RECORDS REVIEWED
	○ 0 ton (3/1/2016). • DTSC EPA ID Profile ○ Last updated 11/27/2015 • Hazardous Materials Programs Certified Unified Program – Permit to Operate ○ Permit valid 7/1/2016 through 6/30/2017 • Hazardous waste generator reporting form ○ 0 ton (3/1/2016). • Hazardous waste generator reporting form ○ 0 ton (3/8/2018). • Hazardous Materials Programs Certified Unified Program – Permit to Operate ○ Permit valid 7/1/2018 through 6/30/2019
Contra Costa County Fire Department	A representative indicated that no files were available for review.
Contra Costa County Assessor's Office	We reviewed the assessor's online parcel map and confirmed the Property's APN.
Contra Costa County Public Works Department	A representative indicated that no files were available for review.
California State Water Resources Control Board	RWQCB personnel provided two reports to review. They are summarized in Section 2.2.
Department of Toxic Substances Control	We reviewed DTSC's online database, EnviroStor, and no records were available for review. DTSC was also contacted, and a representative indicated that no files were available for review pertaining to the Property.

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3.0 SITE RECONNAISSANCE

3.1 METHODOLOGY

ENGEO conducted a reconnaissance of the Property on December 5, 2018. The reconnaissance was performed by Taunee Werts, a Staff Environmental Geologist of ENGEO. The Property was viewed for hazardous materials storage, superficial staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or groundwater contamination. The Property was also checked for evidence of fill/ventilation pipes, ground subsidence, or other evidence of existing or preexisting underground storage tanks. Photographs taken during the site reconnaissance are presented in Figure 4.

3.2 GENERAL SITE SETTING

The Property is currently undeveloped land adjacent to a golf course.

3.3 EXTERIOR OBSERVATIONS

The following table summarizes our observations during the reconnaissance:

TABLE 3.3-1: Exterior Site Observations

FEATURE TYPE	OBSERVATIONS/
Structures	No structures were observed on the Property.
Hazardous Substances and Petroleum Products/Containers	No hazardous substances or petroleum products/containers were observed.
Storage Tanks (underground and above-ground)	No storage tanks (underground or above-ground) were observed.
Odors	No odors were observed.
Pools of Potentially Hazardous Liquid	No pools of potentially hazardous liquid were observed.
Drums	No drums were observed.
Polychlorinated Biphenyls (PCBs)	No PCBs were observed.
Pits, Ponds, and Lagoons	No pits, ponds, or lagoons were observed.
Stained Soil/Pavement	No stained soil/pavement were observed.
Stressed Vegetation	No stressed vegetation were observed.
Solid Waste/Debris	No solid waste/debris were observed.
Stockpiles/Fill Material	Soil stockpiles/fill material was observed on the Property.
Wastewater	No wastewater were observed.
Wells	No wells were observed.
Septic Systems	No septic systems were observed.

3.4 INTERIOR OBSERVATIONS

No structures were observed on the Property.

3.5 ASBESTOS-CONTAINING MATERIALS AND LEAD-BASED PAINT

An asbestos and lead-based paint survey was not conducted as part of this assessment. No structures are present at the Property.

3.6 INDOOR AIR QUALITY

An evaluation of indoor air quality, mold, or radon was not included as part of the contracted scope of services. The California Department of Health Services has conducted studies of radon risks throughout the state, sorted by zip code. Results of the studies indicate that 52 tests were conducted within the Property zip code, with none of the tests exceeding the current EPA action level of 4 picocuries per liter {pCi/L}[2]).

In accordance with ASTM E2600-15 (Tier 1) (*Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*); There are no potential petroleum hydrocarbon sources for vapor intrusion within 1/10 mile of the Property and no volatile organic compound (VOCs) sources within 1/3 mile of the Property. The Richmond Country Club previously had two USTs on site. The USTs were reportedly located at the southeastern portion of the Country Club

[2] California Department of Public Health – Radon Program– (https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/Radon/Radon%20Test%20Results.pdf).

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near the maintenance building. These tanks were located greater than 1,000 feet from the study area and do not pose a significant threat to the study area.

4.0 INTERVIEWS

Mr. Chris Zaballos completed the Client environmental site assessment questionnaire pertaining to applicable past and present uses and physical characteristics of the Property and surrounding properties. In the questionnaire, Mr. Zaballos identified the previous UST case; however, the UST case is not located in the proposed development area. The questionnaire is presented in its entirety in Appendix G.

Mr. Ralph Freightman, General Manager of the Richmond Country Club, provided a map indicating the location of the former USTs. Mr. Freightman confirmed that the tanks were located at the southeast corner of the Richmond Country Club. Mr. Freightman also completed the Key Site Manager environmental site assessment questionnaire pertaining to applicable past and present uses and physical characteristics of the Property and surrounding properties. In the questionnaire, Mr. Freightman identified that the study area had been used to dispose of organic waste (green waste). He noted that pits were dug to accommodate the green waste. The location of the pits is unknown. The questionnaire is presented in its entirety in Appendix G.

5.0 EVALUATION

5.1 OPINIONS AND DATA GAPS

It is our opinion that the findings of this study are based on a sufficient level of information obtained during our contracted scope of services to render a conclusion as to whether additional appropriate investigation is required to identify the presence or likely presence of a REC.

The following data gap was encountered:

- The Richmond Fire Department did not respond to our records request before the completion of this report.

The data gap identified during this process does is not expected to affect the conclusions as to the presence or lack of presence of RECs at the Property.

5.2 FINDINGS AND CONCLUSIONS

The study included a review of local, state and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources; a reconnaissance of the Property to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials; and interview with persons knowledgeable about current and past site use.

The site reconnaissance and records review did not find documentation or physical evidence of soil, groundwater, or soil gas impairments associated with the use or past use of the Property. A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge for the study area and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the Property.

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A closed LUST case was identified within the APN 405-050-006. The LUST case was closed in 2004. The case closure summary letter obtained from the Regional Water Quality Control Board is presented in Appendix H. Concentrations in soil at that time were below the laboratory reporting limits. Groundwater samples exhibited concentrations of TPH-g, TPH-d, toluene, and xylene(s) below residential screening levels. While a portion of this APN is included in the study area, the USTs were associated with the Richmond Country Club and do not pose a human health risk for the study area.

Based on the findings of this assessment, no RECs, no historical RECs, and no controlled RECs were identified for the Property.

Based on the review of regulatory databases and site reconnaissance, we present information on features of potential environmental concern that were either contained in the databases or observed on the Property. These features were not considered to be RECs. We briefly discuss each feature below:

- Undocumented fill has been placed over the years in the central and northern portion of the Property.

- BNSF railroad tracks are located along the western boundary of the study area.

- The Key Site Manager indicated that the Property has been used to dispose of organic waste, or “green waste.” Pits reportedly were dug to dispose of the green waste. The locations of the pits are unknown.

ENGEO has performed a phase I environmental site assessment in general conformance with the scope and limitations of ASTM E1527-13 and the standards and practices of the All Appropriate Inquiry – Final Rule (40 Code of Federal Regulations Part 312). This assessment has revealed no evidence of Recognized Environmental Conditions in connection with the Property.

ENGEO recommends the following:

- The source and contents of the existing undocumented fill placed at the Property has not been identified. It would be prudent to perform a preliminary soil sampling with laboratory analysis assessment to assess if the material poses a risk for redevelopment.

- A preliminary soil screening assessment of the western boundary of the Property, near the railroad corridor, should be performed to assess if past railroad activities have impacted near-surface soils.

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SELECTED REFERENCES

Dibblee, T.W, J.A. Geologic map of the Richmond quadrangle, Contra Costa & Alameda Counties, California: Dibblee Geologic Foundation, Dibblee Foundation Map (1994)
Google Maps (http://maps.google.com)

Technology, Engineering, and Construction, Inc. Accutite, Removal of Two Underground Storage Tanks From One Markovich Lane in Richmond, California, August 2002

Aqua Science Engineers, Inc. Soil and Groundwater Assessment at 1 Markovich Lane, Richmond, California, (ASE Job No. 3969), July 9, 2004

California Regional Water Quality Control Board, Closure Letter – Richmond Country Club, 1 Markovich Lane, Richmond, Contra Costa County. September 2004.

California Department of Water Resources (http://www.water.ca.gov/waterdatalibrary/)

California Department of Conservation (DOGGR) (http://maps.conservation.ca.gov/doms/doms-app.html)

California Department of Public Health – Radon Program– (https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/Radon/Radon%20Test%20Results.pdf).

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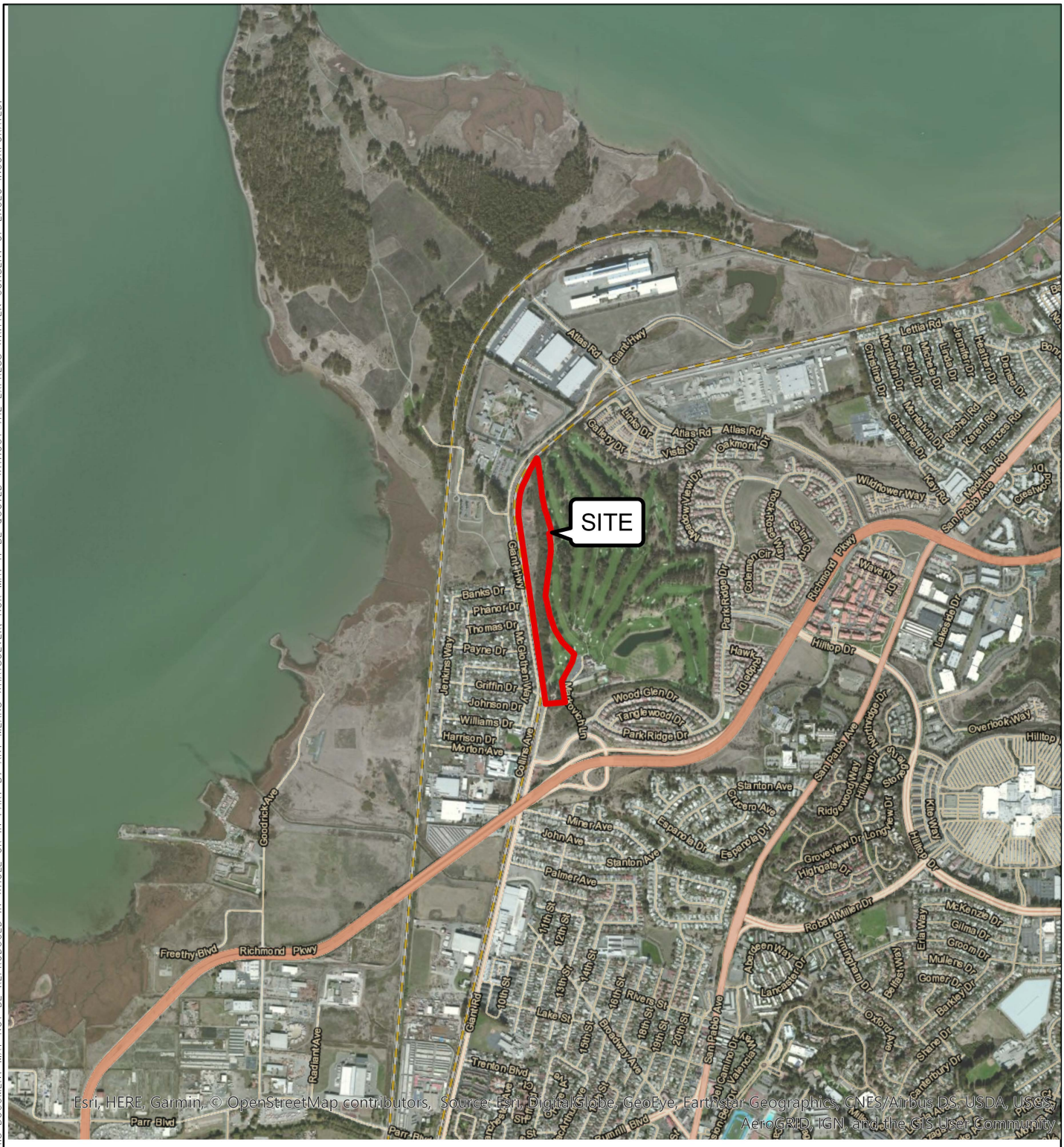


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FIGURES

FIGURE 1: Vicinity Map
FIGURE 2: Site Plan
FIGURE 3: Assessor's Parcel Map
FIGURE 4: Site Photographs

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FEET

ENGEO Expect Excellence

VICINITY MAP

RICHMOND COUNTRY CLUB

RICHMOND, CALIFORNIA

PROJECT NO. : 15693.000.000	FIGURE NO. 1
SCALE: AS SHOWN	
DRAWN BY: QRL	CHECKED BY: SRJ

PATH: G:\DRAFTING\DRAFTING2_DWG_13000 PLUS\15693\000\RICHMOND COUNTRY CLUB ESA.APRX
USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR



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0 250 500

FEET

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

PROJECT SITE

ENGEO Expect Excellence

SITE PLAN

RICHMOND COUNTRY CLUB

RICHMOND, CALIFORNIA

PROJECT NO. : 15693.000.000	FIGURE NO. 2
SCALE: AS SHOWN	
DRAWN BY: QRL	CHECKED BY: SRJ

PATH: G:\DRAFTING\DRAFTING2_DWG_13000 PLUS\15693\000\RICHMOND COUNTRY CLUB ESA.APRX

ORIGINAL FIGURE PRINTED IN COLOR

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0 250 500

FEET

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

PROJECT SITE

PARCEL BOUNDARY

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ASSESSOR'S PARCEL MAP

RICHMOND COUNTRY CLUB

RICHMOND, CALIFORNIA

PROJECT NO. :	15693.000.000
SCALE:	AS SHOWN
DRAWN BY:	QRL
CHECKED BY:	SRJ

FIGURE NO. 3

PATH: G:\DRAFTING\DRAFTING2_DWG_13000 PLUS\15693\000\RICHMOND COUNTRY CLUB ESA.APRX

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SANTA FE RAILROAD IN DISTANCE
BORDERING THE WEST SIDE
OF THE STUDY AREA



SOUTHERN PORTION ONSITE OF STUDY AREA



STOCKPILE ON CENTRAL PORTION
OF STUDY AREA AND IN THE DISTANCE
STOCKPILE WITH VEGETATION



STOCKPILE ON SOUTHERN
PORTION OF STUDY AREA



STOCKPILES ON CENTRAL PORTION OF STUDY AREA



STOCKPILES ON CENTRAL PORTION OF STUDY AREA

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SITE PHOTOGRAPHS
RICHMOND COUNTRY CLUB
RICHMOND, CALIFORNIA

PROJECT NO. : 15693.000.000
SCALE: NO SCALE
DRAWN BY: QRL | CHECKED BY: SRJ

FIGURE NO. 4

PATH: G:\DRAFTING\DRAFTING2_DWG_13000 PLUS\15693\000\RICHMOND COUNTRY CLUB ESA.APRX
USER: QLIANG

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APPENDIX A

ENVIRONMENTAL DATA RESOURCES, INC.

Radius Map Report

Richmond Country Club
1 Markovich Lane
San Pablo, CA 94806

Inquiry Number: 05504753.2r
December 06, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	388
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-10
Physical Setting Source Map Findings	A-12
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

1 MARKOVICH LANE
SAN PABLO, CA 94806

COORDINATES

Latitude (North):	37.9860670 - 37° 59' 9.84''
Longitude (West):	122.3507010 - 122° 21' 2.52''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	557019.2
UTM Y (Meters):	4204262.5
Elevation:	90 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5640624 RICHMOND, CA
Version Date:	2012
North Map:	5602140 MARE ISLAND, CA
Version Date:	2012
Southwest Map:	5641122 SAN QUENTIN, CA
Version Date:	2012
Northwest Map:	5602430 PETALUMA POINT, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140608
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
1 MARKOVICH LANE
SAN PABLO, CA 94806

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	RICHMOND COUNTRY CLU	1 MARKOVICH LN	RGA LUST		TP
A2	RICHMOND COUNTRY CLU	1 MARKOVICH LANE	FINDS		TP
A3	RICHMOND COUNTRY CLU	1 MARKOVICH LANE	CERS, CIWQS		TP
A4		1 MARKOVICH LANE	CHMIRS		TP
A5	RICHMOND COUNTRY CLU	1 MARKOVICH LN	FINDS		TP
A6	MICHAEL A SOUZA	1 MARKOVICH LN	PEST LIC		TP
A7	RICHMOND COUNTRY CLU	1 MARKOVICH LN	LUST, CERS HAZ WASTE, CONTRA COSTA CO. SITE LIST,...		TP
A8	RICHMOND COUNTRY CLU	1 MARKOVICH LN	LUST, UST		TP
A9	RICHMOND COUNTRY CLU	1 MARKOVICH LANE	HAZNET		TP
A10	RICHMOND GOLF COURSE	3900 GIANT RD	WDS	Higher	1 ft.
B11	W CNTY CONTRA COSTA	5555 GIANT HWY	SWEEPS UST, CA FID UST	Lower	150, 0.028, NNW
B12	WEST COUNTY DETENTIO	5555 GIANT RD	UST	Lower	173, 0.033, NNW
B13	ATLAS ROAD EXTENSION	5551 GIANT HWY	RCRA-LQG	Lower	178, 0.034, NNW
14	EPITOME TRANSPORTATI	5532 HORIZON DR	RCRA NonGen / NLR	Higher	295, 0.056, NNE
15	MELS TRUCKING	3705 WOODLAND PL	RCRA NonGen / NLR	Higher	408, 0.077, NE
C16	CCC WEST COUNTY DETE	5555 GIANT HWY	UST	Lower	525, 0.099, NNW
C17	TREE RESTORATION AT	5555 GIANT HIGHWAY	CERS HAZ WASTE, CERS TANKS, EMI, NPDES, CONTRA...	Lower	525, 0.099, NNW
18	AUTONATION/CHEVRON H	FORMER CHEVRON HILL	CPS-SLIC, CERS	Higher	684, 0.130, ENE
D19	UPS	1600 ATLAS RD	LUST, SWEEPS UST, HIST UST, CA FID UST, HIST...	Lower	895, 0.170, North
D20	POINT PINOLE REGIONA	ATLAS ROAD AT GIANT	ENVIROSTOR	Lower	914, 0.173, North
E21	FALCON SPIRITS DISTI	3701 COLLINS AVENUE	CERS HAZ WASTE, CERS	Lower	923, 0.175, SSW
E22	ATLAS FOUNDRY AND MA	3701 COLLINS AVENUE	ENVIROSTOR, CHMIRS, CONTRA COSTA CO. SITE LIST	Lower	923, 0.175, SSW
E23	FALCON SPIRITS DISTI	3701 COLLINS AVE 1B&	CONTRA COSTA CO. SITE LIST	Lower	923, 0.175, SSW
E24	ATLAS FOUNDRY & MFG	3701 COLLINS AVE	SEMS-ARCHIVE, PRP	Lower	923, 0.175, SSW
D25	PG&E POINT PINOLE SU	ATLAS & GIANT RD	CONTRA COSTA CO. SITE LIST	Lower	949, 0.180, North
E26	PACIFIC SITE MANAGEM	3655 COLLINS AVE	AST, DEED, HAZNET, NPDES, CONTRA COSTA CO. SITE...	Lower	1114, 0.211, SSW
27	BIO-RAD LABORATORIES	2500 ATLAS RD	CERS HAZ WASTE, CONTRA COSTA CO. SITE LIST, CERS	Lower	1261, 0.239, North
F28	KOPPERS, INC.	3501 COLLINS AVENUE	ENVIROSTOR, HIST UST, LDS, ENF, HAZNET, HIST...	Lower	1283, 0.243, SSW
F29	J J MAGANA CORP	3501 COLLINS AVE	SEMS-ARCHIVE, RCRA NonGen / NLR, FINDS, ECHO	Lower	1283, 0.243, SSW
F30	KOPPERS CO., INC.	3501 COLLINS AVE	HIST UST	Lower	1283, 0.243, SSW
31	CHEVRON USA INC SAN	GIANT RD & MINER AVE	SEMS-ARCHIVE, RCRA-SQG	Lower	1487, 0.282, SSW
32	REACTION PRODUCTS	840 MORTON AVENUE	RESPONSE, ENVIROSTOR, LUST, HIST Cal-Sites, LIENS,...	Lower	1512, 0.286, SW
G33	WITCO CHEM CORP	850 MORTON AVE	SEMS-ARCHIVE, CORRACTS, RCRA-TSDF, RCRA-SQG, US...	Lower	1600, 0.303, SW
G34	CHEMTURA	850 MORTON (3655 COL	DEED, ENF, CONTRA COSTA CO. SITE LIST, CIWQS	Lower	1600, 0.303, SW
G35	WITCO, U.S. PEROXYGE	850 MORTON AVENUE	Toxic Pits	Lower	1600, 0.303, SW
G36	CROMPTON CORPORATION	850 MORTON (3655 COL	WMUDS/SWAT, WDS	Lower	1600, 0.303, SW
37	DENNISON-EASTMAN CO	3451 COLLINS AVE	SEMS-ARCHIVE, RCRA-SQG, FINDS, ECHO	Lower	1619, 0.307, SSW
38	DENNISON EASTMAN COR	3451 COLLINS ST	RESPONSE, ENVIROSTOR, HIST Cal-Sites, CONTRA COSTA...	Lower	1842, 0.349, SSW
H39	STEELSCAPE INC.	2995 ATLAS ROAD	SEMS-ARCHIVE, RCRA-SQG	Lower	1850, 0.350, North

MAPPED SITES SUMMARY

Target Property Address:
1 MARKOVICH LANE
SAN PABLO, CA 94806

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
H40	BAY AREA INDUSTRIAL	2995 ATLAS ROAD	CPS-SLIC, HAZNET, NPDES, CERS	Lower	1850, 0.350, North
I41	PINOLE PT STEEL CO	5000 GIANT ROAD	WMUDS/SWAT	Lower	1922, 0.364, North
I42	POINT PINOLE PROPERT	5000 GIANT ROAD	HIST Cal-Sites	Lower	1922, 0.364, North
I43	PINOLE POINT STEEL C	5000 GIANT RD	SWEEPS UST, CA FID UST, HWP	Lower	1922, 0.364, North
I44	MSC PINOLE POINT STE	5000 GIANT ROAD	CA BOND EXP. PLAN, EMI, CIWQS	Lower	1922, 0.364, North
I45	PINOLE POINT STEEL	5000 GIANT	RESPONSE, ENVIROSTOR, DEED, LDS, ENF, HIST...	Lower	1922, 0.364, North
I46	PINOLE POINT, OLD BE	5000 GIANT ROAD	Toxic Pits, EMI	Lower	1922, 0.364, North
47	LAZY J RANCH/CHEVRON	3001 GIANT RD	CPS-SLIC, CERS	Lower	2139, 0.405, SSW
48	MI-JACK PRODUCTS, IN	1601 ATLAS RD	ENVIROSTOR, AST, CERS HAZ WASTE, CERS TANKS,...	Lower	2144, 0.406, ENE
49	CHEVRON HILLTOP WEST	ATLAS ROAD AND SAN P	ENVIROSTOR	Higher	2215, 0.420, ENE
50	PARKWAY TRANSIT VILL	NORTH END OF GOODRIC	ENVIROSTOR, VCP, DEED	Lower	2364, 0.448, WSW
51	BERLEX LABORATORIES	15049 SAN PABLO AVE	ENVIROSTOR, LUST, SWEEPS UST, HIST UST, CA FID...	Higher	2776, 0.526, SE
52	MONTALVIN MANOR	CHRISTINE DR.	ENVIROSTOR	Lower	3021, 0.572, NE
53	CA AUTISM FOUND., A	4075 LAKESIDE DR	ENVIROSTOR	Higher	3244, 0.614, East
J54	AMERICAN STANDARD PR	3002 GIANT ROAD	RESPONSE, ENVIROSTOR, DEED, HIST CORTESE, CONTRA	Lower	3391, 0.642, SSW
J55	AMERICAN STANDARD PR	3002 GIANT ROAD	HIST Cal-Sites, CA BOND EXP. PLAN	Lower	3391, 0.642, SSW
K56	TRIPLE A MACHINE SHO	2801 GIANT ROAD	HIST Cal-Sites, CA BOND EXP. PLAN, EMI	Lower	3522, 0.667, SSW
K57	COOPER CHEMICAL	2801 GIANT ROAD	RESPONSE, ENVIROSTOR, AST, DEED, Cortese, HIST...	Lower	3522, 0.667, SSW
58	ACME TRANSPORTATION	2832 GIANT RD.	ENVIROSTOR, LUST, HIST UST, DEED, HIST CORTESE,...	Lower	3709, 0.702, SSW
59	HILDRETH HOLDINGS	2812 GIANT ROAD	RESPONSE, ENVIROSTOR, CPS-SLIC, DEED, HIST...	Lower	4148, 0.786, SSW
60	PT. PINOLE REGIONAL		Notify 65	Higher	4553, 0.862, NW
61	RADIANT COLOR	2800 RADIANT AVE	RCRA-SQG, ENVIROSTOR, CHMIRS, FTTS, HIST FTTS, WDS	Lower	4807, 0.910, SSW
62	STAUFFER CHEM CO RIC	525 MAAS AVE	SEMS-ARCHIVE, RCRA-LQG, ENVIROSTOR, CPS-SLIC,...	Lower	5090, 0.964, SW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
RICHMOND COUNTRY CLU 1 MARKOVICH LN RICHMOND, CA	RGA LUST	N/A
RICHMOND COUNTRY CLU 1 MARKOVICH LANE RICHMOND, CA 94806	FINDS Registry ID:: 110065508141	N/A
RICHMOND COUNTRY CLU 1 MARKOVICH LANE RICHMOND, CA 94806	CERS CIWQS	N/A
1 MARKOVICH LANE 1 MARKOVICH LANE RICHMOND, CA 94806	CHMIRS OES Incident Number: 6-0232	N/A
RICHMOND COUNTRY CLU 1 MARKOVICH LN RICHMOND, CA 94806	FINDS Registry ID:: 110055867860	N/A
MICHAEL A SOUZA 1 MARKOVICH LN RICHMOND, CA 94806	PEST LIC	N/A
RICHMOND COUNTRY CLU 1 MARKOVICH LN RICHMOND, CA 94806	LUST Database: LUST, Date of Government Version: 09/10/2018 Status: Completed - Case Closed Global Id: T0601334138 CERS HAZ WASTE CONTRA COSTA CO. SITE LIST Facility Id: FA0033060 CERS	N/A
RICHMOND COUNTRY CLU 1 MARKOVICH LN SAN PABLO, CA 94806	LUST Database: LUST REG 2, Date of Government Version: 09/30/2004 Facility Id: 07-0842 Facility Status: Case Closed date9: 9/17/2004 UST Database: UST, Date of Government Version: 09/10/2018	N/A

EXECUTIVE SUMMARY

Facility Id: 770539

RICHMOND COUNTRY CLU
1 MARKOVICH LANE
RICHMOND, CA 94806

HAZNET
GEPAID: CAL000111680

N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal RCRA generators list

RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

EXECUTIVE SUMMARY

State and tribal registered storage tank lists

FEMA UST ---- Underground Storage Tank Listing
INDIAN UST ---- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ---- Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY ---- Recycler Database
HAULERS ---- Registered Waste Tire Haulers Listing
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands
ODI ---- Open Dump Inventory
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ---- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
US CDL ---- National Clandestine Laboratory Register

Local Land Records

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information

EXECUTIVE SUMMARY

EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
UXO	Unexploded Ordnance Sites
ECHO	Enforcement & Compliance History Information
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
ICE	ICE
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PROC	Certified Processors Database
UIC	UIC Listing
WASTEWATER PITS	Oil Wastewater Pits Listing
WIP	Well Investigation Program Case List
SAMPLING POINT	SAMPLING POINT (GEOTRACKER)
OTHER OIL GAS	OTHER OIL & GAS (GEOTRACKER)
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
NON-CASE INFO	NON-CASE INFO (GEOTRACKER)
PROD WATER PONDS	PROD WATER PONDS (GEOTRACKER)
UIC GEO	UIC GEO (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)
WDR	Waste Discharge Requirements Listing
WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP---------- EDR Proprietary Manufactured Gas Plants
EDR Hist Auto---------- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner---------- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF---------- Recovered Government Archive Solid Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

A review of the SEMS-ARCHIVE list, as provided by EDR, and dated 08/13/2018 has revealed that there are 6 SEMS-ARCHIVE sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ATLAS FOUNDRY & MFG Site ID: 0900062	***3701 COLLINS AVE***	***SSW 1/8 - 1/4 (0.175 mi.)***	***E24***	***78***

EPA Id: CAD982359143				
J J MAGANA CORP	***3501 COLLINS AVE***	***SSW 1/8 - 1/4 (0.243 mi.)***	***F29***	***107***
Site ID: 0901350				
EPA Id: CAD043242718				
CHEVRON USA INC SAN	***GIANT RD & MINER AVE***	***SSW 1/4 - 1/2 (0.282 mi.)***	***31***	***112***
Site ID: 0903189				
EPA Id: CAD000625913				
WITCO CHEM CORP	***850 MORTON AVE***	***SW 1/4 - 1/2 (0.303 mi.)***	***G33***	***129***
Site ID: 0903111				
EPA Id: CAD009137779				
DENNISON-EASTMAN CO	***3451 COLLINS AVE***	***SSW 1/4 - 1/2 (0.307 mi.)***	***37***	***179***
Site ID: 0905366				
EPA Id: CAD001016286				
STEELSCAPE INC.	***2995 ATLAS ROAD***	***N 1/4 - 1/2 (0.350 mi.)***	***H39***	***189***
Site ID: 0902677				
EPA Id: CAT080012354				

Federal RCRA CORRACTS facilities list

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WITCO CHEM CORP	***850 MORTON AVE***	***SW 1/4 - 1/2 (0.303 mi.)***	***G33***	***129***
EPA ID:: CAD009137779				

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-TSDF list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 RCRA-TSDF site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WITCO CHEM CORP	***850 MORTON AVE***	***SW 1/4 - 1/2 (0.303 mi.)***	***G33***	***129***
EPA ID:: CAD009137779				

EXECUTIVE SUMMARY

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 RCRA-LQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ATLAS ROAD EXTENSION EPA ID:: CAP000272278	5551 GIANT HWY	NNW 0 - 1/8 (0.034 mi.)	B13	28

Federal institutional controls / engineering controls registries

US INST CONTROL: A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

A review of the US INST CONTROL list, as provided by EDR, and dated 07/31/2018 has revealed that there is 1 US INST CONTROL site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WITCO CHEM CORP EPA ID:: CAD009137779	***850 MORTON AVE***	***SW 1/4 - 1/2 (0.303 mi.)***	***G33***	***129***

State- and tribal - equivalent NPL

RESPONSE: Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

A review of the RESPONSE list, as provided by EDR, has revealed that there are 6 RESPONSE sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
REACTION PRODUCTS AWP Facility Id: 07280013 Status: Active Facility Id: 7280013	***840 MORTON AVENUE***	***SW 1/4 - 1/2 (0.286 mi.)***	***32***	***114***
DENNISON EASTMAN COR AWP Facility Id: 07390027 Status: No Further Action Facility Id: 7390027	***3451 COLLINS ST***	***SSW 1/4 - 1/2 (0.349 mi.)***	***38***	***181***
PINOLE POINT STEEL Database: RESPONSE, Date of Government Version: 07/30/2018	***5000 GIANT***	***N 1/4 - 1/2 (0.364 mi.)***	***I45***	***217***

Status: Certified O&M - Land Use Restrictions Only
Facility Id: 7340065

AMERICAN STANDARD PR ***3002 GIANT ROAD*** ***SSW 1/2 - 1 (0.642 mi.)*** ***J54*** ***307***
Database: RESPONSE, Date of Government Version: 07/30/2018
Status: Certified O&M - Land Use Restrictions Only
Facility Id: 7320035
Facility Id: 7320036
Facility Id: 7320037

COOPER CHEMICAL ***2801 GIANT ROAD*** ***SSW 1/2 - 1 (0.667 mi.)*** ***K57*** ***350***
Database: RESPONSE, Date of Government Version: 07/30/2018
Status: Certified / Operation & Maintenance
Facility Id: 7280154

HILDRETH HOLDINGS ***2812 GIANT ROAD*** ***SSW 1/2 - 1 (0.786 mi.)*** ***59*** ***359***
Database: RESPONSE, Date of Government Version: 07/30/2018
Status: Refer: Other Agency
Facility Id: 7410002

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 07/30/2018 has revealed that there are 19 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CHEVRON HILLTOP WEST Facility Id: 7290028 Status: Refer: RWQCB	ATLAS ROAD AND SAN P	ENE 1/4 - 1/2 (0.420 mi.)	49	284
BERLEX LABORATORIES Facility Id: 7290041 Status: Refer: Other Agency	***15049 SAN PABLO AVE***	***SE 1/2 - 1 (0.526 mi.)***	***51***	***298***
CA AUTISM FOUND., A Facility Id: 7830004 Status: No Action Required	4075 LAKESIDE DR	E 1/2 - 1 (0.614 mi.)	53	306

Lower Elevation	Address	Direction / Distance	Map ID	Page
POINT PINOLE REGIONA Facility Id: 7840001 Status: Refer: RWQCB	ATLAS ROAD AT GIANT	N 1/8 - 1/4 (0.173 mi.)	D20	69
ATLAS FOUNDRY AND MA	***3701 COLLINS AVENUE***	***SSW 1/8 - 1/4 (0.175 mi.)***	***E22***	***75***

Facility Id: 7330028 Status: No Further Action				
KOPPERS, INC. Facility Id: 7280078 Status: Refer: RWQCB	***3501 COLLINS AVENUE***	***SSW 1/8 - 1/4 (0.243 mi.)***	***F28***	***94***
REACTION PRODUCTS Facility Id: 7280013 Status: Active	***840 MORTON AVENUE***	***SW 1/4 - 1/2 (0.286 mi.)***	***32***	***114***
WITCO CHEM CORP Facility Id: 7280102 Facility Id: 80001603 Status: Refer: RCRA Status: Active	***850 MORTON AVE***	***SW 1/4 - 1/2 (0.303 mi.)***	***G33***	***129***
DENNISON EASTMAN COR Facility Id: 7390027 Status: No Further Action	***3451 COLLINS ST***	***SSW 1/4 - 1/2 (0.349 mi.)***	***38***	***181***
PINOLE POINT STEEL Facility Id: 71003526 Facility Id: 80001839 Facility Id: 7340065 Status: Inactive - Needs Evaluation Status: Refer: RWQCB Status: Certified O&M - Land Use Restrictions Only	***5000 GIANT***	***N 1/4 - 1/2 (0.364 mi.)***	***I45***	***217***
MI-JACK PRODUCTS, IN Facility Id: 7330012 Status: Refer: RWQCB	***1601 ATLAS RD***	***ENE 1/4 - 1/2 (0.406 mi.)***	***48***	***233***
PARKWAY TRANSIT VILL Facility Id: 70000184 Status: Certified O&M - Land Use Restrictions Only	***NORTH END OF GOODRIC***	***WSW 1/4 - 1/2 (0.448 mi.)***	***50***	***285***
MONTALVIN MANOR Facility Id: 7330017 Status: No Further Action	CHRISTINE DR.	NE 1/2 - 1 (0.572 mi.)	52	305
AMERICAN STANDARD PR Facility Id: 7320037 Facility Id: 7320035 Facility Id: 7320036 Status: Certified O&M - Land Use Restrictions Only	***3002 GIANT ROAD***	***SSW 1/2 - 1 (0.642 mi.)***	***J54***	***307***
COOPER CHEMICAL Facility Id: 7280154 Status: Certified / Operation & Maintenance	***2801 GIANT ROAD***	***SSW 1/2 - 1 (0.667 mi.)***	***K57***	***350***
ACME TRANSPORTATION Facility Id: 7750002 Status: Refer: RWQCB	***2832 GIANT RD.***	***SSW 1/2 - 1 (0.702 mi.)***	***58***	***354***
HILDRETH HOLDINGS Facility Id: 7410002 Status: Refer: Other Agency	***2812 GIANT ROAD***	***SSW 1/2 - 1 (0.786 mi.)***	***59***	***359***
RADIANT COLOR Facility Id: 7320038 Status: Inactive - Needs Evaluation	***2800 RADIANT AVE***	***SSW 1/2 - 1 (0.910 mi.)***	***61***	***362***
STAUFFER CHEM CO RIC	***525 MAAS AVE***	***SW 1/2 - 1 (0.964 mi.)***	***62***	***372***

Facility Id: 7280072
Status: Refer: RWQCB

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
UPS	***1600 ATLAS RD***	***N 1/8 - 1/4 (0.170 mi.)***	***D19***	***56***
Database: LUST, Date of Government Version: 09/10/2018 Database: LUST REG 2, Date of Government Version: 09/30/2004 Status: Completed - Case Closed Facility Id: 07-0368 Facility Status: Case Closed Global Id: T0601300342 date9: 6/29/1998				
REACTION PRODUCTS	***840 MORTON AVENUE***	***SW 1/4 - 1/2 (0.286 mi.)***	***32***	***114***
Database: LUST, Date of Government Version: 09/10/2018 Database: LUST REG 2, Date of Government Version: 09/30/2004 Status: Completed - Case Closed Facility Id: 07-0249 Facility Status: Case Closed Global Id: T0601300231 date9: 1/10/1996				

CPS-SLIC: Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the CPS-SLIC list, as provided by EDR, has revealed that there are 3 CPS-SLIC sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AUTONATION/CHEVRON H	***FORMER CHEVRON HILL***	***ENE 1/8 - 1/4 (0.130 mi.)***	***18***	***55***
Database: SLIC REG 2, Date of Government Version: 09/30/2004 Database: CPS-SLIC, Date of Government Version: 09/10/2018 Facility Status: Completed - Case Closed Facility Id: 2119.1226 Global Id: SL601392515				

Lower Elevation	Address	Direction / Distance	Map ID	Page
BAY AREA INDUSTRIAL	***2995 ATLAS ROAD***	***N 1/4 - 1/2 (0.350 mi.)***	***H40***	***195***
Database: CPS-SLIC, Date of Government Version: 09/10/2018				

Facility Status: Open - Remediation
Global Id: T10000005830

LAZY J RANCH/CHEVRON ***3001 GIANT RD*** ***SSW 1/4 - 1/2 (0.405 mi.)*** ***47*** ***232***
Database: SLIC REG 2, Date of Government Version: 09/30/2004
Database: CPS-SLIC, Date of Government Version: 09/10/2018
Facility Status: Completed - Case Closed
Facility Id: SL18281702
Global Id: SL18281702

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WEST COUNTY DETENTIO	5555 GIANT RD	NNW 0 - 1/8 (0.033 mi.)	B12	28
Database: UST, Date of Government Version: 09/10/2018 Facility Id: 771137				
CCC WEST COUNTY DETE	5555 GIANT HWY	NNW 0 - 1/8 (0.099 mi.)	C16	32
Database: UST, Date of Government Version: 09/10/2018 Facility Id: 07-000-771137				

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, has revealed that there is 1 AST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PACIFIC SITE MANAGEM	***3655 COLLINS AVE***	***SSW 1/8 - 1/4 (0.211 mi.)***	***E26***	***79***
Database: AST, Date of Government Version: 07/06/2016				

State and tribal voluntary cleanup sites

VCP: Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

A review of the VCP list, as provided by EDR, and dated 07/30/2018 has revealed that there is 1 VCP site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PARKWAY TRANSIT VILL	***NORTH END OF GOODRIC***	***WSW 1/4 - 1/2 (0.448 mi.)***	***50***	***285***

Status: Certified O&M - Land Use Restrictions Only
Facility Id: 70000184

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, and dated 04/01/2000 has revealed that there are 2 WMUDS/SWAT sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CROMPTON CORPORATION	***850 MORTON (3655 COL***	***SW 1/4 - 1/2 (0.303 mi.)***	***G36***	***176***
PINOLE PT STEEL CO	5000 GIANT ROAD	N 1/4 - 1/2 (0.364 mi.)	I41	204

Local Lists of Hazardous waste / Contaminated Sites

HIST Cal-Sites: Formerly known as ASPIS, this database contains both known and potential hazardous substance sites. The source is the California Department of Toxic Substance Control. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

A review of the HIST Cal-Sites list, as provided by EDR, and dated 08/08/2005 has revealed that there are 5 HIST Cal-Sites sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
REACTION PRODUCTS	***840 MORTON AVENUE***	***SW 1/4 - 1/2 (0.286 mi.)***	***32***	***114***
DENNISON EASTMAN COR	***3451 COLLINS ST***	***SSW 1/4 - 1/2 (0.349 mi.)***	***38***	***181***
POINT PINOLE PROPERT	5000 GIANT ROAD	N 1/4 - 1/2 (0.364 mi.)	I42	205
AMERICAN STANDARD PR	***3002 GIANT ROAD***	***SSW 1/2 - 1 (0.642 mi.)***	***J55***	***313***
TRIPLE A MACHINE SHO	***2801 GIANT ROAD***	***SSW 1/2 - 1 (0.667 mi.)***	***K56***	***337***

Toxic Pits: The Toxic Pits Cleanup Act Sites database identifies sites suspected of containing hazardous substances where cleanup has not yet been completed. The data come from the State Water Resources Control Board.

A review of the Toxic Pits list, as provided by EDR, and dated 07/01/1995 has revealed that there are 2 Toxic Pits sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WITCO, U.S. PEROXYGE Closure Date: 07/25/91 Task #: 82022 Status: CLOSED	850 MORTON AVENUE	SW 1/4 - 1/2 (0.303 mi.)	G35	176
PINOLE POINT, OLD BE	***5000 GIANT ROAD***	***N 1/4 - 1/2 (0.364 mi.)***	***I46***	***231***

Closure Date: 06/30/92
Task #: 82009
Status: CLOSED

CERS HAZ WASTE: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 10/22/2018 has revealed that there are 3 CERS HAZ WASTE sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
TREE RESTORATION AT	***5555 GIANT HIGHWAY***	***NNW 0 - 1/8 (0.099 mi.)***	***C17***	***32***
FALCON SPIRITS DISTI	***3701 COLLINS AVENUE***	***SSW 1/8 - 1/4 (0.175 mi.)***	***E21***	***70***
BIO-RAD LABORATORIES	***2500 ATLAS RD***	***N 1/8 - 1/4 (0.239 mi.)***	***27***	***88***

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 2 SWEEPS UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
W CNTY CONTRA COSTA Status: A Tank Status: A Comp Number: 71137	***5555 GIANT HWY***	***NNW 0 - 1/8 (0.028 mi.)***	***B11***	***27***
UPS Comp Number: 19474	***1600 ATLAS RD***	***N 1/8 - 1/4 (0.170 mi.)***	***D19***	***56***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 3 HIST UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
UPS	***1600 ATLAS RD***	***N 1/8 - 1/4 (0.170 mi.)***	***D19***	***56***
KOPPERS, INC.	***3501 COLLINS AVENUE***	***SSW 1/8 - 1/4 (0.243 mi.)***	***F28***	***94***
KOPPERS CO., INC. Facility Id: 00000004626	3501 COLLINS AVE	SSW 1/8 - 1/4 (0.243 mi.)	F30	111

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 2 CA FID UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
W CNTY CONTRA COSTA Facility Id: 07001622 Status: A	***5555 GIANT HWY***	***NNW 0 - 1/8 (0.028 mi.)***	***B11***	***27***
UPS Facility Id: 07000450 Status: I	***1600 ATLAS RD***	***N 1/8 - 1/4 (0.170 mi.)***	***D19***	***56***

CERS TANKS: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

A review of the CERS TANKS list, as provided by EDR, and dated 10/22/2018 has revealed that there is 1 CERS TANKS site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
TREE RESTORATION AT	***5555 GIANT HIGHWAY***	***NNW 0 - 1/8 (0.099 mi.)***	***C17***	***32***

Local Land Records

DEED: The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes .

A review of the DEED list, as provided by EDR, and dated 09/04/2018 has revealed that there are 5 DEED sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PACIFIC SITE MANAGEM	***3655 COLLINS AVE***	***SSW 1/8 - 1/4 (0.211 mi.)***	***E26***	***79***
WITCO CHEM CORP Status: ACTIVE Envirostor ID: 80001603	***850 MORTON AVE***	***SW 1/4 - 1/2 (0.303 mi.)***	***G33***	***129***
CHEMTURA Status: UNDERGOING CLOSURE Envirostor ID: CAD009137779	***850 MORTON (3655 COL***	***SW 1/4 - 1/2 (0.303 mi.)***	***G34***	***173***
PINOLE POINT STEEL Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY Envirostor ID: 7340065	***5000 GIANT***	***N 1/4 - 1/2 (0.364 mi.)***	***I45***	***217***
PARKWAY TRANSIT VILL Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY Envirostor ID: 70000184	***NORTH END OF GOODRIC***	***WSW 1/4 - 1/2 (0.448 mi.)***	***50***	***285***

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/01/2018 has revealed that there are 3 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
EPITOME TRANSPORTATI EPA ID:: CAR000181719	5532 HORIZON DR	NNE 0 - 1/8 (0.056 mi.)	14	29
MELS TRUCKING EPA ID:: CAR000210872	3705 WOODLAND PL	NE 0 - 1/8 (0.077 mi.)	15	31

Lower Elevation	Address	Direction / Distance	Map ID	Page
J J MAGANA CORP EPA ID:: CAD043242718	***3501 COLLINS AVE***	***SSW 1/8 - 1/4 (0.243 mi.)***	***F29***	***107***

CA BOND EXP. PLAN: Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

A review of the CA BOND EXP. PLAN list, as provided by EDR, and dated 01/01/1989 has revealed that there are 3 CA BOND EXP. PLAN sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MSC PINOLE POINT STE	***5000 GIANT ROAD***	***N 1/4 - 1/2 (0.364 mi.)***	***I44***	***214***
AMERICAN STANDARD PR	***3002 GIANT ROAD***	***SSW 1/2 - 1 (0.642 mi.)***	***J55***	***313***
TRIPLE A MACHINE SHO	***2801 GIANT ROAD***	***SSW 1/2 - 1 (0.667 mi.)***	***K56***	***337***

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 09/24/2018 has revealed that there is 1 Cortese site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
REACTION PRODUCTS Envirostor Id: 7280013 Cleanup Status: ACTIVE	***840 MORTON AVENUE***	***SW 1/4 - 1/2 (0.286 mi.)***	***32***	***114***

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 4 HIST CORTESE sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
UPS Reg Id: 07-0368	***1600 ATLAS RD***	***N 1/8 - 1/4 (0.170 mi.)***	***D19***	***56***
KOPPERS, INC. Reg Id: 2 071141N01	***3501 COLLINS AVENUE***	***SSW 1/8 - 1/4 (0.243 mi.)***	***F28***	***94***
REACTION PRODUCTS Reg Id: 07280013 Reg Id: 07-0249	***840 MORTON AVENUE***	***SW 1/4 - 1/2 (0.286 mi.)***	***32***	***114***
PINOLE POINT STEEL Reg Id: 2 071063001	***5000 GIANT***	***N 1/4 - 1/2 (0.364 mi.)***	***I45***	***217***

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 08/20/2018 has revealed that there are 2 HWP sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WITCO CHEM CORP EPA Id: CAD009137779 Cleanup Status: UNDERGOING CLOSURE	***850 MORTON AVE***	***SW 1/4 - 1/2 (0.303 mi.)***	***G33***	***129***
PINOLE POINT STEEL C EPA Id: CAT080012354 Cleanup Status: CLOSED	***5000 GIANT RD***	***N 1/4 - 1/2 (0.364 mi.)***	***I43***	***212***

Notify 65: Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

A review of the Notify 65 list, as provided by EDR, and dated 09/19/2018 has revealed that there is 1 Notify 65 site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PT. PINOLE REGIONAL		NW 1/2 - 1 (0.862 mi.)	60	362

CONTRA COSTA CO. SITE LIST: Lists includes sites from the Underground Tank Program, Hazardous Waste Generator Program & Business Plan 12185 Program

A review of the CONTRA COSTA CO. SITE LIST list, as provided by EDR, and dated 08/20/2018 has revealed that there are 8 CONTRA COSTA CO. SITE LIST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
TREE RESTORATION AT Facility Id: FA0027913	***5555 GIANT HIGHWAY***	***NNW 0 - 1/8 (0.099 mi.)***	***C17***	***32***
UPS Facility Id: FA0029826	***1600 ATLAS RD***	***N 1/8 - 1/4 (0.170 mi.)***	***D19***	***56***
ATLAS FOUNDRY AND MA Facility Id: FA0032789	***3701 COLLINS AVENUE***	***SSW 1/8 - 1/4 (0.175 mi.)***	***E22***	***75***
FALCON SPIRITS DISTI Facility Id: FA0033887	3701 COLLINS AVE 1B&	SSW 1/8 - 1/4 (0.175 mi.)	E23	77
PG&E POINT PINOLE SU Facility Id: FA0029119	ATLAS & GIANT RD	N 1/8 - 1/4 (0.180 mi.)	D25	79
PACIFIC SITE MANAGEM Facility Id: FA0029492	***3655 COLLINS AVE***	***SSW 1/8 - 1/4 (0.211 mi.)***	***E26***	***79***
BIO-RAD LABORATORIES Facility Id: FA0030896	***2500 ATLAS RD***	***N 1/8 - 1/4 (0.239 mi.)***	***27***	***88***
KOPPERS, INC. Facility Id: FA0030564	***3501 COLLINS AVENUE***	***SSW 1/8 - 1/4 (0.243 mi.)***	***F28***	***94***

WDS: California Water Resources Control Board - Waste Discharge System.

A review of the WDS list, as provided by EDR, and dated 06/19/2007 has revealed that there is 1 WDS site within approximately 0.001 miles of the target property.

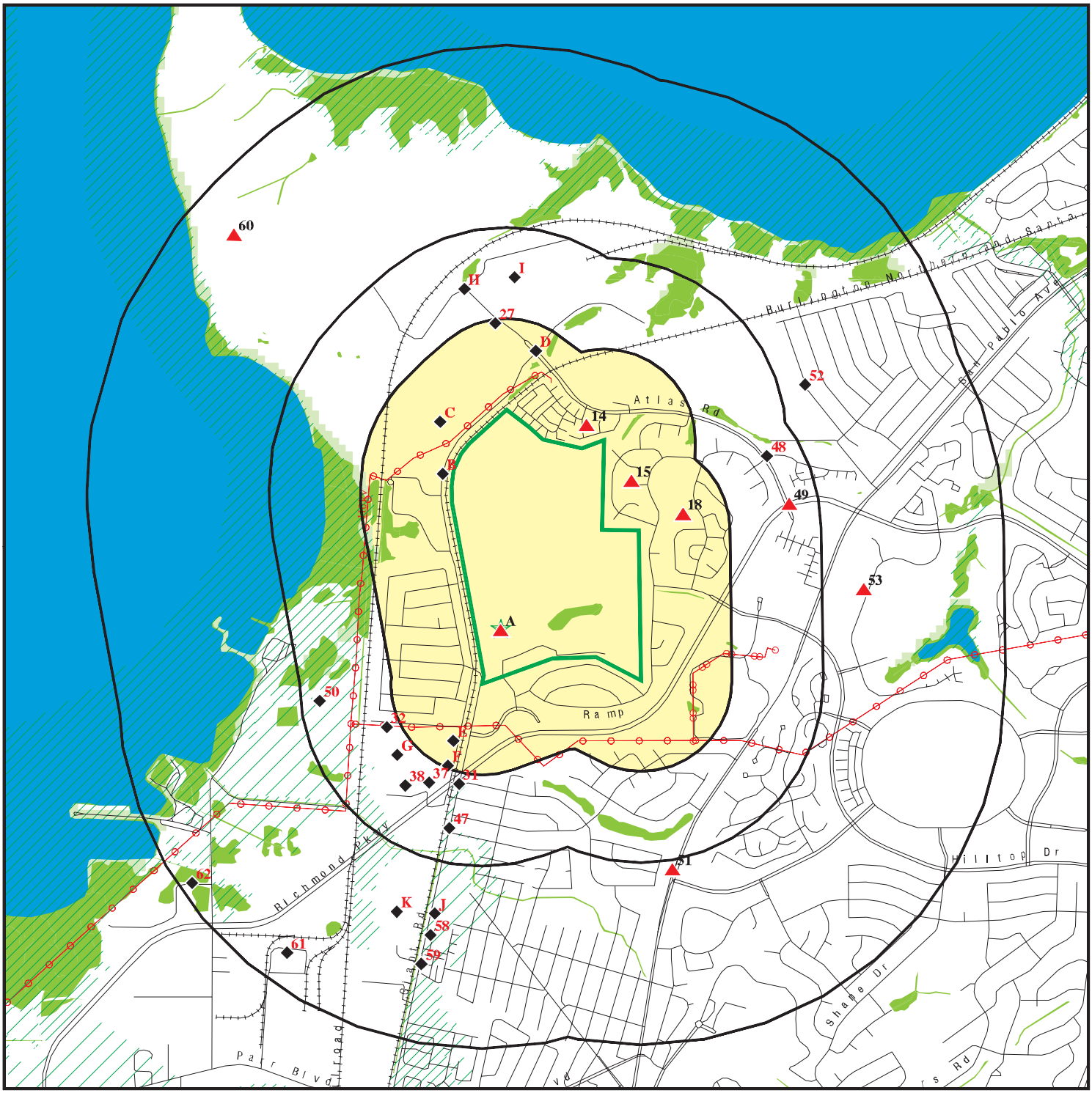
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RICHMOND GOLF COURSE Facility Status: A Facility Id: 2 071040002	3900 GIANT RD	0 - 1/8 (0.000 mi.)	A10	26

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 11 records.

Site Name	Database(s)
GOLDEN STATE FC LLC - DSF6	CERS HAZ WASTE, CERS
COUNTRY CLUB VISTA	CIWQS
BLUE SKY SPORTS	SEMS
SAN PABLO BAY SPORTSMENS CLUB	SEMS-ARCHIVE
CHEVRON SERVICE STATION 9-0222	LUST
POINT ISABEL PARK TRAIL	CPS-SLIC
CATELLUS DEVELOPMENT CORP	CPS-SLIC
TERMINAL ONE RICHMOND	CPS-SLIC
SEACLIFF VILLAS	CPS-SLIC
SANTA FE POINT ISABEL FORMER	CPS-SLIC
CHEVRON LAND AND DEVELOPMENT	ENVIROSTOR

OVERVIEW MAP - 05504753.2R



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Richmond Country Club	CLIENT:	Engeo Inc.
ADDRESS:	1 Markovich Lane San Pablo CA 94806	CONTACT:	Taunee Werts
		INQUIRY #:	05504753.2r
LAT/LONG:	37.986067 / 122.350701	DATE:	December 06, 2018 2:37 pm

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DETAIL MAP - 05504753.2R



SITE NAME:	Richmond Country Club	CLIENT:	Engeo Inc.
ADDRESS:	1 Markovich Lane San Pablo CA 94806	CONTACT:	Taunee Werts
		INQUIRY #:	05504753.2r
LAT/LONG:	37.986067 / 122.350701	DATE:	December 06, 2018 2:41 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	2	4	NR	NR	6
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	1	0	NR	1
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	1	NR	NR	1
Federal RCRA generators list								
RCRA-LQG	0.250		1	0	NR	NR	NR	1
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	1	NR	NR	1
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	3	3	NR	6
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	3	7	9	NR	19
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500	2	0	1	1	NR	NR	4

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	1	2	NR	NR	3
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250	1	2	0	NR	NR	NR	3
AST	0.250		0	1	NR	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	1	NR	NR	1
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	2	NR	NR	2
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	3	2	NR	5
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	2	0	NR	2
CERS HAZ WASTE	0.250	1	1	2	NR	NR	NR	4
US CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		1	1	NR	NR	NR	2
HIST UST	0.250		0	3	NR	NR	NR	3
CA FID UST	0.250		1	1	NR	NR	NR	2
CERS TANKS	0.250		1	0	NR	NR	NR	1
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DEED	0.500		0	1	4	NR	NR	5
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001	1	0	NR	NR	NR	NR	1
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		2	1	NR	NR	NR	3
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.001		0	NR	NR	NR	NR	0
FINDS	0.001	2	0	NR	NR	NR	NR	2
UXO	1.000		0	0	0	0	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	1	2	NR	3
Cortese	0.500		0	0	1	NR	NR	1
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001	1	0	NR	NR	NR	NR	1
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	2	2	NR	NR	4
HWP	1.000		0	0	2	0	NR	2
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.001		0	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001	1	0	NR	NR	NR	NR	1
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	1	NR	1
CONTRA COSTA CO. SITE LIST	0.250	1	1	7	NR	NR	NR	9
UIC	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		1	NR	NR	NR	NR	1
CERS	0.001	2	0	NR	NR	NR	NR	2
WIP	0.250		0	0	NR	NR	NR	0
CIWQS	0.001	1	0	NR	NR	NR	NR	1
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001	1	0	NR	NR	NR	NR	1
- Totals --		14	11	26	38	17	0	106

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **RICHMOND COUNTRY CLUB** **RGA LUST** **S114676851**
Target **1 MARKOVICH LN** **N/A**
Property **RICHMOND, CA**

Site 1 of 10 in cluster A

Actual: **90 ft.**

RGA LUST:

2012	RICHMOND COUNTRY CLUB	1 MARKOVICH LN
2011	RICHMOND COUNTRY CLUB	1 MARKOVICH LN
2010	RICHMOND COUNTRY CLUB	1 MARKOVICH LN
2009	RICHMOND COUNTRY CLUB	1 MARKOVICH LN
2008	RICHMOND COUNTRY CLUB	1 MARKOVICH LN
2007	RICHMOND COUNTRY CLUB	1 MARKOVICH LN
2006	RICHMOND COUNTRY CLUB	1 MARKOVICH LN
2005	RICHMOND COUNTRY CLUB	1 MARKOVICH LN

A2 **RICHMOND COUNTRY CLUB (GOLF COURSE & RECYCLED WATE** **FINDS** **1023261442**
Target **1 MARKOVICH LANE** **N/A**
Property **RICHMOND, CA 94806**

Site 2 of 10 in cluster A

Actual: **90 ft.**

FINDS:

Registry ID: 110065508141

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A3 **RICHMOND COUNTRY CLUB (GOLF COURSE & RECYCLED WATE** **CERS** **S120033934**
Target **1 MARKOVICH LANE** **CIWQS** **N/A**
Property **RICHMOND, CA 94806**

Site 3 of 10 in cluster A

Actual: **90 ft.**

CERS TANKS:

Site ID: 268122
CERS ID: 252642
CERS Description: Forestry & Silviculture

Site ID: 268122
CERS ID: 252642
CERS Description: Waste Discharge Requirements

CIWQS:

Agency: West County Wastewater District
Agency Address: 2377 Garden Tract Road, Richmond, CA 94806
Place/Project Type: Recycled Water Use Area
SIC/NAICS: Multiple SIC
Region: 2
Program: REC
Regulatory Measure Status: Active
Regulatory Measure Type: Reclamation Requirements
Order Number: 90-025

RICHMOND COUNTRY CLUB (GOLF COURSE & RECYCLED WATER) (Continued) **S120033934**

WDID:	2 071040002
NPDES Number:	Not reported
Adoption Date:	02/21/1990
Effective Date:	02/21/1990
Termination Date:	Not reported
Expiration/Review Date:	02/21/2005
Design Flow:	0.0001
Major/Minor:	Not reported
Complexity:	B
TTWQ:	3
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	37.983919
Longitude:	-122.351726

A4 **CHMIRS** **S109035239**
Target Property **1 MARKOVICH LANE** **N/A**
RICHMOND, CA 94806

Site 4 of 10 in cluster A

Actual: 90 ft.

CHMIRS:

OES Incident Number:	6-0232
OES notification:	01/09/2006
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	storm drains
Spill Site:	Not reported
Cleanup By:	none
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported

(Continued) **S109035239**

Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2006
Agency:	Richmond Country Club
Incident Date:	12/31/2005 12:00:00 AM
Admin Agency:	Contra Costa County Health Services Dept.
Amount:	Not reported
Contained:	Yes
Site Type:	Other
E Date:	Not reported
Substance:	fresh rain water mixed with treated affluent
Gallons:	300,000-400,000
Unknown:	0
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	Private lake at Richmond Country Club has overflowed due to recent rains and remains near capacity. Released into the overflow which flows into the storm drain system.

A5 **RICHMOND COUNTRY CLUB** **FINDS** **1016434394**
Target **1 MARKOVICH LN** **N/A**
Property **RICHMOND, CA 94806**

Site 5 of 10 in cluster A

Actual:
90 ft.

FINDS:

Registry ID: 110055867860

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A6 **MICHAEL A SOUZA** **PEST LIC** **S117649692**
Target **1 MARKOVICH LN** **N/A**
Property **RICHMOND, CA 94806**

Site 6 of 10 in cluster A

Actual: **90 ft.**

PEST LIC:

Facility Type:	QAC
Categories:	BCF
License No:	90433
Issued or Renewed Date:	01/01/2018
Expiration Date:	12/31/2019

A7 **RICHMOND COUNTRY CLUB** **LUST** **S104578169**
Target **1 MARKOVICH LN** **CERS HAZ WASTE** **N/A**
Property **RICHMOND, CA 94806** **CONTRA COSTA CO. SITE LIST**
CERS

Site 7 of 10 in cluster A

Actual: **90 ft.**

LUST:

Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601334138
Global Id:	T0601334138
Latitude:	37.983714
Longitude:	-122.350158
Status:	Completed - Case Closed
Status Date:	09/17/2004
Case Worker:	BGS
RB Case Number:	07-0842
Local Agency:	Not reported
File Location:	Not reported
Local Case Number:	Not reported
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0601334138
Contact Type:	Regional Board Caseworker
Contact Name:	BARBARA SIEMINSKI
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY STREET, SUITE 1400
City:	OAKLAND
Email:	bsieminski@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0601334138
Contact Type:	Local Agency Caseworker
Contact Name:	PAUL ANDREWS
Organization Name:	CONTRA COSTA CO. ENVIR. HEALTH DIV.
Address:	4333 PACHECO BOULEVARD
City:	MARTINEZ
Email:	pandrews@hsd.co.contra-costa.ca.us
Phone Number:	Not reported

LUST:

Global Id:	T0601334138
Action Type:	ENFORCEMENT
Date:	02/05/2004

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Action: Staff Letter

Global Id: T0601334138
Action Type: RESPONSE
Date: 06/04/2004
Action: Soil and Water Investigation Workplan

Global Id: T0601334138
Action Type: Other
Date: 07/15/2002
Action: Leak Stopped

Global Id: T0601334138
Action Type: ENFORCEMENT
Date: 09/17/2004
Action: Closure/No Further Action Letter

Global Id: T0601334138
Action Type: ENFORCEMENT
Date: 07/06/2004
Action: Site Visit / Inspection / Sampling

Global Id: T0601334138
Action Type: ENFORCEMENT
Date: 09/17/2004
Action: Closure/No Further Action Letter

Global Id: T0601334138
Action Type: Other
Date: 07/15/2002
Action: Leak Discovery

Global Id: T0601334138
Action Type: RESPONSE
Date: 08/24/2004
Action: Preliminary Site Assessment Report

Global Id: T0601334138
Action Type: ENFORCEMENT
Date: 05/24/2004
Action: Staff Letter

Global Id: T0601334138
Action Type: Other
Date: 08/12/2002
Action: Leak Reported

LUST:
Global Id: T0601334138
Status: Completed - Case Closed
Status Date: 09/17/2004

Global Id: T0601334138
Status: Open - Case Begin Date
Status Date: 07/15/2002

Global Id: T0601334138

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Status: Open - Site Assessment
Status Date: 01/30/2004

Global Id: T0601334138
Status: Open - Site Assessment
Status Date: 05/10/2004

Global Id: T0601334138
Status: Open - Site Assessment
Status Date: 06/24/2004

Global Id: T0601334138
Status: Open - Site Assessment
Status Date: 07/12/2004

CERS HAZ WASTE:
Site ID: 147779
CERS ID: 10009705
CERS Description: Hazardous Waste Generator

Violations:
Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Violation Date: 05-09-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 06/16/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Violation Date: 05-09-2016
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General
Violation Notes: Returned to compliance on 06/16/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Other/Unknown
Eval Date: 06-16-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2016
Violations Found: No

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 06-16-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Enforcement Action:
Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Site Address: 1 MARKOVICH LN
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 05-09-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Site Address: 1 MARKOVICH LN
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 05-09-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Enf Action Program: HW
Enf Action Source: CERS

Coordinates:
Site ID: 147779
Facility Name: RICHMOND COUNTRY CLUB
Env Int Type Code: LUSTCS
Program ID: T0601334138
Coord Name: Not reported
Ref Point Type Desc: Unknown
Latitude: 37.983714
Longitude: -122.350158

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: Mike Hoesly
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Operator
Entity Name: Richmond Country Club
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (510) 232-1080

Affiliation Type Desc: Environmental Contact
Entity Name: MICHAEL SOUZA
Entity Title: Not reported
Affiliation Address: 1 MARKOVICH LN
Affiliation City: RICHMOND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94806
Affiliation Phone: (510) 232-1086

Affiliation Type Desc: Legal Owner
Entity Name: Richmond Country Club
Entity Title: Not reported
Affiliation Address: 1 Markovich Ln
Affiliation City: Richmond
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94806
Affiliation Phone: (510) 232-1080

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Entity Title:	Not reported
Affiliation Address:	1 Markovich ln
Affiliation City:	Richmond
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94806
Affiliation Phone:	Not reported
Affiliation Type Desc:	CUPA District
Entity Name:	Contra Costa County Health Services Department
Entity Title:	Not reported
Affiliation Address:	4585 Pacheco BlvdSuite 100
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94553
Affiliation Phone:	(925) 335-3200
Affiliation Type Desc:	Identification Signer
Entity Name:	Mike Hoesly
Entity Title:	Assistant Superintendent
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	PAUL ANDREWS - CONTRA COSTA CO. ENVIR. HEALTH DIV.
Entity Title:	Not reported
Affiliation Address:	4333 PACHECO BOULEVARD
Affiliation City:	MARTINEZ
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	Richmond Country Club
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	BARBARA SIEMINSKI - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title:	Not reported
Affiliation Address:	1515 CLAY STREET, SUITE 1400
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

RICHMOND COUNTRY CLUB (Continued) **S104578169**

CONTRA COSTA CO. SITE LIST:
Facility ID: FA0033060
Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: APSA GENERAL
Region: CONTRA COSTA
Cupa Number: 770539

Facility ID: FA0033060
Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: UNDERGROUND STORAGE TANK SITE
Region: CONTRA COSTA
Cupa Number: 770539

Facility ID: FA0033060
Billing Status: ACTIVE, BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: HMBP: >10K-100K LBS, 20+ EMPLOYEES
Region: CONTRA COSTA
Cupa Number: 770539

Facility ID: FA0033060
Billing Status: ACTIVE, BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: HWG: REPORTED ZERO
Region: CONTRA COSTA
Cupa Number: 770539

CERS TANKS:
Site ID: 147779
CERS ID: T0601334138
CERS Description: Leaking Underground Storage Tank Cleanup Site

Violations:
Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Violation Date: 05-09-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 06/16/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Violation Date: 05-09-2016
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General
Violation Notes: Returned to compliance on 06/16/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Evaluation:

Eval General Type:	Other/Unknown
Eval Date:	06-16-2016
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HW
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2016
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	APSA
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	06-16-2016
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	APSA
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-09-2016
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HW
Eval Source:	CERS

Enforcement Action:

Site ID:	147779
Site Name:	RICHMOND COUNTRY CLUB
Site Address:	1 MARKOVICH LN
Site City:	RICHMOND
Site Zip:	94806
Enf Action Date:	05-09-2016
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Site Address: 1 MARKOVICH LN
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 05-09-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Coordinates:
Site ID: 147779
Facility Name: RICHMOND COUNTRY CLUB
Env Int Type Code: LUSTCS
Program ID: T0601334138
Coord Name: Not reported
Ref Point Type Desc: Unknown
Latitude: 37.983714
Longitude: -122.350158

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: Mike Hoesly
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Operator
Entity Name: Richmond Country Club
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (510) 232-1080

Affiliation Type Desc: Environmental Contact
Entity Name: MICHAEL SOUZA
Entity Title: Not reported
Affiliation Address: 1 MARKOVICH LN
Affiliation City: RICHMOND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94806

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Affiliation Phone: (510) 232-1086

Affiliation Type Desc: Legal Owner
Entity Name: Richmond Country Club
Entity Title: Not reported
Affiliation Address: 1 Markovich Ln
Affiliation City: Richmond
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94806
Affiliation Phone: (510) 232-1080

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 1 Markovich ln
Affiliation City: Richmond
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94806
Affiliation Phone: Not reported

Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department
Entity Title: Not reported
Affiliation Address: 4585 Pacheco BlvdSuite 100
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-3200

Affiliation Type Desc: Identification Signer
Entity Name: Mike Hoesly
Entity Title: Assistant Superintendent
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Local Agency Caseworker
Entity Name: PAUL ANDREWS - CONTRA COSTA CO. ENVIR. HEALTH DIV.
Entity Title: Not reported
Affiliation Address: 4333 PACHECO BOULEVARD
Affiliation City: MARTINEZ
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Parent Corporation
Entity Name: Richmond Country Club
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Regional Board Caseworker
Entity Name: BARBARA SIEMINSKI - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title: Not reported
Affiliation Address: 1515 CLAY STREET, SUITE 1400
Affiliation City: OAKLAND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Site ID: 147779
CERS ID: 10009705
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Violation Date: 05-09-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 06/16/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Violation Date: 05-09-2016
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General
Violation Notes: Returned to compliance on 06/16/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Other/Unknown
Eval Date: 06-16-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2016
Violations Found: No
Eval Type: Routine done by local agency

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 06-16-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Enforcement Action:
Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Site Address: 1 MARKOVICH LN
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 05-09-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 147779
Site Name: RICHMOND COUNTRY CLUB
Site Address: 1 MARKOVICH LN
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 05-09-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Enf Action Source: CERS

Coordinates:
Site ID: 147779
Facility Name: RICHMOND COUNTRY CLUB
Env Int Type Code: LUSTCS
Program ID: T0601334138
Coord Name: Not reported
Ref Point Type Desc: Unknown
Latitude: 37.983714
Longitude: -122.350158

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: Mike Hoesly
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Operator
Entity Name: Richmond Country Club
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (510) 232-1080

Affiliation Type Desc: Environmental Contact
Entity Name: MICHAEL SOUZA
Entity Title: Not reported
Affiliation Address: 1 MARKOVICH LN
Affiliation City: RICHMOND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94806
Affiliation Phone: (510) 232-1086

Affiliation Type Desc: Legal Owner
Entity Name: Richmond Country Club
Entity Title: Not reported
Affiliation Address: 1 Markovich Ln
Affiliation City: Richmond
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94806
Affiliation Phone: (510) 232-1080

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported

RICHMOND COUNTRY CLUB (Continued) **S104578169**

Affiliation Address:	1 Markovich ln
Affiliation City:	Richmond
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94806
Affiliation Phone:	Not reported
Affiliation Type Desc:	CUPA District
Entity Name:	Contra Costa County Health Services Department
Entity Title:	Not reported
Affiliation Address:	4585 Pacheco BlvdSuite 100
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94553
Affiliation Phone:	(925) 335-3200
Affiliation Type Desc:	Identification Signer
Entity Name:	Mike Hoesly
Entity Title:	Assistant Superintendent
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	PAUL ANDREWS - CONTRA COSTA CO. ENVIR. HEALTH DIV.
Entity Title:	Not reported
Affiliation Address:	4333 PACHECO BOULEVARD
Affiliation City:	MARTINEZ
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	Richmond Country Club
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	BARBARA SIEMINSKI - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title:	Not reported
Affiliation Address:	1515 CLAY STREET, SUITE 1400
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

A8 **RICHMOND COUNTRY CLUB** **LUST** **U003784335**
Target **1 MARKOVICH LN** **UST** **N/A**
Property **SAN PABLO, CA 94806**

Site 8 of 10 in cluster A

Actual: **90 ft.**

LUST REG 2:

Region:	2
Facility Id:	07-0842
Facility Status:	Case Closed
Case Number:	Not reported
How Discovered:	Tank Closure
Leak Cause:	UNK
Leak Source:	UNK
Date Leak Confirmed:	1/30/2004
Oversight Program:	LUST
Prelim. Site Assesment Wokplan Submitted:	Not reported
Preliminary Site Assesment Began:	6/24/2004
Pollution Characterization Began:	7/12/2004
Pollution Remediation Plan Submitted:	Not reported
Date Remediation Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	Not reported

UST:

Facility ID:	770539
Permitting Agency:	CONTRA COSTA COUNTY
Latitude:	37.986936
Longitude:	-122.3487577

A9 **RICHMOND COUNTRY CLUB** **HAZNET** **S113063453**
Target **1 MARKOVICH LANE** **N/A**
Property **RICHMOND, CA 94806**

Site 9 of 10 in cluster A

Actual: **90 ft.**

HAZNET:

envid:	S113063453
Year:	2002
GEPAID:	CAL000111680
Contact:	M SOUZA GOLF COURSE SUPT
Telephone:	5102321080
Mailing Name:	Not reported
Mailing Address:	1 MARKOVICH LANE
Mailing City,St,Zip:	RICHMOND, CA 948060000
Gen County:	Not reported
TSD EPA ID:	CAD009466392
TSD County:	Not reported
Waste Category:	Other empty containers 30 gallons or more
Disposal Method:	Disposal, Other
Tons:	0.44
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Contra Costa

envid:	S113063453
Year:	1994
GEPAID:	CAL000111680
Contact:	RICHMOND COUNTRY CLUB
Telephone:	5102321080

RICHMOND COUNTRY CLUB (Continued) **S113063453**

Mailing Name:	Not reported
Mailing Address:	1 MARKOVICH LANE
Mailing City,St,Zip:	RICHMOND, CA 948060000
Gen County:	Not reported
TSD EPA ID:	CAT080031628
TSD County:	Not reported
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	.2085
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	7

A10 **RICHMOND GOLF COURSE- REUSE** **WDS** **S105254776**
3900 GIANT RD **N/A**
< 1/8 **RICHMOND, CA 94806**
1 ft.

Site 10 of 10 in cluster A

Relative: Higher
Actual: 94 ft.

WDS:

Facility ID:	San Francisco Bay 071040002
Facility Type:	Municipal/Domestic - Facility that treats sewage or a mixture of predominantly sewage and other waste from districts, municipalities, communities, hospitals, schools, and publicly or privately owned systems (excluding individual subsurface leaching systems disposing of less than 1,000 gallons per day).
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	Not reported
Subregion:	2
Facility Telephone:	Not reported
Facility Contact:	JACK FOLEY
Agency Name:	WEST COUNTY WASTEWATER DISTICT
Agency Address:	2377 GARDEN TRACT RD
Agency City,St,Zip:	RICHMOND 94806
Agency Contact:	JACK FOLEY
Agency Telephone:	Not reported
Agency Type:	Special District (Includes districts established under general acts, sanitary districts, water districts irrigation districts, etc.)
SIC Code:	7992
SIC Code 2:	Not reported
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Primary Waste:	DOMIND
Waste Type2:	Not reported
Waste2:	Domestic Sewage combined with Industrial Waste
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Producer-User: Reclamation requirements that have been issued to a producer of reclaimed water who also uses the product.

RICHMOND GOLF COURSE- REUSE (Continued) **S105254776**

POTW:	The POTW Does not have an approved pretreatment program. Some POTWs may have local pretreatment programs that have not been approved by the regional board and/or EPA.
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.

B11 **W CNTY CONTRA COSTA DETENTION** **SWEEPS UST** **S101581187**
NNW **5555 GIANT HWY** **CA FID UST** **N/A**
< 1/8 **RICHMOND, CA 94804**
0.028 mi.
150 ft. **Site 1 of 3 in cluster B**

Relative: **Lower**

Actual: **75 ft.**

SWEEPS UST:

Status:	Active
Comp Number:	71137
Number:	5
Board Of Equalization:	Not reported
Referral Date:	11-20-90
Action Date:	11-20-90
Created Date:	11-20-90
Owner Tank Id:	Not reported
SWRCB Tank Id:	07-000-071137-000001
Tank Status:	A
Capacity:	550
Active Date:	11-20-90
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	1

CA FID UST:

Facility ID:	07001622
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	651 PINE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	RICHMOND 94804
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

B12 **WEST COUNTY DETENTION FACILITY** **UST** **U003784377**
NNW **5555 GIANT RD** **N/A**
< 1/8 **SAN PABLO, CA 94806**
0.033 mi.
173 ft. **Site 2 of 3 in cluster B**

Relative: UST:
Lower
Facility ID: 771137
Actual: Permitting Agency: CONTRA COSTA COUNTY
74 ft. Latitude: 37.99262
Longitude: -122.35352

B13 **ATLAS ROAD EXTENSION IMPROVEMENTS PROJECT** **RCRA-LQG** **1023674946**
NNW **5551 GIANT HWY** **CAP000272278**
< 1/8 **RICHMOND, CA 94806**
0.034 mi.
178 ft. **Site 3 of 3 in cluster B**

Relative: RCRA-LQG:
Lower
Date form received by agency: 04/25/2017
Actual: Facility name: ATLAS ROAD EXTENSION IMPROVEMENTS PROJECT
70 ft. Facility address: 5551 GIANT HWY
RICHMOND, CA 94806
EPA ID: CAP000272278
Mailing address: GIANT HWY
RICHMOND, CA 94806
Contact: ERIC D LILLY
Contact address: LONE TREE WAY STE 104
ANTIOCH, CA 94509
Contact country: US
Contact telephone: 925-325-3868
Contact email: LILLY@PBWORLD.COM
EPA Region: 09
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:
Owner/operator name: GHILOTTI CONSTRUCTION COMPANY
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/19/2016

ATLAS ROAD EXTENSION IMPROVEMENTS PROJECT (Continued) **1023674946**

Owner/Op end date: Not reported

Owner/operator name: EAST BAY REGIONAL PARK DISTRICT
Owner/operator address: PERALTA OAKS CT
OAKLAND, CA 94605
Owner/operator country: US
Owner/operator telephone: 888-327-2757
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: District
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1973
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 614
. Waste name: Treated wood waste

. Waste code: D004
. Waste name: ARSENIC

Violation Status: No violations found

14
NNE
< 1/8
0.056 mi.
295 ft.

EPITOME TRANSPORTATION **RCRA NonGen / NLR** **1010314077**
5532 HORIZON DR **CAR000181719**
RICHMOND, CA 94806

Relative:
Higher

Actual:
105 ft.

RCRA NonGen / NLR:
Date form received by agency: 02/16/2007
Facility name: EPITOME TRANSPORTATION
Facility address: 5532 HORIZON DR
RICHMOND, CA 94806
EPA ID: CAR000181719
Contact: BRIAN J ADAMS
Contact address: 5532 HORIZON DR
RICHMOND, CA 94806
Contact country: US
Contact telephone: 510-376-6948
Contact email: BJADAMS1972@AOL.COM

EPITOME TRANSPORTATION (Continued) **1010314077**

EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: BRIAN ADAMS DBA EPITOME TRANSPORTATION
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/19/2007
Owner/Op end date: Not reported

Owner/operator name: BRIAN ADAMS DBA EPITOME TRANSPORTATION
Owner/operator address: 5532 HORIZON DR
RICHMOND, CA 94806
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/19/2007
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: Yes
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D008
. Waste name: LEAD

Violation Status: No violations found

15
NE
< 1/8
0.077 mi.
408 ft.

MELS TRUCKING
3705 WOODLAND PL
SAN PABLO, CA 94806

RCRA NonGen / NLR

1014387540
CAR000210872

Relative:
Higher

Actual:
115 ft.

RCRA NonGen / NLR:

Date form received by agency:	07/27/2010
Facility name:	MELS TRUCKING
Facility address:	3705 WOODLAND PL SAN PABLO, CA 94806
EPA ID:	CAR000210872
Contact:	MELVYN ORTIZ
Contact address:	3705 WOODLAND PL SAN PABLO, CA 94806
Contact country:	US
Contact telephone:	415-260-6454
Contact email:	MELVYN.ORTIZ23@YAHOO.COM
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	MELS TRUCKING
Owner/operator address:	3705 WOODLAND PL SAN PABLO, CA 94806
Owner/operator country:	US
Owner/operator telephone:	415-260-6454
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	04/26/2009
Owner/Op end date:	Not reported

Owner/operator name:	MELS TRUCKING
Owner/operator address:	3705 WOODLAND PL SAN PABLO, CA 94806
Owner/operator country:	US
Owner/operator telephone:	415-260-6454
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	04/26/2009
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	Yes
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

MELS TRUCKING (Continued) **1014387540**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

C16 **CCC WEST COUNTY DETENTION FACILITY** **UST** **U004261591**
NNW **5555 GIANT HWY** **N/A**
< 1/8 **RICHMOND, CA 94806**
0.099 mi.
525 ft. **Site 1 of 2 in cluster C**

Relative:
Lower

Actual:
79 ft.

UST:
Facility ID: 07-000-771137
Permitting Agency: Contra Costa County Health Services Department
Latitude: 37.992039
Longitude: -122.353862

C17 **TREE RESTORATION AT WEST COUNTY DETENTION CENTER F** **CERS HAZ WASTE** **S107621031**
NNW **5555 GIANT HIGHWAY** **CERS TANKS** **N/A**
< 1/8 **RICHMOND, CA 94806** **EMI**
0.099 mi. **NPDES**
525 ft. **Site 2 of 2 in cluster C** **CONTRA COSTA CO. SITE LIST**
CERS

Relative:
Lower

CIWQS

Actual:
79 ft.

CERS HAZ WASTE:
Site ID: 17186
CERS ID: 10011454
CERS Description: Hazardous Waste Generator

Violations:
Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 04-03-2013
Citation: HSC 6.7 Multiple Sections - California Health and Safety Code, Chapter 6.7, Section(s) Multiple Sections
Violation Description: UST Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 04/14/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 07-19-2018
Citation: HSC 6.7 25284 - California Health and Safety Code, Chapter 6.7, Section(s) 25284
Violation Description: Failure to obtain a valid permit to operate from the UPA including but not limited to unpaid permit fees.
Violation Notes: Returned to compliance on 08/06/2018.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 03-27-2018
Citation: HSC 6.7 25290.1(c),25290.2(c),25291(a)(2),2529.1(e) - California Health and Safety Code, Chapter 6.7, Section(s) 25290.1(c),25290.2(c),25291(a)(2),2529.1(e)
Violation Description: Failure to maintain secondary containment (e.g., failure of secondary containment testing).
Violation Notes: Returned to compliance on 05/29/2018. OBSERVATION: Secondary containment of piping sump did not hold water sufficient to pass secondary containment testing. CORRECTIVE ACTION: By May 29, 2018, determine cause of failed secondary containment, repair, and retest.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 04-03-2014
Citation: HSC 6.7 Multiple Sections - California Health and Safety Code, Chapter 6.7, Section(s) Multiple Sections
Violation Description: UST Program - Operations/Maintenance - General
Violation Notes: Returned to compliance on 04/03/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 04-03-2013
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Description: Business Plan Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 02/25/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: HMRRP
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-02-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2014
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 07-19-2018
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-31-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-31-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2018
Violations Found: No

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-29-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-02-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Enf Action Date: 03-27-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-03-2013
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HMRRP
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-03-2013
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-03-2014
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 07-19-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Enf Action Program: UST
Enf Action Source: CERS

Coordinates:
Site ID: 17186
Facility Name: CCC WEST COUNTY DETENTION FACILITY
Env Int Type Code: HMBP
Program ID: 10011454
Coord Name: Not reported
Ref Point Type Desc: Unknown
Latitude: 37.994350
Longitude: -122.353745

Affiliation:
Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 5555 Giant Hwy
Affiliation City: San Pablo
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94806
Affiliation Phone: Not reported

Affiliation Type Desc: UST Permit Applicant
Entity Name: Sean Boyle
Entity Title: Specialist
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (510) 262-4285

Affiliation Type Desc: UST Tank Owner
Entity Name: Contra Costa County General Services Department
Entity Title: Not reported
Affiliation Address: 2467 Waterbird Way
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94553
Affiliation Phone: (925) 313-7052

Affiliation Type Desc: Legal Owner
Entity Name: CCC General Services Department
Entity Title: Not reported
Affiliation Address: 2467 Waterbird Way
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94553
Affiliation Phone: (925) 313-7100

Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Entity Title:	Not reported
Affiliation Address:	4585 Pacheco BlvdSuite 100
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94553
Affiliation Phone:	(925) 335-3200
Affiliation Type Desc:	Environmental Contact
Entity Name:	BETH KILIAN
Entity Title:	Not reported
Affiliation Address:	651 PINE ST 7TH FLR
Affiliation City:	MARTINEZ
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94553
Affiliation Phone:	(925) 335-1549
Affiliation Type Desc:	UST Property Owner Name
Entity Name:	Contra Costa County General Services Department
Entity Title:	Not reported
Affiliation Address:	2467 Waterbird Way
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94553
Affiliation Phone:	(925) 313-7052
Affiliation Type Desc:	Operator
Entity Name:	CCC GENERAL SERVICES DEPT
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(925) 313-7100
Affiliation Type Desc:	Parent Corporation
Entity Name:	CCC WEST COUNTY DETENTION FACILITY
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	UST Tank Operator
Entity Name:	Contra Costa County General Services Department
Entity Title:	Not reported
Affiliation Address:	2467 Waterbird Way
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94553
Affiliation Phone:	(925) 313-7052

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

CERS TANKS:
Site ID: 17186
CERS ID: 10011454
CERS Description: Underground Storage Tank

Violations:
Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 04-03-2013
Citation: HSC 6.7 Multiple Sections - California Health and Safety Code, Chapter 6.7, Section(s) Multiple Sections
Violation Description: UST Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 04/14/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 07-19-2018
Citation: HSC 6.7 25284 - California Health and Safety Code, Chapter 6.7, Section(s) 25284
Violation Description: Failure to obtain a valid permit to operate from the UPA including but not limited to unpaid permit fees.
Violation Notes: Returned to compliance on 08/06/2018.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 03-27-2018
Citation: HSC 6.7 25290.1(c),25290.2(c),25291(a)(2),2529.1(e) - California Health and Safety Code, Chapter 6.7, Section(s) 25290.1(c),25290.2(c),25291(a)(2),2529.1(e)
Violation Description: Failure to maintain secondary containment (e.g., failure of secondary containment testing).
Violation Notes: Returned to compliance on 05/29/2018. OBSERVATION: Secondary containment of piping sump did not hold water sufficient to pass secondary containment testing. CORRECTIVE ACTION: By May 29, 2018, determine cause of failed secondary containment, repair, and retest.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 04-03-2014
Citation: HSC 6.7 Multiple Sections - California Health and Safety Code, Chapter 6.7, Section(s) Multiple Sections
Violation Description: UST Program - Operations/Maintenance - General
Violation Notes: Returned to compliance on 04/03/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 04-03-2013
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Description: Business Plan Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 02/25/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: HMRRP
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-02-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2014
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 07-19-2018
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Eval Date: 03-31-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-31-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-29-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2017
Violations Found: No
Eval Type: Routine done by local agency

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-02-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 03-27-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-03-2013
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HMRRP
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-03-2013
Enf Action Type: Notice of Violation (Unified Program)

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-03-2014
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 07-19-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Coordinates:
Site ID: 17186
Facility Name: CCC WEST COUNTY DETENTION FACILITY
Env Int Type Code: HMBP
Program ID: 10011454
Coord Name: Not reported
Ref Point Type Desc: Unknown
Latitude: 37.994350
Longitude: -122.353745

Affiliation:
Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 5555 Giant Hwy
Affiliation City: San Pablo
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94806
Affiliation Phone: Not reported

Affiliation Type Desc: UST Permit Applicant
Entity Name: Sean Boyle
Entity Title: Specialist

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 262-4285
Affiliation Type Desc:	UST Tank Owner
Entity Name:	Contra Costa County General Services Department
Entity Title:	Not reported
Affiliation Address:	2467 Waterbird Way
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94553
Affiliation Phone:	(925) 313-7052
Affiliation Type Desc:	Legal Owner
Entity Name:	CCC General Services Department
Entity Title:	Not reported
Affiliation Address:	2467 Waterbird Way
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94553
Affiliation Phone:	(925) 313-7100
Affiliation Type Desc:	CUPA District
Entity Name:	Contra Costa County Health Services Department
Entity Title:	Not reported
Affiliation Address:	4585 Pacheco BlvdSuite 100
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94553
Affiliation Phone:	(925) 335-3200
Affiliation Type Desc:	Environmental Contact
Entity Name:	BETH KILIAN
Entity Title:	Not reported
Affiliation Address:	651 PINE ST 7TH FLR
Affiliation City:	MARTINEZ
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94553
Affiliation Phone:	(925) 335-1549
Affiliation Type Desc:	UST Property Owner Name
Entity Name:	Contra Costa County General Services Department
Entity Title:	Not reported
Affiliation Address:	2467 Waterbird Way
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94553
Affiliation Phone:	(925) 313-7052

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Affiliation Type Desc:	Operator
Entity Name:	CCC GENERAL SERVICES DEPT
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(925) 313-7100

Affiliation Type Desc:	Parent Corporation
Entity Name:	CCC WEST COUNTY DETENTION FACILITY
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	UST Tank Operator
Entity Name:	Contra Costa County General Services Department
Entity Title:	Not reported
Affiliation Address:	2467 Waterbird Way
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94553
Affiliation Phone:	(925) 313-7052

EMI:

Year:	2004
County Code:	7
Air Basin:	SF
Facility ID:	14142
Air District Name:	BA
SIC Code:	9199
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.004
Reactive Organic Gases Tons/Yr:	0.0033468
Carbon Monoxide Emissions Tons/Yr:	0.01
NOX - Oxides of Nitrogen Tons/Yr:	0.047
SOX - Oxides of Sulphur Tons/Yr:	0.001
Particulate Matter Tons/Yr:	0.003
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.002928

NPDES:

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Order Number:	Not reported
WDID:	2 07C365813
Regulatory Measure Type:	Construction
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Terminated
Status Date:	10/21/2013
Operator Name:	Contra Costa County Public Works Department
Operator Address:	255 Glacier Drive
Operator City:	Martinez
Operator State:	California
Operator Zip:	94553

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	2
Regulatory Measure ID:	435365
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	2 07C365813
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	09/11/2013
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	02/28/2013
Processed Date:	03/08/2013
Status:	Terminated
Status Date:	10/21/2013
Place Size:	5
Place Size Unit:	Acres
Contact:	Steve Jordan
Contact Title:	Architect
Contact Phone:	925-313-2000
Contact Phone Ext:	Not reported
Contact Email:	sjord@pw.cccounty.us
Operator Name:	Contra Costa County Public Works Department
Operator Address:	255 Glacier Drive
Operator City:	Martinez
Operator State:	California
Operator Zip:	94553
Operator Contact:	Steve Jordan

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Operator Contact Title:	Architect
Operator Contact Phone:	925-313-2000
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	sjord@pw.cccounty.us
Operator Type:	County Agency
Developer:	Contra Costa County Public Works Department
Developer Address:	255 Glacier Drive
Developer City:	Martinez
Developer State:	California
Developer Zip:	94553
Developer Contact:	Steve Jordan
Developer Contact Title:	Architect
Constype Linear Utility Ind:	N
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	N
Constype Below Ground Ind:	N
Constype Cable Line Ind:	N
Constype Comm Line Ind:	N
Constype Commertial Ind:	N
Constype Electrical Line Ind:	N
Constype Gas Line Ind:	N
Constype Industrial Ind:	N
Constype Other Description:	Landscape Restoration
Constype Other Ind:	Y
Constype Recons Ind:	N
Constype Residential Ind:	N
Constype Transport Ind:	N
Constype Utility Description:	Not reported
Constype Utility Ind:	N
Constype Water Sewer Ind:	N
Dir Discharge Uswater Ind:	N
Receiving Water Name:	Not reported
Certifier:	Hillary Heard
Certifier Title:	Not reported
Certification Date:	28-FEB-13
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0027913
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP: 1K-10K LBS, 20+ EMPLOYEES
Region:	CONTRA COSTA
Cupa Number:	771137

Facility ID:	FA0027913
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG: REPORTED ZERO
Region:	CONTRA COSTA
Cupa Number:	771137

Facility ID: FA0027913

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Billing Status: ACTIVE, BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: UNDERGROUND STORAGE TANK SITE
Region: CONTRA COSTA
Cupa Number: 771137

CERS TANKS:
Site ID: 17186
CERS ID: 10011454
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 04-03-2013
Citation: HSC 6.7 Multiple Sections - California Health and Safety Code, Chapter 6.7, Section(s) Multiple Sections
Violation Description: UST Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 04/14/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 07-19-2018
Citation: HSC 6.7 25284 - California Health and Safety Code, Chapter 6.7, Section(s) 25284
Violation Description: Failure to obtain a valid permit to operate from the UPA including but not limited to unpaid permit fees.
Violation Notes: Returned to compliance on 08/06/2018.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 03-27-2018
Citation: HSC 6.7 25290.1(c),25290.2(c),25291(a)(2),2529.1(e) - California Health and Safety Code, Chapter 6.7, Section(s) 25290.1(c),25290.2(c),25291(a)(2),2529.1(e)
Violation Description: Failure to maintain secondary containment (e.g., failure of secondary containment testing).
Violation Notes: Returned to compliance on 05/29/2018. OBSERVATION: Secondary containment of piping sump did not hold water sufficient to pass secondary containment testing. CORRECTIVE ACTION: By May 29, 2018, determine cause of failed secondary containment, repair, and retest.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 04-03-2014
Citation: HSC 6.7 Multiple Sections - California Health and Safety Code, Chapter 6.7, Section(s) Multiple Sections
Violation Description: UST Program - Operations/Maintenance - General

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Violation Notes: Returned to compliance on 04/03/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Violation Date: 04-03-2013
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Description: Business Plan Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 02/25/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: HMRRP
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-02-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2014
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 07-19-2018
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2017
Violations Found: No
Eval Type: Routine done by local agency

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-31-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-31-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-29-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-27-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-02-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-03-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 03-27-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-03-2013
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HMRRP
Enf Action Source: CERS

Site ID: 17186

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-03-2013
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-03-2014
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 17186
Site Name: CCC WEST COUNTY DETENTION FACILITY
Site Address: 5555 GIANT HWY
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 07-19-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Coordinates:
Site ID: 17186
Facility Name: CCC WEST COUNTY DETENTION FACILITY
Env Int Type Code: HMBP
Program ID: 10011454
Coord Name: Not reported
Ref Point Type Desc: Unknown
Latitude: 37.994350
Longitude: -122.353745

Affiliation:
Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 5555 Giant Hwy
Affiliation City: San Pablo
Affiliation State: CA
Affiliation Country: Not reported

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Affiliation Zip: 94806
Affiliation Phone: Not reported

Affiliation Type Desc: UST Permit Applicant
Entity Name: Sean Boyle
Entity Title: Specialist
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (510) 262-4285

Affiliation Type Desc: UST Tank Owner
Entity Name: Contra Costa County General Services Department
Entity Title: Not reported
Affiliation Address: 2467 Waterbird Way
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94553
Affiliation Phone: (925) 313-7052

Affiliation Type Desc: Legal Owner
Entity Name: CCC General Services Department
Entity Title: Not reported
Affiliation Address: 2467 Waterbird Way
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94553
Affiliation Phone: (925) 313-7100

Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department
Entity Title: Not reported
Affiliation Address: 4585 Pacheco BlvdSuite 100
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-3200

Affiliation Type Desc: Environmental Contact
Entity Name: BETH KILIAN
Entity Title: Not reported
Affiliation Address: 651 PINE ST 7TH FLR
Affiliation City: MARTINEZ
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-1549

Affiliation Type Desc: UST Property Owner Name
Entity Name: Contra Costa County General Services Department
Entity Title: Not reported
Affiliation Address: 2467 Waterbird Way

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94553
Affiliation Phone:	(925) 313-7052
Affiliation Type Desc:	Operator
Entity Name:	CCC GENERAL SERVICES DEPT
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(925) 313-7100
Affiliation Type Desc:	Parent Corporation
Entity Name:	CCC WEST COUNTY DETENTION FACILITY
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	UST Tank Operator
Entity Name:	Contra Costa County General Services Department
Entity Title:	Not reported
Affiliation Address:	2467 Waterbird Way
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94553
Affiliation Phone:	(925) 313-7052

CIWQS:

Agency:	Contra Costa County Public Works Department
Agency Address:	255 Glacier Drive, Martinez, CA 94553
Place/Project Type:	Construction - Other: Landscape Restoration
SIC/NAICS:	Not reported
Region:	2
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	2 07C365813
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	03/08/2013
Termination Date:	09/11/2013
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported

TREE RESTORATION AT WEST COUNTY DETENTION CENTER FACILITY (Continued) **S107621031**

Enforcement Actions within 5 years: 0
Violations within 5 years: 0
Latitude: 37.99315
Longitude: -122.35426

18
ENE
1/8-1/4
0.130 mi.
684 ft.

AUTONATION/CHEVRON HILL **CPS-SLIC** **S106234943**
FORMER CHEVRON HILL TOP TANK FARM **CERS** **N/A**
RICHMOND, CA 94804

Relative:
Higher

Actual:
145 ft.

CPS-SLIC:
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 07/01/2002
Global Id: SL601392515
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number: Not reported
Latitude: 37.990684
Longitude: -122.34154
Case Type: Cleanup Program Site
Case Worker: DCE
Local Agency: Not reported
RB Case Number: 2119.1226
File Location: Not reported
Potential Media Affected: Not reported
Potential Contaminants of Concern: Not reported
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

SLIC REG 2:
Region: 2
Facility ID: 2119.1226
Facility Status: Case Closed
Date Closed: Not reported
Local Case #: Not reported
How Discovered: Not reported
Leak Cause: Not reported
Leak Source: Not reported
Date Confirmed: Not reported
Date Prelim Site Assmnt Workplan Submitted: Not reported
Date Preliminary Site Assessment Began: Not reported
Date Pollution Characterization Began: Not reported
Date Remediation Plan Submitted: Not reported
Date Remedial Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

CERS TANKS:
Site ID: 261014
CERS ID: SL601392515
CERS Description: Cleanup Program Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: DAVID ELIAS - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title: Not reported

AUTONATION/CHEVRON HILL (Continued) **S106234943**

Affiliation Address:	1515 CLAY STREET, SUITE 1400
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

D19 **UPS** **LUST** **S101580784**
North **1600 ATLAS RD** **SWEEPS UST** **N/A**
1/8-1/4 **RICHMOND, CA 94806** **HIST UST**
0.170 mi. **CA FID UST**
895 ft. **Site 1 of 3 in cluster D** **HIST CORTESE**
NPDES
Relative: Lower **CONTRA COSTA CO. SITE LIST**
CERS
Actual: 58 ft. **CIWQS**

LUST:

Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601300342
Global Id:	T0601300342
Latitude:	37.9946739
Longitude:	-122.3411423
Status:	Completed - Case Closed
Status Date:	06/29/1998
Case Worker:	UUU
RB Case Number:	07-0368
Local Agency:	CONTRA COSTA COUNTY
File Location:	Not reported
Local Case Number:	19474
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0601300342
Contact Type:	Regional Board Caseworker
Contact Name:	Regional Water Board
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY ST SUITE 1400
City:	OAKLAND
Email:	Not reported
Phone Number:	Not reported

Global Id:	T0601300342
Contact Type:	Local Agency Caseworker
Contact Name:	SUE LOYD
Organization Name:	CONTRA COSTA COUNTY
Address:	4333 PACHECO BLVD.
City:	MARTINEZ
Email:	sloyd@hsd.co.contra-costa.ca.us
Phone Number:	Not reported

LUST:

Global Id:	T0601300342
Action Type:	Other

UPS (Continued) **S101580784**

Date: 06/06/1989
Action: Leak Stopped

Global Id: T0601300342
Action Type: Other
Date: 06/06/1989
Action: Leak Discovery

Global Id: T0601300342
Action Type: Other
Date: 01/03/1990
Action: Leak Reported

Global Id: T0601300342
Action Type: ENFORCEMENT
Date: 06/29/1998
Action: Closure/No Further Action Letter

LUST:
Global Id: T0601300342
Status: Completed - Case Closed
Status Date: 06/29/1998

Global Id: T0601300342
Status: Open - Case Begin Date
Status Date: 09/22/1988

Global Id: T0601300342
Status: Open - Site Assessment
Status Date: 09/22/1988

Global Id: T0601300342
Status: Open - Site Assessment
Status Date: 03/16/1989

Global Id: T0601300342
Status: Open - Site Assessment
Status Date: 06/07/1989

LUST REG 2:
Region: 2
Facility Id: 07-0368
Facility Status: Case Closed
Case Number: 19474
How Discovered: Tank Closure
Leak Cause: UNK
Leak Source: UNK
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: 9/22/1988
Preliminary Site Assesment Began: 3/16/1989
Pollution Characterization Began: 6/7/1989
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

UPS (Continued) **S101580784**

SWEEPS UST:

Status:	Not reported
Comp Number:	19474
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	07-000-019474-000001
Tank Status:	Not reported
Capacity:	2000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	4

Status:	Not reported
Comp Number:	19474
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	07-000-019474-000002
Tank Status:	Not reported
Capacity:	10000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	19474
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	07-000-019474-000003
Tank Status:	Not reported
Capacity:	10000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	DIESEL
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	19474
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported

UPS (Continued) **S101580784**

Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 07-000-019474-000004
Tank Status: Not reported
Capacity: 20000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: DIESEL
Number Of Tanks: Not reported

HIST UST:
File Number: 00022E0F
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00022E0F.pdf
Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Click here for Geo Tracker PDF:

CA FID UST:
Facility ID: 07000450
Regulated By: UTNKI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4152223493
Mail To: Not reported
Mailing Address: 2000 CROW CANYON PL
Mailing Address 2: Not reported
Mailing City,St,Zip: RICHMOND 94806
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

UPS (Continued) **S101580784**

HIST CORTESE:

Region:	CORTESE
Facility County Code:	7
Reg By:	LTNKA
Reg Id:	07-0368

NPDES:

Facility Status:	Active
NPDES Number:	CAS000001
Region:	2
Agency Number:	0
Regulatory Measure ID:	181804
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	2 07I002010
Regulatory Measure Type:	Enrollee
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/30/1992
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	8400 Pardee Drive
Discharge Name:	United Parcel Service Oakland Hub
Discharge City:	Oakland
Discharge State:	California
Discharge Zip:	94621
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	2
Regulatory Measure ID:	181804
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	2 07I002010
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/09/2008
Processed Date:	03/30/1992
Status:	Active

UPS (Continued) **S101580784**

Status Date:	03/30/1992
Place Size:	2669741
Place Size Unit:	SqFt
Contact:	Alvin Solis
Contact Title:	District Environmental Coordinator
Contact Phone:	510-633-4035
Contact Phone Ext:	Not reported
Contact Email:	alvinsolis@ups.com
Operator Name:	United Parcel Service Oakland Hub
Operator Address:	8400 Pardee Drive
Operator City:	Oakland
Operator State:	California
Operator Zip:	94621
Operator Contact:	Carlos Medina
Operator Contact Title:	District Plant Engineering Manager
Operator Contact Phone:	510-633-4035
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	alvinsolis@ups.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	510-246-2704
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	San Pablo Bay
Certifier:	CARLOS MEDINA
Certifier Title:	President, North California District
Certification Date:	09-DEC-16
Primary Sic:	4215-Courier Services Except by Air
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000001
Status:	Active
Agency Number:	0

UPS (Continued) **S101580784**

Region:	2
Regulatory Measure ID:	181804
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 07I002010
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/30/1992
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	United Parcel Service Oakland Hub
Discharge Address:	8400 Pardee Drive
Discharge City:	Oakland
Discharge State:	California
Discharge Zip:	94621
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported

UPS (Continued) **S101580784**

Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	2 07I002010
Regulatory Measure Type:	Industrial
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Active
Status Date:	03/30/1992
Operator Name:	United Parcel Service Oakland Hub
Operator Address:	8400 Pardee Drive
Operator City:	Oakland
Operator State:	California
Operator Zip:	94621

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	2
Regulatory Measure ID:	181804
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	2 07I002010
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported

UPS (Continued) **S101580784**

Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/09/2008
Processed Date:	03/30/1992
Status:	Active
Status Date:	03/30/1992
Place Size:	2669741
Place Size Unit:	SqFt
Contact:	Alvin Solis
Contact Title:	District Environmental Coordinator
Contact Phone:	510-633-4035
Contact Phone Ext:	Not reported
Contact Email:	alvinsolis@ups.com
Operator Name:	United Parcel Service Oakland Hub
Operator Address:	8400 Pardee Drive
Operator City:	Oakland
Operator State:	California
Operator Zip:	94621
Operator Contact:	Carlos Medina
Operator Contact Title:	District Plant Engineering Manager
Operator Contact Phone:	510-633-4035
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	alvinsolis@ups.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	510-246-2704
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	San Pablo Bay
Certifier:	CARLOS MEDINA

UPS (Continued) **S101580784**

Certifier Title:	President, North California District
Certification Date:	09-DEC-16
Primary Sic:	4215-Courier Services Except by Air
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	181804
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 07I002010
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/30/1992
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	United Parcel Service Oakland Hub
Discharge Address:	8400 Pardee Drive
Discharge City:	Oakland
Discharge State:	California
Discharge Zip:	94621
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported

UPS (Continued) **S101580784**

Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0029826
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP: 1K-10K LBS, 0-19 EMPLOYEES
Region:	CONTRA COSTA
Cupa Number:	773155

CERS TANKS:

Site ID:	235309
CERS ID:	T0601300342
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	Regional Water Board - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title:	Not reported
Affiliation Address:	1515 CLAY ST SUITE 1400
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	SUE LOYD - CONTRA COSTA COUNTY
Entity Title:	Not reported
Affiliation Address:	4333 PACHECO BLVD.
Affiliation City:	MARTINEZ
Affiliation State:	CA
Affiliation Country:	Not reported

UPS (Continued) **S101580784**

Affiliation Zip: Not reported
Affiliation Phone: Not reported

Site ID: 170914
CERS ID: 10017193
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 170914
Site Name: WEST CO WASTEWATER DISTRICT
Violation Date: 02-13-2015
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Description: Business Plan Program - Training - General
Violation Notes: Returned to compliance on 03/18/2015.
Violation Division: Contra Costa County Health Services Department
Violation Program: HMRRP
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 02-13-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 12-08-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 03-18-2015
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 170914
Site Name: WEST CO WASTEWATER DISTRICT
Site Address: 1600 ATLAS RD
Site City: RICHMOND
Site Zip: 94801
Enf Action Date: 02-13-2015
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection

UPS (Continued) **S101580784**

Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HMRRP
Enf Action Source: CERS

Affiliation:
Affiliation Type Desc: Operator
Entity Name: West County Wastewater District
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (510) 237-6603

Affiliation Type Desc: Parent Corporation
Entity Name: WEST CO WASTEWATER DISTRICT
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department
Entity Title: Not reported
Affiliation Address: 4585 Pacheco BlvdSuite 100
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-3200

Affiliation Type Desc: Environmental Contact
Entity Name: Steve Linsley
Entity Title: Not reported
Affiliation Address: 2910 HILLTOP DR
Affiliation City: RICHMOND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94806
Affiliation Phone: (510) 237-6603

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 2377 Garden Tract Rd.
Affiliation City: Richmond
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94801
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner

UPS (Continued) **S101580784**

Entity Name:	WEST CO WASTEWATER DISTRICT
Entity Title:	Not reported
Affiliation Address:	2910 Hilltop Dr.
Affiliation City:	RICHMOND
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94806
Affiliation Phone:	(510) 222-6700
Affiliation Type Desc:	Document Preparer
Entity Name:	Steve Linsley
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

CIWQS:

Agency:	United Parcel Service Oakland Hub
Agency Address:	8400 Pardee Drive, Oakland, CA 94621
Place/Project Type:	Industrial - Courier Services Except by Air
SIC/NAICS:	4215
Region:	2
Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	2 07I002010
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	03/30/1992
Termination Date:	Not reported
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	37.995315
Longitude:	-122.346269

D20 **POINT PINOLE REGIONAL PARK** **ENVIROSTOR** **S116165426**
North **ATLAS ROAD AT GIANT ROAD** **N/A**
1/8-1/4 **RICHMOND, CA 94804**
0.173 mi.
914 ft. **Site 2 of 3 in cluster D**

Relative:
Lower

Actual:
55 ft.

ENVIROSTOR:

Facility ID:	7840001
Status:	Refer: RWQCB
Status Date:	05/23/1994
Site Code:	Not reported
Site Type:	Historical

POINT PINOLE REGIONAL PARK (Continued) **S116165426**

Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Berkeley
Assembly: Not reported
Senate: Not reported
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.99704
Longitude: -122.3489
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: Lead
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

E21 **FALCON SPIRITS DISTILLERY** **CERS HAZ WASTE** **S121739782**
SSW **3701 COLLINS AVENUE #1B&C** **CERS** **N/A**
1/8-1/4 **RICHMOND, CA 94806**
0.175 mi.
923 ft. **Site 1 of 5 in cluster E**

Relative:
Lower

Actual:
31 ft.

CERS HAZ WASTE:
Site ID: 115770
CERS ID: 10482172
CERS Description: Hazardous Waste Generator

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-22-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department

FALCON SPIRITS DISTILLERY (Continued) **S121739782**

Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-22-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-10-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-10-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: farid dormishian
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 3701 Collins Ave., Suite 1B & C
Affiliation City: Richmond
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94806
Affiliation Phone: Not reported

Affiliation Type Desc: Operator
Entity Name: Farid Dormishian
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported

FALCON SPIRITS DISTILLERY (Continued) **S121739782**

Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (510) 206-0596

Affiliation Type Desc: Identification Signer
Entity Name: Farid Dormishian
Entity Title: Owner
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Parent Corporation
Entity Name: Falcon Spirits, LLC
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department
Entity Title: Not reported
Affiliation Address: 4585 Pacheco BlvdSuite 100
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-3200

Affiliation Type Desc: Environmental Contact
Entity Name: Farid Dormishian
Entity Title: Not reported
Affiliation Address: 3701 Collins Ave., Suite 1B & C
Affiliation City: Richmond
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94806
Affiliation Phone: (510) 206-0596

Affiliation Type Desc: Legal Owner
Entity Name: Farid Dormishian
Entity Title: Not reported
Affiliation Address: 3701 Collins Ave., Suite 1B & C
Affiliation City: Richmond
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94806
Affiliation Phone: (510) 206-0596

CERS TANKS:
Site ID: 115770

FALCON SPIRITS DISTILLERY (Continued) **S121739782**

CERS ID: 10482172
CERS Description: Chemical Storage Facilities

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-22-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-22-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-10-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-10-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: farid dormishian
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 3701 Collins Ave., Suite 1B & C
Affiliation City: Richmond
Affiliation State: CA

FALCON SPIRITS DISTILLERY (Continued) **S121739782**

Affiliation Country: Not reported
Affiliation Zip: 94806
Affiliation Phone: Not reported

Affiliation Type Desc: Operator
Entity Name: Farid Dormishian
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (510) 206-0596

Affiliation Type Desc: Identification Signer
Entity Name: Farid Dormishian
Entity Title: Owner
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Parent Corporation
Entity Name: Falcon Spirits, LLC
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department
Entity Title: Not reported
Affiliation Address: 4585 Pacheco BlvdSuite 100
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-3200

Affiliation Type Desc: Environmental Contact
Entity Name: Farid Dormishian
Entity Title: Not reported
Affiliation Address: 3701 Collins Ave., Suite 1B & C
Affiliation City: Richmond
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94806
Affiliation Phone: (510) 206-0596

Affiliation Type Desc: Legal Owner
Entity Name: Farid Dormishian
Entity Title: Not reported

FALCON SPIRITS DISTILLERY (Continued) **S121739782**

Affiliation Address:	3701 Collins Ave., Suite 1B & C
Affiliation City:	Richmond
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94806
Affiliation Phone:	(510) 206-0596

E22 **ATLAS FOUNDRY AND MANUFACTURING COMPANY** **ENVIROSTOR** **S104581477**
SSW **3701 COLLINS AVENUE** **CHMIRS** **N/A**
1/8-1/4 **RICHMOND, CA 94801** **CONTRA COSTA CO. SITE LIST**
0.175 mi.
923 ft. **Site 2 of 5 in cluster E**

Relative:
Lower

Actual:
31 ft.

ENVIROSTOR:

Facility ID:	7330028
Status:	No Further Action
Status Date:	04/14/1995
Site Code:	Not reported
Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	4
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Denise Tsuji
Division Branch:	Cleanup Berkeley
Assembly:	15
Senate:	09
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	37.98169
Longitude:	-122.3536
APN:	408060001
Past Use:	NONE
Potential COC:	NONE SPECIFIED No Contaminants found
Confirmed COC:	31000-NO
Potential Description:	NMA
Alias Name:	Not reported
Alias Type:	Not reported

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported

ATLAS FOUNDRY AND MANUFACTURING COMPANY (Continued) **S104581477**

Schedule Due Date: Not reported
Schedule Revised Date: Not reported

CHMIRS:

OES Incident Number:	1-7615
OES notification:	12/27/2011
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Industrial Plant
Cleanup By:	Responsible Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1125
Year:	2011
Agency:	West County Waste Water Dist
Incident Date:	12/27/2011
Admin Agency:	Contra Costa County Health Services Department
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	Raw Sewage
Quantity Released:	300
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported

ATLAS FOUNDRY AND MANUFACTURING COMPANY (Continued) **S104581477**

Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	A sewer main overflowed due to a blockage. The release was to a drainage ditch. Caller states no public waterways were impacted/

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0032789
Billing Status:	INACTIVE, NON-BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG GENERAL
Region:	CONTRA COSTA
Cupa Number:	770243

Facility ID:	FA0032789
Billing Status:	INACTIVE, NON-BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	UNDERGROUND STORAGE TANK SITE
Region:	CONTRA COSTA
Cupa Number:	770243

E23 **FALCON SPIRITS DISTILLERY** **CONTRA COSTA CO. SITE LIST** **S113407811**
SSW **3701 COLLINS AVE 1B&C** **N/A**
1/8-1/4 **RICHMOND, CA 94806**
0.175 mi.
923 ft. **Site 3 of 5 in cluster E**

Relative:
Lower

Actual:
31 ft.

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0033887
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP: 1K-10K LBS, 0-19 EMPLOYEES
Region:	CONTRA COSTA
Cupa Number:	774603

Facility ID:	FA0033887
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG: REPORTED ZERO
Region:	CONTRA COSTA
Cupa Number:	774603

E24 **ATLAS FOUNDRY & MFG CO** **SEMS-ARCHIVE** **1002851751**
SSW **3701 COLLINS AVE** **PRP** **CAD982359143**
1/8-1/4 **RICHMOND, CA 94804**
0.175 mi.
923 ft. **Site 4 of 5 in cluster E**

Relative:
Lower

Actual:
31 ft.

SEMS Archive:

Site ID:	900062
EPA ID:	CAD982359143
Cong District:	7
FIPS Code:	6013
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:

Region:	9
Site ID:	900062
EPA ID:	CAD982359143
Site Name:	ATLAS FOUNDRY & MFG CO
NPL:	N
FF:	N
OU:	0
Action Code:	VS
Action Name:	ARCH SITE
SEQ:	1
Start Date:	Not reported
Finish Date:	1988-08-01 00:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf In-Hse

Region:	9
Site ID:	900062
EPA ID:	CAD982359143
Site Name:	ATLAS FOUNDRY & MFG CO
NPL:	N
FF:	N
OU:	0
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	1987-12-01 00:00:00
Finish Date:	1987-12-01 00:00:00
Qual:	Not reported
Current Action Lead:	St Perf

Region:	9
Site ID:	900062
EPA ID:	CAD982359143
Site Name:	ATLAS FOUNDRY & MFG CO
NPL:	N
FF:	N
OU:	0
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	Not reported
Finish Date:	1988-08-01 00:00:00
Qual:	N
Current Action Lead:	St Perf

ATLAS FOUNDRY & MFG CO (Continued) **1002851751**

PRP:
PRP Name: RAY KOTOW
RAY KOTOW

D25 **PG&E POINT PINOLE SUBSTATION** **CONTRA COSTA CO. SITE LIST** **S113407751**
North **ATLAS & GIANT RD** **N/A**
1/8-1/4 **RICHMOND, CA 94806**
0.180 mi.
949 ft. **Site 3 of 3 in cluster D**

Relative:
Lower

Actual:
57 ft.

CONTRA COSTA CO. SITE LIST:
Facility ID: FA0029119
Billing Status: ACTIVE, BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: HMBP: >10K-100K LBS, 0-19 EMPLOYEES
Region: CONTRA COSTA
Cupa Number: 772427

Facility ID: FA0029119
Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: APSA: CONDITIONALLY EXEMPT
Region: CONTRA COSTA
Cupa Number: 772427

Facility ID: FA0029119
Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: HWG GENERAL
Region: CONTRA COSTA
Cupa Number: 772427

E26 **PACIFIC SITE MANAGEMENT** **AST** **S105850352**
SSW **3655 COLLINS AVE** **DEED** **N/A**
1/8-1/4 **RICHMOND, CA 94806** **HAZNET**
0.211 mi. **NPDES**
1114 ft. **Site 5 of 5 in cluster E** **CONTRA COSTA CO. SITE LIST**
CERS

Relative:
Lower

CIWQS

Actual:
31 ft.

AST:
Certified Unified Program Agencies: Not reported
Owner: Jeffrey J Fenton
Total Gallons: Not reported
CERSID: 10016191
Facility ID: 07-000-772814
Business Name: DURKEE DRAYAGE CO
Phone: 5109707550
Fax: 5109707565
Mailing Address: 3655 Collins Ave.
Mailing Address City: Richmond
Mailing Address State: CA
Mailing Address Zip Code: 94806
Operator Name: Durkee Drayage Co.
Operator Phone: 5109707550
Owner Phone: (510) 970-7550

PACIFIC SITE MANAGEMENT (Continued) **S105850352**

Owner Mail Address: 3655 Collins Ave.
Owner State: CA
Owner Zip Code: 94806
Owner Country: United States
Property Owner Name: Not reported
Property Owner Phone: Not reported
Property Owner Mailing Address: Not reported
Property Owner City: Not reported
Property Owner Stat : Not reported
Property Owner Zip Code: Not reported
Property Owner Country: Not reported
EPAID: CAL000411027

Certified Unified Program Agencies: Contra Costa
Owner: Not reported
Total Gallons: 6,000
CERSID: Not reported
Facility ID: Not reported
Business Name: Not reported
Phone: Not reported
Fax: Not reported
Mailing Address: Not reported
Mailing Address City: Not reported
Mailing Address State: Not reported
Mailing Address Zip Code: Not reported
Operator Name: Not reported
Operator Phone: Not reported
Owner Phone: Not reported
Owner Mail Address: Not reported
Owner State: Not reported
Owner Zip Code: Not reported
Owner Country: Not reported
Property Owner Name: Not reported
Property Owner Phone: Not reported
Property Owner Mailing Address: Not reported
Property Owner City: Not reported
Property Owner Stat : Not reported
Property Owner Zip Code: Not reported
Property Owner Country: Not reported
EPAID: Not reported

DEED:
Envirostor ID: Not reported
Area: Not reported
Sub Area: Not reported
Site Type: Land Use Restrictions
Status: Not reported
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: HWMP Restrictions

Envirostor ID: Not reported
Area: Not reported
Sub Area: Not reported
Site Type: Land Use Restrictions
Status: Not reported

PACIFIC SITE MANAGEMENT (Continued) **S105850352**

Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: HWMP Restrictions

HAZNET:

envid:	S105850352
Year:	2016
GEPAID:	CAC002840896
Contact:	SARAH BRAGG-FLAVAN
Telephone:	6616547988
Mailing Name:	Not reported
Mailing Address:	9525 CAMINO MEDIA
Mailing City,St,Zip:	BAKERSFIELD, CA 933111314
Gen County:	Contra Costa
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Contaminated soil from site clean-up
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	101.52
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Contra Costa

NPDES:

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	2 07I015037
Regulatory Measure Type:	Industrial
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Terminated
Status Date:	08/01/2018
Operator Name:	Durkee Drayage Co
Operator Address:	3655 Collins Ave
Operator City:	Richmond
Operator State:	California
Operator Zip:	94806

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported

PACIFIC SITE MANAGEMENT (Continued) **S105850352**

Region:	2
Regulatory Measure ID:	181924
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	2 07I015037
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/09/2008
Processed Date:	04/01/1999
Status:	Active
Status Date:	06/30/2017
Place Size:	2
Place Size Unit:	Acres
Contact:	Ms Mary Berghammer
Contact Title:	Not reported
Contact Phone:	510-970-7550
Contact Phone Ext:	302
Contact Email:	mberghammer@durkeedrayage.com
Operator Name:	Durkee Drayage Co
Operator Address:	3655 Collins Ave
Operator City:	Richmond
Operator State:	California
Operator Zip:	94806
Operator Contact:	Mary Berghammer
Operator Contact Title:	Office Manager
Operator Contact Phone:	510-970-7550
Operator Contact Phone Ext:	102
Operator Contact Email:	mberghammer@durkeedrayage.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	510-970-7550
Emergency Phone Ext:	302
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported

PACIFIC SITE MANAGEMENT (Continued) **S105850352**

Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	San Pablo Creek
Certifier:	Mary Berghammer
Certifier Title:	LRP
Certification Date:	04-MAY-15
Primary Sic:	4214-Local Trucking with Storage
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	181924
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 07I015037
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/01/1999
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Durkee Drayage Co
Discharge Address:	3655 Collins Ave
Discharge City:	Richmond
Discharge State:	California
Discharge Zip:	94806
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported

PACIFIC SITE MANAGEMENT (Continued) **S105850352**

Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Terminated
NPDES Number:	CAS000001
Region:	2
Agency Number:	0
Regulatory Measure ID:	181924
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	2 07I015037
Regulatory Measure Type:	Enrollee
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/01/1999
Termination Date Of Regulatory Measure:	07/17/2018
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	3655 Collins Ave
Discharge Name:	Durkee Drayage Co
Discharge City:	Richmond
Discharge State:	California
Discharge Zip:	94806
Status:	Not reported
Status Date:	Not reported

PACIFIC SITE MANAGEMENT (Continued) **S105850352**

Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	2
Regulatory Measure ID:	181924
Order Number:	Not reported
Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	2 07I015037
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/09/2008
Processed Date:	04/01/1999
Status:	Active
Status Date:	06/30/2017
Place Size:	2
Place Size Unit:	Acres
Contact:	Ms Mary Berghammer
Contact Title:	Not reported
Contact Phone:	510-970-7550
Contact Phone Ext:	302
Contact Email:	mberghammer@durkeedrayage.com
Operator Name:	Durkee Drayage Co
Operator Address:	3655 Collins Ave
Operator City:	Richmond
Operator State:	California
Operator Zip:	94806
Operator Contact:	Mary Berghammer
Operator Contact Title:	Office Manager
Operator Contact Phone:	510-970-7550
Operator Contact Phone Ext:	102
Operator Contact Email:	mberghammer@durkeedrayage.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	California
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	510-970-7550
Emergency Phone Ext:	302

PACIFIC SITE MANAGEMENT (Continued) **S105850352**

Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	San Pablo Creek
Certifier:	Mary Berghammer
Certifier Title:	LRP
Certification Date:	04-MAY-15
Primary Sic:	4214-Local Trucking with Storage
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	181924
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 07I015037
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/01/1999
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Durkee Drayage Co
Discharge Address:	3655 Collins Ave
Discharge City:	Richmond
Discharge State:	California
Discharge Zip:	94806
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported

PACIFIC SITE MANAGEMENT (Continued) **S105850352**

Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0029492
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG GENERAL
Region:	CONTRA COSTA
Cupa Number:	772814

Facility ID:	FA0029492
Billing Status:	INACTIVE, NON-BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	APSA: <10K GALLONS

PACIFIC SITE MANAGEMENT (Continued) **S105850352**

Region: CONTRA COSTA
Cupa Number: 772814

Facility ID: FA0029492
Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: HMBP: >10K-100K LBS, 20+ EMPLOYEES
Region: CONTRA COSTA
Cupa Number: 772814

Facility ID: FA0029492
Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: HWG: REPORTED ZERO
Region: CONTRA COSTA
Cupa Number: 772814

CIWQS:
Agency: Durkee Drayage Co
Agency Address: 3655 Collins Ave, Richmond, CA 94806
Place/Project Type: Industrial - Local Trucking with Storage
SIC/NAICS: 4214
Region: 2
Program: INDSTW
Regulatory Measure Status: Terminated
Regulatory Measure Type: Storm water industrial
Order Number: 2014-0057-DWQ
WDID: 2 07I015037
NPDES Number: CAS000001
Adoption Date: Not reported
Effective Date: 04/01/1999
Termination Date: 07/17/2018
Expiration/Review Date: Not reported
Design Flow: Not reported
Major/Minor: Not reported
Complexity: Not reported
TTWQ: Not reported
Enforcement Actions within 5 years: 0
Violations within 5 years: 0
Latitude: 37.98024
Longitude: -122.35323

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27 **BIO-RAD LABORATORIES** **CERS HAZ WASTE** **S109821423**
North **2500 ATLAS RD** **CONTRA COSTA CO. SITE LIST** **N/A**
1/8-1/4 **RICHMOND, CA 94806** **CERS**
0.239 mi.
1261 ft.

Relative:
Lower

Actual:
64 ft.

CERS HAZ WASTE:
Site ID: 98934
CERS ID: 10477777
CERS Description: Hazardous Waste Generator

Violations:
Site ID: 98934
Site Name: Bio-Rad Laboratories
Violation Date: 04-07-2016
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95,

BIO-RAD LABORATORIES (Continued) **S109821423**

	Section(s) Multiple
Violation Description:	Business Plan Program - Administration/Documentation - General
Violation Notes:	Returned to compliance on 05/04/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HMRRP
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-07-2016
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	05-10-2016
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-07-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HW
Eval Source:	CERS

Enforcement Action:

Site ID:	98934
Site Name:	Bio-Rad Laboratories
Site Address:	2500 ATLAS RD
Site City:	RICHMOND
Site Zip:	94806
Enf Action Date:	04-07-2016
Enf Action Type:	Notice of Violation (Unified Program)
Enf Action Description:	Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:	Not reported
Enf Action Division:	Contra Costa County Health Services Department
Enf Action Program:	HMRRP
Enf Action Source:	CERS

Coordinates:

Site ID:	98934
Facility Name:	Bio-Rad Laboratories
Env Int Type Code:	HWG
Program ID:	10477777
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.

BIO-RAD LABORATORIES (Continued) **S109821423**

Latitude: 37.997450
Longitude: -122.351850

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: Stanley Njoku
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Environmental Contact
Entity Name: Lenka Barrettova
Entity Title: Not reported
Affiliation Address: 235 Linus Pauling Dr. Suite A
Affiliation City: Hercules
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94547
Affiliation Phone: (510) 741-5219

Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department
Entity Title: Not reported
Affiliation Address: 4585 Pacheco BlvdSuite 100
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-3200

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 2000 Alfred Nobel Dr.
Affiliation City: Hercules
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94547
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer
Entity Name: Lenka Barrettova
Entity Title: EHS NorCal Manager
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner
Entity Name: Bio-Rad Laboratories Inc.
Entity Title: Not reported

BIO-RAD LABORATORIES (Continued) **S109821423**

Affiliation Address:	2000 Alfred Nobel Dr.
Affiliation City:	Hercules
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94547
Affiliation Phone:	(510) 741-1000
Affiliation Type Desc:	Parent Corporation
Entity Name:	BIO-RAD LABORATORIES INC Organization
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	Bio-Rad Laboratories
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 741-1000
Affiliation Type Desc:	Property Owner
Entity Name:	Western B. Northwest CA LLC
Entity Title:	Not reported
Affiliation Address:	Two North Riverside Plaza Ste 2350
Affiliation City:	Chicago
Affiliation State:	IL
Affiliation Country:	United States
Affiliation Zip:	60606
Affiliation Phone:	(312) 940-5300

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0030896
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP: >10K-100K LBS, 20+ EMPLOYEES
Region:	CONTRA COSTA
Cupa Number:	774117
Facility ID:	FA0030896
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG: 12 - <25 TONS/YEAR
Region:	CONTRA COSTA
Cupa Number:	774117

CERS TANKS:

Site ID:	98934
CERS ID:	10477777

BIO-RAD LABORATORIES (Continued) **S109821423**

CERS Description: Chemical Storage Facilities

Violations:
Site ID: 98934
Site Name: Bio-Rad Laboratories
Violation Date: 04-07-2016
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Description: Business Plan Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 05/04/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HMRRP
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-07-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 05-10-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-07-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Enforcement Action:
Site ID: 98934
Site Name: Bio-Rad Laboratories
Site Address: 2500 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-07-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HMRRP
Enf Action Source: CERS

BIO-RAD LABORATORIES (Continued) **S109821423**

Coordinates:

Site ID:	98934
Facility Name:	Bio-Rad Laboratories
Env Int Type Code:	HWG
Program ID:	10477777
Coord Name:	Not reported
Ref Point Type Desc:	Center of a facility or station.
Latitude:	37.997450
Longitude:	-122.351850

Affiliation:

Affiliation Type Desc:	Document Preparer
Entity Name:	Stanley Njoku
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Environmental Contact
Entity Name:	Lenka Barrettova
Entity Title:	Not reported
Affiliation Address:	235 Linus Pauling Dr. Suite A
Affiliation City:	Hercules
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94547
Affiliation Phone:	(510) 741-5219

Affiliation Type Desc:	CUPA District
Entity Name:	Contra Costa County Health Services Department
Entity Title:	Not reported
Affiliation Address:	4585 Pacheco BlvdSuite 100
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94553
Affiliation Phone:	(925) 335-3200

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	2000 Alfred Nobel Dr.
Affiliation City:	Hercules
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94547
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Lenka Barrettova
Entity Title:	EHS NorCal Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported

BIO-RAD LABORATORIES (Continued) **S109821423**

Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Legal Owner
Entity Name:	Bio-Rad Laboratories Inc.
Entity Title:	Not reported
Affiliation Address:	2000 Alfred Nobel Dr.
Affiliation City:	Hercules
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94547
Affiliation Phone:	(510) 741-1000
Affiliation Type Desc:	Parent Corporation
Entity Name:	BIO-RAD LABORATORIES INC Organization
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	Bio-Rad Laboratories
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 741-1000
Affiliation Type Desc:	Property Owner
Entity Name:	Western B. Northwest CA LLC
Entity Title:	Not reported
Affiliation Address:	Two North Riverside Plaza Ste 2350
Affiliation City:	Chicago
Affiliation State:	IL
Affiliation Country:	United States
Affiliation Zip:	60606
Affiliation Phone:	(312) 940-5300

F28 **KOPPERS, INC.** **ENVIROSTOR** **1000346596**
SSW **3501 COLLINS AVENUE** **HIST UST** **N/A**
1/8-1/4 **RICHMOND, CA 94806** **LDS**
0.243 mi. **ENF**
1283 ft. **Site 1 of 3 in cluster F** **HAZNET**
HIST CORTESE
Relative: **NPDES**
Lower
CONTRA COSTA CO. SITE LIST
Actual: **CERS**
31 ft.
CIWQS

KOPPERS, INC. (Continued) **1000346596**

ENVIROSTOR:

Facility ID:	7280078
Status:	Refer: RWQCB
Status Date:	06/08/1994
Site Code:	Not reported
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Berkeley
Assembly:	15
Senate:	09
Special Program:	* CERC2
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	37.98072
Longitude:	-122.3542
APN:	408060011
Past Use:	NONE SPECIFIED
Potential COC:	* ORGANIC LIQUIDS WITH METALS * UNSPECIFIED SOLVENT MIXTURES * POLYMERIC RESIN WASTE
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	Not reported
Alias Type:	Not reported

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

HIST UST:

File Number:	00022C33
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00022C33.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported

KOPPERS, INC. (Continued) **1000346596**

Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

LDS:

Global Id:	L10008163078
Latitude:	37.98038
Longitude:	-122.3537
Case Type:	Land Disposal Site
Status:	Open - Inactive
Status Date:	06/10/2016
Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Caseworker:	MEJ
Local Agency:	Not reported
RB Case Number:	2 071141N01
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Not reported
EDR Link ID:	L10008163078
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

ENF:

Region:	2
Facility Id:	235225
Agency Name:	Koppers Inc
Place Type:	Manufacturing
Place Subtype:	Manufacturing NEC
Facility Type:	Solid Waste Class I - hazardous wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	2819
SIC Desc 1:	Industrial Inorganic Chemicals, NEC
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported

KOPPERS, INC. (Continued) **1000346596**

NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	UNREGS
Program Category1:	UNREGS
Program Category2:	Not reported
# Of Programs:	1
WDID:	2 071141N01
Reg Measure Id:	161558
Reg Measure Type:	Unregulated
Region:	2
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Never Active
Status Date:	02/21/2013
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	Not reported
Direction/Voice:	Passive
Enforcement Id(EID):	221700
Region:	2
Order / Resolution Number:	LT990420
Enforcement Action Type:	Clean-up and Abatement Order
Effective Date:	04/20/1999
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical

KOPPERS, INC. (Continued) **1000346596**

Title:	Enforcement - 2 071141N01
Description:	Not reported
Program:	UNREGS
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0
Region:	2
Facility Id:	235225
Agency Name:	Koppers Inc
Place Type:	Manufacturing
Place Subtype:	Manufacturing NEC
Facility Type:	Solid Waste Class I - hazardous wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	2819
SIC Desc 1:	Industrial Inorganic Chemicals, NEC
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	UNREGS
Program Category1:	UNREGS
Program Category2:	Not reported
# Of Programs:	1
WDID:	2 071141N01
Reg Measure Id:	161558
Reg Measure Type:	Unregulated
Region:	2
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported

KOPPERS, INC. (Continued) **1000346596**

Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Never Active
Status Date:	02/21/2013
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	Not reported
Direction/Voice:	Passive
Enforcement Id(EID):	220265
Region:	2
Order / Resolution Number:	87-098
Enforcement Action Type:	Clean-up and Abatement Order
Effective Date:	08/22/1987
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 2 071141N01
Description:	WORKPLAN SUBMITTED, UNACCEPTABLE, 2ND WORKPLAN NOT RECEIVED. Not reported
Program:	UNREGS
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

HAZNET:

envid:	1000346596
Year:	2013
GEPAID:	CAC002729387
Contact:	CRAIG EYCHNER
Telephone:	5102346700
Mailing Name:	Not reported
Mailing Address:	P.O. BOX 6367
Mailing City,St,Zip:	SAN PABLO, CA 94806
Gen County:	Contra Costa
TSD EPA ID:	CAD981382732
TSD County:	Alameda
Waste Category:	Not reported

KOPPERS, INC. (Continued) **1000346596**

Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.4
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Not reported

HIST CORTESE:
Region: CORTESE
Facility County Code: 7
Reg By: WBC&D
Reg Id: 2 071141N01

NPDES:
Facility Status: Not reported
NPDES Number: Not reported
Region: Not reported
Agency Number: Not reported
Regulatory Measure ID: Not reported
Place ID: Not reported
Order Number: Not reported
WDID: 2 07I025140
Regulatory Measure Type: Industrial
Program Type: Not reported
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Expiration Date Of Regulatory Measure: Not reported
Discharge Address: Not reported
Discharge Name: Not reported
Discharge City: Not reported
Discharge State: Not reported
Discharge Zip: Not reported
Status: Active
Status Date: 11/12/2014
Operator Name: Encore Oils LLC
Operator Address: 3333 NW 35th Ave Building C
Operator City: Portland
Operator State: Oregon
Operator Zip: 97210

NPDES as of 03/2018:
NPDES Number: Not reported
Status: Not reported
Agency Number: Not reported
Region: 2
Regulatory Measure ID: 450998
Order Number: Not reported
Regulatory Measure Type: Industrial
Place ID: Not reported
WDID: 2 07I025140
Program Type: Not reported
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: Not reported
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Not reported

KOPPERS, INC. (Continued) **1000346596**

Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	11/12/2014
Processed Date:	11/12/2014
Status:	Active
Status Date:	11/12/2014
Place Size:	74000
Place Size Unit:	SqFt
Contact:	Lee Litvin
Contact Title:	Process Engineer
Contact Phone:	503-585-1673
Contact Phone Ext:	312
Contact Email:	leel@choosesq.com
Operator Name:	Encore Oils LLC
Operator Address:	3333 NW 35th Ave Building C
Operator City:	Portland
Operator State:	Oregon
Operator Zip:	97210
Operator Contact:	Lee Litvin
Operator Contact Title:	Process Engineer
Operator Contact Phone:	503-585-1673
Operator Contact Phone Ext:	312
Operator Contact Email:	leel@choosesq.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Oregon
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	San Pablo Bay
Certifier:	Lee Litvin
Certifier Title:	Process Engineer
Certification Date:	19-FEB-15

KOPPERS, INC. (Continued) **1000346596**

Primary Sic:	4212-Local Trucking Without Storage
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	450998
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 07I025140
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	11/12/2014
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Encore Oils LLC
Discharge Address:	3333 NW 35th Ave Building C
Discharge City:	Portland
Discharge State:	Oregon
Discharge Zip:	97210
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported

KOPPERS, INC. (Continued) **1000346596**

Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Active
NPDES Number:	CAS000001
Region:	2
Agency Number:	0
Regulatory Measure ID:	450998
Place ID:	Not reported
Order Number:	97-03-DWQ
WDID:	2 07I025140
Regulatory Measure Type:	Enrollee
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	11/12/2014
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	3333 NW 35th Ave Building C
Discharge Name:	Encore Oils LLC
Discharge City:	Portland
Discharge State:	Oregon
Discharge Zip:	97210
Status:	Not reported
Status Date:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	2
Regulatory Measure ID:	450998
Order Number:	Not reported

KOPPERS, INC. (Continued) **1000346596**

Regulatory Measure Type:	Industrial
Place ID:	Not reported
WDID:	2 07I025140
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	11/12/2014
Processed Date:	11/12/2014
Status:	Active
Status Date:	11/12/2014
Place Size:	74000
Place Size Unit:	SqFt
Contact:	Lee Litvin
Contact Title:	Process Engineer
Contact Phone:	503-585-1673
Contact Phone Ext:	312
Contact Email:	leel@choosesq.com
Operator Name:	Encore Oils LLC
Operator Address:	3333 NW 35th Ave Building C
Operator City:	Portland
Operator State:	Oregon
Operator Zip:	97210
Operator Contact:	Lee Litvin
Operator Contact Title:	Process Engineer
Operator Contact Phone:	503-585-1673
Operator Contact Phone Ext:	312
Operator Contact Email:	leel@choosesq.com
Operator Type:	Private Business
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Oregon
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported

KOPPERS, INC. (Continued) **1000346596**

Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	San Pablo Bay
Certifier:	Lee Litvin
Certifier Title:	Process Engineer
Certification Date:	19-FEB-15
Primary Sic:	4212-Local Trucking Without Storage
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	CAS000001
Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	450998
Order Number:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 07I025140
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	11/12/2014
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Encore Oils LLC
Discharge Address:	3333 NW 35th Ave Building C
Discharge City:	Portland
Discharge State:	Oregon
Discharge Zip:	97210
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported

KOPPERS, INC. (Continued) **1000346596**

Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0030564
Billing Status:	INACTIVE, NON-BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG: REPORTED ZERO
Region:	CONTRA COSTA
Cupa Number:	773895

Facility ID:	FA0030564
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP: >250K-500K LBS, 0-19 EMPLOYEES
Region:	CONTRA COSTA
Cupa Number:	773895

Facility ID:	FA0030564
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG: REPORTED ZERO
Region:	CONTRA COSTA
Cupa Number:	773895

CERS TANKS:

KOPPERS, INC. (Continued) **1000346596**

Site ID: 222087
CERS ID: L10008163078
CERS Description: Land Disposal Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: MARK JOHNSON - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title: Not reported
Affiliation Address: 1515 CLAY STREET, SUITE 1400
Affiliation City: OAKLAND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

CIWQS:
Agency: Encore Oils LLC
Agency Address: 3333 NW 35th Ave Building C, Portland, OR 97210
Place/Project Type: Industrial - Local Trucking Without Storage
SIC/NAICS: 4212
Region: 2
Program: INDSTW
Regulatory Measure Status: Active
Regulatory Measure Type: Storm water industrial
Order Number: 2014-0057-DWQ
WDID: 2 07I025140
NPDES Number: CAS000001
Adoption Date: Not reported
Effective Date: 11/12/2014
Termination Date: Not reported
Expiration/Review Date: Not reported
Design Flow: Not reported
Major/Minor: Not reported
Complexity: Not reported
TTWQ: Not reported
Enforcement Actions within 5 years: 0
Violations within 5 years: 0
Latitude: 37.98072
Longitude: -122.35429

F29 **J J MAGANA CORP** **SEMS-ARCHIVE** **1000921591**
SSW **3501 COLLINS AVE** **RCRA NonGen / NLR** **CAD043242718**
1/8-1/4 **RICHMOND, CA 94806** **FINDS**
0.243 mi. **ECHO**
1283 ft. **Site 2 of 3 in cluster F**

Relative: **Lower**
Actual: **31 ft.**

SEMS Archive:
Site ID: 901350
EPA ID: CAD043242718
Cong District: 7
FIPS Code: 6013
FF: N
NPL: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:
Region: 9

J J MAGANA CORP (Continued) **1000921591**

Site ID: 901350
EPA ID: CAD043242718
Site Name: KOPPERS INC
NPL: N
FF: N
OU: 0
Action Code: VS
Action Name: ARCH SITE
SEQ: 1
Start Date: Not reported
Finish Date: 1989-10-04 00:00:00
Qual: Not reported
Current Action Lead: EPA Perf In-Hse

Region: 9
Site ID: 901350
EPA ID: CAD043242718
Site Name: KOPPERS INC
NPL: N
FF: N
OU: 0
Action Code: DS
Action Name: DISCVRY
SEQ: 1
Start Date: 1987-11-01 00:00:00
Finish Date: 1987-11-01 00:00:00
Qual: Not reported
Current Action Lead: St Perf

Region: 9
Site ID: 901350
EPA ID: CAD043242718
Site Name: KOPPERS INC
NPL: N
FF: N
OU: 0
Action Code: PA
Action Name: PA
SEQ: 1
Start Date: Not reported
Finish Date: 1989-10-04 00:00:00
Qual: N
Current Action Lead: St Perf

RCRA NonGen / NLR:
Date form received by agency: 05/20/1994
Facility name: J J MAGANA CORP
Facility address: 3501 COLLINS AVE
RICHMOND, CA 94806
EPA ID: CAD043242718
Contact: DARYL MAGANA
Contact address: 3501 COLLINS AVE
RICHMOND, CA 94806
Contact country: US
Contact telephone: 510-232-0202
Contact email: Not reported

J J MAGANA CORP (Continued) **1000921591**

EPA Region: 09
Land type: Private
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: JESUS MAGANA
Owner/operator address: 3501 COLLINS AVE
RICHMOND, CA 94806
Owner/operator country: Not reported
Owner/operator telephone: 510-232-0202
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: KOPPERS COMPANY INC
Owner/operator address: 3501 COLLINS AVENUE
CITY NOT REPORTED, CA 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-232-0202
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: Yes
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 03/05/1992
Site name: BEAZER EAST, INC.
Classification: Large Quantity Generator

Facility Has Received Notices of Violations:

J J MAGANA CORP (Continued) **1000921591**

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 06/18/1993
Date achieved compliance: 07/23/1993
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/27/1993
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 02/27/1984
Date achieved compliance: 10/03/1986
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 04/27/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/23/1993
Evaluation lead agency: EPA

Evaluation date: 10/03/1986
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/27/1984
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/03/1986
Evaluation lead agency: State

FINDS:

Registry ID: 110009530089

Environmental Interest/Information System
US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

J J MAGANA CORP (Continued) **1000921591**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000921591
Registry ID:	110009530089
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110009530089

F30 **KOPPERS CO., INC.** **HIST UST** **1000346598**
SSW **3501 COLLINS AVE** **N/A**
1/8-1/4 **RICHMOND, CA 94806**
0.243 mi.
1283 ft. **Site 3 of 3 in cluster F**

Relative: **Lower**

Actual: **31 ft.**

HIST UST:

File Number:	Not reported
URL:	Not reported
Region:	STATE
Facility ID:	00000004626
Facility Type:	Other
Other Type:	POLYESTER RESIN MFG.
Contact Name:	CHARLES COMSTOCK
Telephone:	4152320202
Owner Name:	KOPPERS CO., INC
Owner Address:	KOPPERS BUILDING
Owner City,St,Zip:	PITTSBURGH, PA 15219
Total Tanks:	0001
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00000000
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	6
Leak Detection:	Visual

31
SSW
1/4-1/2
0.282 mi.
1487 ft.

CHEVRON USA INC SAN PABLO TANK FARM
GIANT RD & MINER AVE
RICHMOND, CA 94806

SEMS-ARCHIVE **1000434407**
RCRA-SQG **CAD000625913**

Relative:
Lower

Actual:
31 ft.

SEMS Archive:

Site ID:	903189
EPA ID:	CAD000625913
Cong District:	7
FIPS Code:	6013
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:

Region:	9
Site ID:	903189
EPA ID:	CAD000625913
Site Name:	CHEVRON LAND & DEV CO HILLTOP WEST
NPL:	N
FF:	N
OU:	0
Action Code:	VS
Action Name:	ARCH SITE
SEQ:	1
Start Date:	Not reported
Finish Date:	1988-03-01 00:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf In-Hse

Region:	9
Site ID:	903189
EPA ID:	CAD000625913
Site Name:	CHEVRON LAND & DEV CO HILLTOP WEST
NPL:	N
FF:	N
OU:	0
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	Not reported
Finish Date:	1988-03-01 00:00:00
Qual:	N
Current Action Lead:	EPA Perf

Region:	9
Site ID:	903189
EPA ID:	CAD000625913
Site Name:	CHEVRON LAND & DEV CO HILLTOP WEST
NPL:	N
FF:	N
OU:	0
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	1987-12-01 00:00:00
Finish Date:	1987-12-01 00:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

CHEVRON USA INC SAN PABLO TANK FARM (Continued) **1000434407**

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: CHEVRON USA INC SAN PABLO TANK FARM
Facility address: GIANT RD & MINER AVE
RICHMOND, CA 94806
EPA ID: CAD000625913
Mailing address: P O BOX 1272
RICHMOND, CA 94802
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: CHEVRON USA INC
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No

CHEVRON USA INC SAN PABLO TANK FARM (Continued) **1000434407**

On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	08/18/1980
Site name:	CHEVRON USA INC SAN PABLO TANK FARM
Classification:	Large Quantity Generator
Violation Status:	No violations found

32
SW
1/4-1/2
0.286 mi.
1512 ft.

Relative:
Lower

Actual:
29 ft.

REACTION PRODUCTS
840 MORTON AVENUE
RICHMOND, CA 94806

RESPONSE **1000925901**
ENVIROSTOR **N/A**
LUST
HIST Cal-Sites
LIENS
CHMIRS
Cortese
HIST CORTESE
CONTRA COSTA CO. SITE LIST
WDS
CERS

AWP:

AWP Facility ID:	07280013
Region Code:	2
Region:	BERKELEY
SMBR Branch Code:	NC
SMBR Branch Unit:	NORTH COAST
Site Name.:	Not reported
Current Status Date:	11071996
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	JSOTO
Supervisor Responsible:	Not reported
SIC Code:	28
Facility SIC:	MANU - CHEMICALS & ALLIED PRODUCTS
RWQCB Code:	SF
RWQCB Associated With Site:	SAN FRANCISCO BAY
Site Access Controlled:	Controlled
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	2
Lat/Long:	Not reported

REACTION PRODUCTS (Continued) **1000925901**

Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	14
State Senate District:	07

RESPONSE:

Facility ID:	7280013
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	3
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Allan Fone
Supervisor:	Daniel Murphy
Division Branch:	Cleanup Berkeley
Site Code:	200599
Site Mgmt. Req.:	NONE SPECIFIED
Assembly:	15
Senate:	09
Special Program Status:	Not reported
Status:	Active
Status Date:	11/07/1996
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	37.98192
Longitude:	-122.3565
APN:	408060009
Past Use:	MANUFACTURING - CHEMICALS
Potential COC :	Trichloroethylene (TCE 1,1-Dichloroethylene
Confirmed COC:	Trichloroethylene (TCE 1,1-Dichloroethylene
Potential Description:	OTH, SOIL
Alias Name:	Not reported
Alias Type:	Not reported

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

ENVIROSTOR:

Facility ID:	7280013
Status:	Active
Status Date:	11/07/1996

REACTION PRODUCTS (Continued) **1000925901**

Site Code: 200599
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 3
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Allan Fone
Supervisor: Daniel Murphy
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Responsible Party
Latitude: 37.98192
Longitude: -122.3565
APN: 408060009
Past Use: MANUFACTURING - CHEMICALS
Potential COC: Trichloroethylene (TCE 1,1-Dichloroethylene
Confirmed COC: Trichloroethylene (TCE 1,1-Dichloroethylene
Potential Description: OTH, SOIL
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

LUST:
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601300231
Global Id: T0601300231
Latitude: 37.98192
Longitude: -122.356537
Status: Completed - Case Closed
Status Date: 01/10/1996
Case Worker: UUU
RB Case Number: 07-0249
Local Agency: CONTRA COSTA COUNTY
File Location: Not reported
Local Case Number: 07561

REACTION PRODUCTS (Continued) **1000925901**

Potential Media Affect: Under Investigation
Potential Contaminants of Concern: * Solvents
Site History: Not reported

LUST:
Global Id: T0601300231
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

Global Id: T0601300231
Contact Type: Local Agency Caseworker
Contact Name: SUE LOYD
Organization Name: CONTRA COSTA COUNTY
Address: 4333 PACHECO BLVD.
City: MARTINEZ
Email: sloyd@hsd.co.contra-costa.ca.us
Phone Number: Not reported

LUST:
Global Id: T0601300231
Action Type: Other
Date: 08/14/1988
Action: Leak Discovery

Global Id: T0601300231
Action Type: Other
Date: 08/14/1988
Action: Leak Stopped

Global Id: T0601300231
Action Type: Other
Date: 08/14/1988
Action: Leak Reported

LUST:
Global Id: T0601300231
Status: Completed - Case Closed
Status Date: 01/10/1996

Global Id: T0601300231
Status: Open - Case Begin Date
Status Date: 08/14/1988

LUST REG 2:
Region: 2
Facility Id: 07-0249
Facility Status: Case Closed
Case Number: 07561
How Discovered: Tank Closure
Leak Cause: Structure Failure

REACTION PRODUCTS (Continued) **1000925901**

Leak Source: Tank
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

Calsite:
Region: BERKELEY
Facility ID: 07280013
Facility Type: RP
Type: RESPONSIBLE PARTY
Branch: NC
Branch Name: NORTH COAST
File Name: Not reported
State Senate District: 11071996
Status: ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
NPL: Not Listed
SIC Code: 28
SIC Name: MANU - CHEMICALS & ALLIED PRODUCTS
Access: Controlled
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: JSOTO
Supervisor Responsible for Site: Not reported
Region Water Control Board: SF
Region Water Control Board Name: SAN FRANCISCO BAY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 14
State Senate District Code: 07
Facility ID: 07280013
Activity: SS
Activity Name: SITE SCREENING
AWP Code: Not reported
Proposed Budget: 0
AWP Completion Date: Not reported
Revised Due Date: Not reported
Comments Date: 09271994
Est Person-Yrs to complete: 0
Estimated Size: Not reported
Request to Delete Activity: Not reported
Activity Status: AWP
Definition of Status: ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals): 0
Liquids Treated (Gals): 0
Action Included Capping: Not reported
Well Decommissioned: Not reported

REACTION PRODUCTS (Continued) **1000925901**

Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280013
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	ISE
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	11071996
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280013
Activity:	RAW
Activity Name:	REMOVAL ACTION WORKPLAN
AWP Code:	IRM
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10281997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280013
Activity:	RA

REACTION PRODUCTS (Continued) **1000925901**

Activity Name:	REMOVAL ACTION
AWP Code:	IRM
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	12311998
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	250
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	N
Activity Comments:	250 CUBIC YARDS OF TCE CONTAMINATED SOILS WAS TREATED ON-SITE VIAPASSIVE AERATION.
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280013
Activity:	CERT
Activity Name:	CERTIFICATION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	07312005
Revised Due Date:	06302006
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280013
Activity:	CEQA
Activity Name:	CEQA INCLUDING NEGATIVE DECS
AWP Code:	NEG'D
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10281997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported

REACTION PRODUCTS (Continued) **1000925901**

Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280013
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	ISE
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03152000
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280013
Activity:	FDNC
Activity Name:	FINAL DETERMINATION OF NON-COMPLIANCE
AWP Code:	FDNC
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07122001
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported

REACTION PRODUCTS (Continued) **1000925901**

Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280013
Activity:	RAW
Activity Name:	REMOVAL ACTION WORKPLAN
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	10312004
Revised Due Date:	08302005
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280013
Activity:	RA
Activity Name:	REMOVAL ACTION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	01312005
Revised Due Date:	01312006
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	AWP
Definition of Status:	ANNUAL WORKPLAN - ACTIVE SITE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Alternate Address:	840 MORTON AVENUE
Alternate City,St,Zip:	RICHMOND, CA 94804
Alternate Address:	940 MORTON AVENUE
Alternate City,St,Zip:	RICHMOND, CA 94804

REACTION PRODUCTS (Continued) **1000925901**

Alternate Address:	840 MORTON AVENUE
Alternate City,St,Zip:	RICHMOND, CA 94806
Background Info:	Reaction Products is a manufacturer and wholesaler of water treatment chemicals and other chemical mixtures used for industrial uses. The Site occupies about four acres.
Comments Date:	01272004
Comments:	Final Remedial Investigation and Baseline Risk Assessment
Comments Date:	01272004
Comments:	Report. Remedial Investigation results indicate that VOCs in
Comments Date:	01272004
Comments:	groundwater are the primary concern for this site. The primary
Comments Date:	01272004
Comments:	compounds of concern are 1,2-DCA, 1,1-DCE and TCE. Total
Comments Date:	01272004
Comments:	petroleum hydrocarbons as gasoline and the associated component
Comments Date:	01272004
Comments:	benzene has been found commingled with the above listed
Comments Date:	01272004
Comments:	solvents. No contaminants were detected in soil or soil-vapor at
Comments Date:	01272004
Comments:	concentrations exceeding laboratory non-detectable reporting
Comments Date:	01272004
Comments:	limits. Based on the Baseline Risk Assessment, it was concluded
Comments Date:	01272004
Comments:	that exposure pathway associated with groundwater will not
Comments Date:	01272004
Comments:	affect human and ecological welfare.
Comments Date:	03152000
Comments:	ORDER - ISE - Imminent and Substantial Endangerment Order issued
Comments Date:	03152000
Comments:	requiring development of an overall site investigation and
Comments Date:	03152000
Comments:	remediation strategy.
Comments Date:	07122001
Comments:	FDNC - Issued Final Determination of Non-Compliance due to
Comments Date:	07122001
Comments:	failure to submit Remedial Investigation (RI) Workplan.
Comments Date:	10281997
Comments:	RAW -IRM - RAW required excavated soil to be aerated on site.
Comments Date:	11071996
Comments:	ORDER - ISE - ISE Order issued requiring hot spot removal of
Comments Date:	11071996
Comments:	contaminated soil.
Comments Date:	12311998
Comments:	RA - IRM - About 250 cubic yards of contaminated soils were
Comments Date:	12311998
Comments:	excavated, stockpiled on site, and aerated to the <1.0 ppm TCE
Comments Date:	12311998
Comments:	treatment standard. The excavation was backfilled with clean
Comments Date:	12311998
Comments:	soil. About 6,100 gallons of groundwater were pumped from the
Comments Date:	12311998
Comments:	excavation and discharged to the sewer under a permit.
ID Name:	CALSTARS CODE
ID Value:	200599
Alternate Name:	REACTION PRODUCTS
Alternate Name:	MERRILL BROTHERS

REACTION PRODUCTS (Continued) **1000925901**

Alternate Name: Not reported
Special Programs Code: Not reported
Special Programs Name: Not reported

LIENS:

Envirostor Id:	7280013
Latitude:	37.981920
Longitude:	-122.35653
Project Mgr:	ALLAN FONE
Project Code:	200599
If Satisfied:	YES
Date Satisfied:	2/28/2018
Site Status:	ACTIVE
Site Type:	STATE RESPONSE OR NPL
Completed:	09/09/2011
Lien Amount:	$280,649.69
Amount Remaining:	Not reported
APNS:	408060009
Description:	Reaction Products operated from the 1950's and was a manufacturer and wholesaler of water treatment chemicals and other chemical mixtures used for industrial uses. The company is no longer operating. Groundwater sampling conducted on Reaction Products property in the 1980's and 1990's by the neighboring Witco Corporation showed that, in addition contaminated groundwater that had migrated from Witco to Reaction Products, there had been a release of chlorinated solvents at Reaction Products. Further investigations conducted by Reaction documented a past release of chlorinated solvents, in particular trichloroethene (TCE) that impacted soil and groundwater. A cleanup action for contaminated soil was conducted in the late 1990's. In 2003, the remedial investigation was completed.

CHMIRS:

OES Incident Number:	1-7431
OES notification:	12/16/2011
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported

REACTION PRODUCTS (Continued) **1000925901**

CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Yes
Waterway:	Wetlands
Spill Site:	Merchant/Business,Residence
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1500
Year:	2011
Agency:	Citizen
Incident Date:	12/16/2011
Admin Agency:	Contra Costa County Health Services Department
Amount:	Not reported
Contained:	No
Site Type:	Wetlands
E Date:	Not reported
Substance:	Transmission Fluid/Oil/ Antifreeze, Gasoline and Roofing Tar
Quantity Released:	10
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	Caller substance is spread around the yard in buckets and dumped on the ground at an illegal chop shop./ junk yard. Caller states the location is next to San Francisco Bay. Caller is concerned that when it rains substance will over flow the containers. Caller states substance is leaking into the wetlands.
OES Incident Number:	08-3263
OES notification:	05/05/2008
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported

REACTION PRODUCTS (Continued) **1000925901**

Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Yes
Waterway:	Storm Drain/ San Pablo Bay
Spill Site:	Merchant/Business
Cleanup By:	Contractor
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	0800
Year:	2008
Agency:	Reaction Products
Incident Date:	5/5/2008
Admin Agency:	Contra Costa County Health Services Dept.
Amount:	Not reported
Contained:	Yes
Site Type:	Storm Drain/ San Pablo Bay
E Date:	Not reported
Substance:	Mineral Spirits
Quantity Released:	500
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported

REACTION PRODUCTS (Continued) **1000925901**

Description: Caller states thieves cut the fence and stole the valves on the tanks. Caller states substance went into a secondary containment area. Caller states the valve on the secondary containment areas was open (Possibly by the thieves) allowing the substance to go into the storm drain. Caller states a contractor is conducting clean-up operations. Caller states contractor will apply booms to the open ditch drainage system to stop the release from reaching the Bay. Caller states at this time non of the released substance has reached the bay. Caller states this incident occurred sometime over the weekend the exact date and time is unknown.

CORTESE:

Region:	CORTESE
Envirostor Id:	7280013
Site/Facility Type:	STATE RESPONSE
Cleanup Status:	ACTIVE
Status Date:	11/07/1996
Site Code:	200599
Latitude:	37.981920
Longitude:	-122.35653
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	envirostor
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Haz Waste & Substances Sites

HIST CORTESE:

Region:	CORTESE
Facility County Code:	7
Reg By:	CALSI
Reg Id:	07280013

Region:	CORTESE
Facility County Code:	7
Reg By:	LTNKA
Reg Id:	07-0249

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0030965
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP: 1K-10K LBS, 0-19 EMPLOYEES
Region:	CONTRA COSTA
Cupa Number:	707561

REACTION PRODUCTS (Continued) **1000925901**

WDS:

Facility ID:	San Francisco Bay 07I001695
Facility Type:	Not reported
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	2
Facility Telephone:	Not reported
Facility Contact:	Not reported
Agency Name:	REACTION PROD CO.
Agency Address:	Not reported
Agency City,St,Zip:	0
Agency Contact:	Not reported
Agency Telephone:	Not reported
Agency Type:	Not reported
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

CERS TANKS:

Site ID:	342072
CERS ID:	07280013
CERS Description:	State Response

Affiliation:

Affiliation Type Desc:	Lead Project Manager
Entity Name:	ALLAN FONE
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	BERKELEY
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

REACTION PRODUCTS (Continued) **1000925901**

Affiliation Type Desc:	Supervisor
Entity Name:	DANIEL MURPHY
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Site ID:	238038
CERS ID:	T0601300231
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	SUE LOYD - CONTRA COSTA COUNTY
Entity Title:	Not reported
Affiliation Address:	4333 PACHECO BLVD.
Affiliation City:	MARTINEZ
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	Regional Water Board - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title:	Not reported
Affiliation Address:	1515 CLAY ST SUITE 1400
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

G33 **WITCO CHEM CORP** **SEMS-ARCHIVE** **1000175631**
SW **850 MORTON AVE** **CORRACTS** **CAD009137779**
1/4-1/2 **RICHMOND, CA 94804** **RCRA-TSDF**
0.303 mi. **RCRA-SQG**
1600 ft. **Site 1 of 4 in cluster G** **US INST CONTROL**
ENVIROSTOR
Relative: Lower **SWEEPS UST**
HIST UST
Actual: 26 ft. **CA FID UST**
DEED
US FIN ASSUR
2020 COR ACTION
FINDS
ECHO
Financial Assurance
HAZNET
ICE
HWP
CERS

SEMS Archive:

WITCO CHEM CORP (Continued) **1000175631**

Site ID: 903111
EPA ID: CAD009137779
Cong District: 7
FIPS Code: 6013
FF: N
NPL: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:

Region: 9
Site ID: 903111
EPA ID: CAD009137779
Site Name: WITCO CHEM CORP
NPL: N
FF: N
OU: 0
Action Code: VS
Action Name: ARCH SITE
SEQ: 1
Start Date: Not reported
Finish Date: 1989-07-24 00:00:00
Qual: Not reported
Current Action Lead: EPA Perf In-Hse

Region: 9
Site ID: 903111
EPA ID: CAD009137779
Site Name: WITCO CHEM CORP
NPL: N
FF: N
OU: 0
Action Code: DS
Action Name: DISCVRY
SEQ: 1
Start Date: 1987-12-01 00:00:00
Finish Date: 1987-12-01 00:00:00
Qual: Not reported
Current Action Lead: St Perf

Region: 9
Site ID: 903111
EPA ID: CAD009137779
Site Name: WITCO CHEM CORP
NPL: N
FF: N
OU: 0
Action Code: PA
Action Name: PA
SEQ: 2
Start Date: Not reported
Finish Date: 1989-07-24 00:00:00
Qual: N
Current Action Lead: St Perf

Region: 9
Site ID: 903111
EPA ID: CAD009137779
Site Name: WITCO CHEM CORP

WITCO CHEM CORP (Continued) **1000175631**

NPL: N
FF: N
OU: 0
Action Code: PA
Action Name: PA
SEQ: 1
Start Date: Not reported
Finish Date: 1988-11-29 00:00:00
Qual: D
Current Action Lead: St Perf

CORRACTS:

EPA ID: CAD009137779
EPA Region: 9
Area Name: ENTIRE FACILITY
Actual Date: 20160111
Action: CA100 - RFI Imposition
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: 20160208
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: ENTIRE FACILITY
Actual Date: 20130311
Action: CA725YE - Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: 20130305
Schedule end date: 20130315

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 20080828
Action: CA510 - Determination Of Technical Impracticability
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: 20080828
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: ENTIRE FACILITY
Actual Date: 20070926
Action: CA500 - CMI Workplan Approved
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing

WITCO CHEM CORP (Continued) **1000175631**

Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: ENTIRE FACILITY
Actual Date: 20070315
Action: CA400 - Date For Remedy Selection (CM Imposed)
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: 20070315
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: ENTIRE FACILITY
Actual Date: 20070315
Action: CA350 - CMS Approved
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: ENTIRE FACILITY
Actual Date: 20060811
Action: CA380 - Date For Public Notice On Proposed Remedy
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 20050729
Action: CA300 - CMS Workplan Approved
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: ENTIRE FACILITY
Actual Date: 20050725

WITCO CHEM CORP (Continued) **1000175631**

Action: CA350 - CMS Approved
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: ENTIRE FACILITY
Actual Date: 20040615
Action: CA200 - RFI Approved
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19990601
Action: CA340 - CMS Report Received
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19960412
Action: CA300 - CMS Workplan Approved
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19950830
Action: CA260 - CMS Workplan Received
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779

WITCO CHEM CORP (Continued) **1000175631**

EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19950531
Action: CA200 - RFI Approved
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19950512
Action: CA190 - RFI Report Received
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19931231
Action: CA150 - RFI Workplan Approved
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19930419
Action: CA100 - RFI Imposition
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19930203
Action: CA225YE - Stabilization Measures Evaluation, This facility ,is amenable to stabilization activity based on the, status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing

WITCO CHEM CORP (Continued) **1000175631**

Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: 19930203
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19930203
Action: CA225YE - Stabilization Measures Evaluation, This facility ,is amenable to stabilization activity based on the, status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19890324
Action: CA050RF - RFA Completed, Assessment was an RFA
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19890324
Action: CA050 - RFA Completed
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: 19890324
Schedule end date: Not reported

EPA ID: CAD009137779
EPA Region: 9
Area Name: TWO SURFACE IMPOUNDMENTS
Actual Date: 19890324
Action: CA070YE - RFA Determination Of Need For An RFI, RFI is Necessary
NAICS Code(s): 32511 32511 54172
Petrochemical Manufacturing
Petrochemical Manufacturing
Research and Development in the Social Sciences and Humanities
Original schedule date: 19890324
Schedule end date: Not reported

WITCO CHEM CORP (Continued) **1000175631**

RCRA-TSDF:
Date form received by agency: 09/01/1996
Facility name: WITCO CORPORATION
Facility address: 850 MORTON AVE
RICHMOND, CA 94804
EPA ID: CAD009137779
Mailing address: 850 MORTON AVENUE
RICHMOND, CA 94804
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: TSDF
Description: Handler is engaged in the treatment, storage or disposal of hazardous waste

Owner/Operator Summary:
Owner/operator name: WITCO CHEMICAL CORPORATION
Owner/operator address: 277 PARK AVENUE
NEW YORK, NY 10017
Owner/operator country: Not reported
Owner/operator telephone: 212-872-4243
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: WITCO CORPORATION
Owner/operator address: 520 MADISON AVE
NEW YORK, NY 10022
Owner/operator country: Not reported
Owner/operator telephone: 212-605-3800
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No

WITCO CHEM CORP (Continued) **1000175631**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 02/28/1992
Site name: WITCO CHEMICAL CORPORATION
Classification: Large Quantity Generator

Date form received by agency: 04/06/1990
Site name: WITCO CORPORATION/ARGUS DIV
Classification: Large Quantity Generator

Date form received by agency: 08/14/1980
Site name: WITCO CORPORATION
Classification: Large Quantity Generator

Corrective Action Summary:
Event date: 11/29/1988
Event: PA OR CERCLA INSPECTION

Event date: 03/24/1989
Event: RFA COMPLETED

Event date: 03/24/1989
Event: RFA COMPLETED-ASSESSMENT WAS A RFA

Event date: 03/24/1989
Event: DETERMINATION OF NEED FOR AN INVESTIGATION-INVESTIGATION IS NECESSARY

Event date: 07/24/1989
Event: CA PRIORITIZATION-MEDIUM CA PRIORITY

Event date: 07/24/1989
Event: LEAD AGENCY DETERMINATION

Event date: 07/24/1989
Event: PA OR CERCLA INSPECTION

Event date: 02/03/1993
Event: CA PRIORITIZATION-MEDIUM CA PRIORITY

Event date: 02/03/1993
Event: STABILIZATION MEASURES EVALUATION-FACILITY IS AMENABLE TO STABILIZATION

Event date: 02/03/1993
Event: STABILIZATION MEASURES EVALUATION-FACILITY IS AMENABLE TO STABILIZATION

Event date: 04/19/1993
Event: INVESTIGATION IMPOSITION

WITCO CHEM CORP (Continued) **1000175631**

Event date: 12/31/1993
Event: INVESTIGATION WORKPLAN APPROVED

Event date: 05/12/1995
Event: INVESTIGATION REPORT RECEIVED

Event date: 05/31/1995
Event: INVESTIGATION COMPLETE

Event date: 08/30/1995
Event: CMS WORKPLAN RECEIVED

Event date: 04/12/1996
Event: CMS WORKPLAN APPROVED

Event date: 05/19/1999
Event: INVESTIGATION IMPOSITION

Event date: 06/01/1999
Event: CMS REPORT RECEIVED

Event date: 06/15/2004
Event: INVESTIGATION COMPLETE

Event date: 09/09/2004
Event: INVESTIGATION IMPOSITION

Event date: 07/25/2005
Event: CMS COMPLETE

Event date: 07/29/2005
Event: CMS WORKPLAN APPROVED

Event date: 08/11/2006
Event: DATE FOR PUBLIC NOTICE ON PROPOSED REMEDY

Event date: 03/15/2007
Event: REMEDY DECISION

Event date: 03/15/2007
Event: REMEDY DECISION

Event date: 03/15/2007
Event: CMS COMPLETE

Event date: 05/23/2007
Event: INSTITUTIONAL CONTROLS ESTABLISHED-GOVERNMENTAL CONTROL

Event date: 09/26/2007
Event: CMI WORKPLAN APPROVED

Event date: 07/25/2008
Event: CA805

Event date: 08/28/2008
Event: DETERMINATION OF TECH IMPRACTICABILITY

WITCO CHEM CORP (Continued) **1000175631**

Event date: 10/30/2008
Event: CA805

Event date: 03/11/2013
Event: HUMAN EXPOSURES CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE

Event date: 01/11/2016
Event: INVESTIGATION IMPOSITION

Event date: Not reported
Event: 3004(U) C/A UNDER PERMIT

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: TSD IS-Ground-Water Monitoring
Date violation determined: 03/25/2003
Date achieved compliance: 09/09/2004
Violation lead agency: State
Enforcement action: SINGLE SITE CA/FO
Enforcement action date: 09/09/2004
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 30000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD IS-Ground-Water Monitoring
Date violation determined: 03/25/2003
Date achieved compliance: 09/09/2004
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/25/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 05/30/2001
Date achieved compliance: 01/16/2002
Violation lead agency: State
Enforcement action: SINGLE SITE CA/FO
Enforcement action date: 09/09/2004
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 30000
Paid penalty amount: Not reported

Regulation violated: Not reported

WITCO CHEM CORP (Continued) **1000175631**

Area of violation: TSD - Financial Requirements
Date violation determined: 05/30/2001
Date achieved compliance: 02/25/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/01/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 05/30/2001
Date achieved compliance: 01/16/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/01/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 04/26/2001
Date achieved compliance: 09/09/2004
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/01/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 04/26/2001
Date achieved compliance: 05/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/01/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Closure/Post-Closure

WITCO CHEM CORP (Continued) **1000175631**

Date violation determined: 04/26/2001
Date achieved compliance: 05/15/2001
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 04/26/2001
Date achieved compliance: 09/09/2004
Violation lead agency: State
Enforcement action: SINGLE SITE CA/FO
Enforcement action date: 09/09/2004
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 30000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 04/26/2001
Date achieved compliance: 09/09/2004
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 04/26/2001
Date achieved compliance: 05/15/2001
Violation lead agency: State
Enforcement action: SINGLE SITE CA/FO
Enforcement action date: 09/09/2004
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 30000
Paid penalty amount: Not reported

Regulation violated: F - 270
Area of violation: TSD - General
Date violation determined: 10/02/1995

WITCO CHEM CORP (Continued) **1000175631**

Date achieved compliance: 08/09/1996
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/02/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 07/27/1994
Date achieved compliance: 09/14/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/27/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.10-18.B
Area of violation: TSD - General
Date violation determined: 07/27/1994
Date achieved compliance: 09/14/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/27/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.50-56.D
Area of violation: TSD - General
Date violation determined: 04/16/1992
Date achieved compliance: 05/21/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/21/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 04/16/1992
Date achieved compliance: 05/21/1992

WITCO CHEM CORP (Continued) **1000175631**

Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/21/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.10-18.B
Area of violation: TSD - General
Date violation determined: 04/16/1992
Date achieved compliance: 05/21/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/21/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 04/16/1992
Date achieved compliance: 05/21/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/21/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.30-37.C
Area of violation: TSD - General
Date violation determined: 04/16/1992
Date achieved compliance: 05/21/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/21/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 01/30/1991
Date achieved compliance: 05/15/1991
Violation lead agency: State

WITCO CHEM CORP (Continued) **1000175631**

Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/11/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.90-94.F
Area of violation: TSD IS-Ground-Water Monitoring
Date violation determined: 06/25/1990
Date achieved compliance: 01/28/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/25/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 05/01/1989
Date achieved compliance: 03/07/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/20/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 05/01/1989
Date achieved compliance: 03/07/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/20/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 05/01/1989
Date achieved compliance: 03/07/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL

WITCO CHEM CORP (Continued) **1000175631**

Enforcement action date: 06/20/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 05/01/1989
Date achieved compliance: 03/07/1990
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 06/20/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 05/01/1989
Date achieved compliance: 03/07/1990
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 06/20/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 05/01/1989
Date achieved compliance: 03/07/1990
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 06/20/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 05/01/1989
Date achieved compliance: 03/07/1990
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 06/20/1989

WITCO CHEM CORP (Continued) **1000175631**

Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 05/01/1989
Date achieved compliance: 03/07/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/20/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 05/01/1989
Date achieved compliance: 03/09/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/20/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.90-94.F
Area of violation: TSD IS-Ground-Water Monitoring
Date violation determined: 05/01/1989
Date achieved compliance: 04/30/1990
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 06/20/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 05/01/1989
Date achieved compliance: 03/09/1992
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 06/20/1989
Enf. disposition status: Not reported

WITCO CHEM CORP (Continued) **1000175631**

Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.90-94.F
Area of violation: TSD IS-Ground-Water Monitoring
Date violation determined: 05/01/1989
Date achieved compliance: 04/30/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/20/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.90-94.F
Area of violation: TSD IS-Ground-Water Monitoring
Date violation determined: 01/31/1989
Date achieved compliance: 04/30/1990
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 08/02/1988
Date achieved compliance: 03/09/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/02/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 08/02/1988
Date achieved compliance: 05/15/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/02/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

WITCO CHEM CORP (Continued) **1000175631**

Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 08/02/1988
Date achieved compliance: 03/07/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/02/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 08/01/1988
Date achieved compliance: 08/09/1988
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/08/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 07/29/1987
Date achieved compliance: 03/07/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/03/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 01/15/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/22/2006
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported

WITCO CHEM CORP (Continued) **1000175631**

Date achieved compliance: Not reported
Evaluation lead agency: EPA Contractor/Grantee

Evaluation date: 12/21/2004
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/07/2004
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/09/2004
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/25/2003
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD IS-Ground-Water Monitoring
Date achieved compliance: 09/09/2004
Evaluation lead agency: State

Evaluation date: 06/11/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/06/2002
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/30/2001
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 02/25/2002
Evaluation lead agency: State

Evaluation date: 05/30/2001
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 01/16/2002
Evaluation lead agency: State

Evaluation date: 04/26/2001
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 09/09/2004
Evaluation lead agency: State

WITCO CHEM CORP (Continued) **1000175631**

Evaluation date: 04/26/2001
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/26/2001
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 05/15/2001
Evaluation lead agency: State

Evaluation date: 03/10/2000
Evaluation: GROUNDWATER MONITORING EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/26/1998
Evaluation: OPERATION AND MAINTENANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/26/1996
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/02/1995
Evaluation: OPERATION AND MAINTENANCE INSPECTION
Area of violation: TSD - General
Date achieved compliance: 08/09/1996
Evaluation lead agency: State

Evaluation date: 07/27/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 09/14/1994
Evaluation lead agency: State

Evaluation date: 07/27/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 09/14/1994
Evaluation lead agency: State

Evaluation date: 02/21/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 05/21/1992
Evaluation lead agency: State

Evaluation date: 02/21/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General

WITCO CHEM CORP (Continued) **1000175631**

Date achieved compliance: 05/21/1992
Evaluation lead agency: State

Evaluation date: 01/30/1991
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 05/15/1991
Evaluation lead agency: State

Evaluation date: 01/28/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/25/1990
Evaluation: GROUNDWATER MONITORING EVALUATION
Area of violation: TSD IS-Ground-Water Monitoring
Date achieved compliance: 01/28/1991
Evaluation lead agency: State

Evaluation date: 03/30/1990
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/26/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/01/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD IS-Ground-Water Monitoring
Date achieved compliance: 04/30/1990
Evaluation lead agency: State

Evaluation date: 05/01/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 03/09/1992
Evaluation lead agency: State

Evaluation date: 05/01/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 03/07/1990
Evaluation lead agency: State

Evaluation date: 05/01/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 03/07/1990
Evaluation lead agency: State

WITCO CHEM CORP (Continued) **1000175631**

Evaluation date: 03/07/1989
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/31/1989
Evaluation: GROUNDWATER MONITORING EVALUATION
Area of violation: TSD IS-Ground-Water Monitoring
Date achieved compliance: 04/30/1990
Evaluation lead agency: State

Evaluation date: 08/02/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 08/02/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 03/09/1992
Evaluation lead agency: State

Evaluation date: 08/02/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Financial Requirements
Date achieved compliance: 05/15/1991
Evaluation lead agency: State

Evaluation date: 08/02/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 03/07/1990
Evaluation lead agency: State

Evaluation date: 08/01/1988
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 08/09/1988
Evaluation lead agency: State

Evaluation date: 07/29/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 03/07/1990
Evaluation lead agency: State

US INST CONTROL:
EPA ID: CAD009137779
Site ID: Not reported
Name: WITCO CORPORATION
Action Name: Not reported
Address: 850 MORTON AVE
RICHMOND, CA 94804
EPA Region: 9
County: CONTRA COSTA
Event Code: CA772GC

WITCO CHEM CORP (Continued) **1000175631**

Inst. Control: Not reported
Actual Date: 05/23/2007
Complet. Date: 01/01/1900
Operable Unit: Not reported
Contaminated Media : Not reported
Contact Name : Not reported
Contact Phone and Ext : Not reported
Event Code Description: INSTITUTIONAL CONTROLS ESTABLISHED-GOVERNMENTAL CONTROL

ENVIROSTOR:
Facility ID: 7280102
Status: Refer: RCRA
Status Date: 01/19/1989
Site Code: Not reported
Site Type: Historical
Site Type Detailed: * Historical
Acres: 8.5
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: * CERC2
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.98085
Longitude: -122.3551
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: * HALOGENATED ORGANIC COMPOUNDS * HALOGENATED SOLVENTS * HYDROCARBON SOLVENTS * OTHER ORGANIC SOLIDS * OXYGENATED SOLVENTS * AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES > 10 * UNSPECIFIED ALKALINE SOLUTIONS * AQUEOUS SOLUTION 2<PH<12.5, WITH REACTIVE ANIONS
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported

WITCO CHEM CORP (Continued) **1000175631**

Schedule Revised Date: Not reported

Facility ID: 80001603
Status: Active
Status Date: 01/01/2008
Site Code: 202087
Site Type: Corrective Action
Site Type Detailed: Corrective Action
Acres: 8.5
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: WM
Program Manager: Allan Fone
Supervisor: Daniel Murphy
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: YES
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.98240
Longitude: -122.3549
APN: 408060012, 408060020, 408060021, 408060022
Past Use: MANUFACTURING - CHEMICALS, WASTE WATER PONDS, MANUFACTURING - CHEMICALS, WASTE WATER PONDS
Potential COC: Benzene 1,1,1-Trichloroethane (TCA Trichloroethylene (TCE Furan 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrahydrofuran 1,1,2-Trichloroethane Tetrahydrofuran
Confirmed COC: Tetrahydrofuran Benzene 1,1,2,2-Tetrachloroethane Tetrahydrofuran 1,1,2-Trichloroethane 1,1,1-Trichloroethane (TCA 1,1,1,2-Tetrachloroethane Trichloroethylene (TCE Furan
Potential Description: OTH, OTH, SOIL
Alias Name: Argus Chemical Corporation
Alias Type: Alternate Name
Alias Name: CK Witco Corporation
Alias Type: Alternate Name
Alias Name: Chemtura Corporation
Alias Type: Alternate Name
Alias Name: Crompton Corporation
Alias Type: Alternate Name
Alias Name: Lanxess AG
Alias Type: Alternate Name
Alias Name: U.S. Peroxygen Corporation
Alias Type: Alternate Name
Alias Name: Witco Corporation
Alias Type: Alternate Name
Alias Name: 408060012
Alias Type: APN
Alias Name: 408060020
Alias Type: APN
Alias Name: 408060021
Alias Type: APN
Alias Name: 408060022
Alias Type: APN
Alias Name: CAD009137779
Alias Type: EPA Identification Number

WITCO CHEM CORP (Continued) **1000175631**

Alias Name: 200207
Alias Type: Project Code (Site Code)
Alias Name: 202087
Alias Type: Project Code (Site Code)
Alias Name: 80001603
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/09/2014
Comments: Annual cost estimate letters for 2014-15 were sent to the property owners. The 2014-15 cost estimate currently includes only costs related to DTSC's administration of the 2007 land use covenant and to Terradex land use monitoring services.

Completed Area Name: ENTIRE FACILITY, TWO SURFACE IMPOUNDMENTS
Completed Sub Area Name: Not reported
Completed Document Type: * Historical Post Closure Permit Authority
Completed Date: 04/19/1993
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedy Selected
Completed Date: 03/15/2007
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/22/2016
Comments: 2016-17 Annual Oversight Cost Estimate

Completed Area Name: Sites With No Operable Unit
Completed Sub Area Name: TWO SURFACE IMPOUNDMENTS
Completed Document Type: Interim Measures Questionnaire
Completed Date: 02/03/1993
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/27/2017
Comments: 2017-18 Annual Cost Estimate mailed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Monitoring Report
Completed Date: 03/11/2009
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 07/24/1989
Comments: US EPA review of DHS PA. EPA concludes no further action under CERCLA.

WITCO CHEM CORP (Continued) **1000175631**

Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Report
Completed Date: 07/14/2016
Comments: DTSC letter approving Current Conditions Report and Workplan to conduct additional soil, groundwater and soil vapor sampling.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 05/19/2016
Comments: Final annual land use covenant inspection report

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 03/10/2017
Comments: The 2017 annual land use covenant (LUC) inspection letter fulfills the annual LUC reporting requirement for the year ending in February 2017.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 11/19/2010
Comments: Letters and draft consent agreements sent to property owners on 11/19/2010.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedy Selection and Statement of Basis
Completed Date: 03/15/2007
Comments: Corrective Action - Final Remedy Selection Document & Approval Letter

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Agreement
Completed Date: 01/11/2016
Comments: Corrective Action Consent Agreement executed. The Agreement requires the property owners to perform corrective action to address any remaining contamination at the former Witco/Chemtura facility..

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 05/19/1999
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 09/09/2004
Comments: A new Consent Order was agreed upon between the property purchaser (Crompton Corporation) and DTSC.

WITCO CHEM CORP (Continued) **1000175631**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Human Exposure Controlled
Completed Date: 03/11/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 01/28/2016
Comments: DTSC letter with 2015-16 oversight cost estimate

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Monitoring Plan
Completed Date: 03/11/2009
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Monitoring Report
Completed Date: 10/30/2008
Comments: 3rd. Qtr. GW Report

Completed Area Name: Sites With No Operable Unit
Completed Sub Area Name: TWO SURFACE IMPOUNDMENTS
Completed Document Type: Corrective Measures Study Workplan
Completed Date: 07/29/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: RFI Report
Completed Date: 06/15/2004
Comments: HHRA Approval. Laki1/23/09

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Corrective Measures Study Report
Completed Date: 07/25/2005
Comments: CMS Technical Complete. Laki 1/23/09

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Corrective Measure Implementation Workplan
Completed Date: 09/26/2007
Comments: CMI Workplan Approved. Laki 1/26/09

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Notice
Completed Date: 08/11/2006
Comments: Public Notice on Proposed Remedy

Completed Area Name: ENTIRE FACILITY, TWO SURFACE IMPOUNDMENTS
Completed Sub Area Name: Not reported
Completed Document Type: RFI Report

WITCO CHEM CORP (Continued) **1000175631**

Completed Date: 05/31/1995
Comments: Not reported

Completed Area Name: ENTIRE FACILITY, TWO SURFACE IMPOUNDMENTS
Completed Sub Area Name: Not reported
Completed Document Type: RFI Workplan
Completed Date: 12/31/1993
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 11/29/1988
Comments: EPA Preliminary Assessment (PA) recommnended no further action under CERCLA.

Completed Area Name: ENTIRE FACILITY, TWO SURFACE IMPOUNDMENTS
Completed Sub Area Name: Not reported
Completed Document Type: Corrective Measures Study Workplan
Completed Date: 04/12/1996
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Monitoring Report
Completed Date: 07/25/2008
Comments: 2nd. Qtr. GW Report

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Corrective Measures Study Report
Completed Date: 03/15/2007
Comments: Corrective Action - Final Remedy Selection Document & Approval Letter

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction
Completed Date: 05/23/2007
Comments: Not reported

Completed Area Name: Sites With No Operable Unit
Completed Sub Area Name: TWO SURFACE IMPOUNDMENTS
Completed Document Type: Determination of Technical Impracticability
Completed Date: 08/28/2008
Comments: Pilot test results demonstrated that a revised rememedy is needed.

Completed Area Name: Sites With No Operable Unit
Completed Sub Area Name: TWO SURFACE IMPOUNDMENTS
Completed Document Type: RCRA Facility Assessment Report
Completed Date: 03/24/1989
Comments: RCRA Facility Assessment Completed, site formeraly known as Witco Chemical Corp., Crompton/Witco

Future Area Name: Sites With No Operable Unit
Future Sub Area Name: TWO SURFACE IMPOUNDMENTS
Future Document Type: Removal Action Completion Report
Future Due Date: 2019

WITCO CHEM CORP (Continued) **1000175631**

Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedy Constructed
Future Due Date:	2019
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Corrective Action Completion Determination
Future Due Date:	2019
Schedule Area Name:	Sites With No Operable Unit
Schedule Sub Area Name:	TWO SURFACE IMPOUNDMENTS
Schedule Document Type:	Corrective Measures Study Report
Schedule Due Date:	09/30/2018
Schedule Revised Date:	Not reported
Schedule Area Name:	Sites With No Operable Unit
Schedule Sub Area Name:	TWO SURFACE IMPOUNDMENTS
Schedule Document Type:	Corrective Measure Implementation Workplan
Schedule Due Date:	01/15/2019
Schedule Revised Date:	Not reported
Schedule Area Name:	Sites With No Operable Unit
Schedule Sub Area Name:	TWO SURFACE IMPOUNDMENTS
Schedule Document Type:	Fact Sheets
Schedule Due Date:	07/31/2018
Schedule Revised Date:	Not reported
Schedule Area Name:	Sites With No Operable Unit
Schedule Sub Area Name:	TWO SURFACE IMPOUNDMENTS
Schedule Document Type:	Public Notice
Schedule Due Date:	07/31/2018
Schedule Revised Date:	Not reported
Schedule Area Name:	Sites With No Operable Unit
Schedule Sub Area Name:	TWO SURFACE IMPOUNDMENTS
Schedule Document Type:	Remedy Selection and Statement of Basis
Schedule Due Date:	09/30/2018
Schedule Revised Date:	Not reported
Schedule Area Name:	PROJECT WIDE
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Groundwater Migration Controlled
Schedule Due Date:	10/30/2018
Schedule Revised Date:	Not reported
Schedule Area Name:	Sites With No Operable Unit
Schedule Sub Area Name:	TWO SURFACE IMPOUNDMENTS
Schedule Document Type:	CEQA - Notice of Exemption
Schedule Due Date:	09/30/2018
Schedule Revised Date:	Not reported

SWEEPS UST:

Status:	Not reported
Comp Number:	8428
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	07-000-008428-000001
Tank Status:	Not reported
Capacity:	5000
Active Date:	Not reported

WITCO CHEM CORP (Continued) **1000175631**

Tank Use: CHEMICAL
STG: PRODUCT
Content: PARAFIN
Number Of Tanks: 1

HIST UST:
File Number: 00023160
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00023160.pdf
Region: STATE
Facility ID: 00000008428
Facility Type: Other
Other Type: CHEMICAL MFG.
Contact Name: R. J. CORTEZ
Telephone: 4152335911
Owner Name: WITCO CHEMICAL CORPORATION
Owner Address: 522 MADISON AVE.
Owner City,St,Zip: NEW YORK, NY 10022
Total Tanks: 0011

Tank Num: 001
Container Num: POND NO. 1
Year Installed: Not reported
Tank Capacity: 00180000
Tank Used for: WASTE
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Groundwater Monitoring Well

Tank Num: 002
Container Num: POND NO. 2
Year Installed: Not reported
Tank Capacity: 00167000
Tank Used for: WASTE
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Groundwater Monitoring Well

Tank Num: 003
Container Num: SUMP A
Year Installed: Not reported
Tank Capacity: 00000550
Tank Used for: WASTE
Type of Fuel: Not reported
Container Construction Thickness: 6
Leak Detection: None

Tank Num: 004
Container Num: SUMP B
Year Installed: Not reported
Tank Capacity: 00003350
Tank Used for: WASTE
Type of Fuel: Not reported
Container Construction Thickness: 6
Leak Detection: None

Tank Num: 005
Container Num: SUMP C

WITCO CHEM CORP (Continued) **1000175631**

Year Installed:	Not reported
Tank Capacity:	00001675
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	6
Leak Detection:	None

Tank Num:	006
Container Num:	SUMP E
Year Installed:	Not reported
Tank Capacity:	00001615
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	6
Leak Detection:	None

Tank Num:	007
Container Num:	SUMP H
Year Installed:	Not reported
Tank Capacity:	00004500
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	6
Leak Detection:	None

Tank Num:	008
Container Num:	SUMP I
Year Installed:	Not reported
Tank Capacity:	00000300
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	4
Leak Detection:	None

Tank Num:	009
Container Num:	SUMP J
Year Installed:	Not reported
Tank Capacity:	00000360
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	6
Leak Detection:	None

Tank Num:	010
Container Num:	SUMP M
Year Installed:	Not reported
Tank Capacity:	00000360
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	None

Tank Num:	011
Container Num:	TANK L
Year Installed:	Not reported
Tank Capacity:	00005000
Tank Used for:	PRODUCT

WITCO CHEM CORP (Continued) **1000175631**

Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: None

Click here for Geo Tracker PDF:

CA FID UST:
Facility ID: 07000539
Regulated By: UTNKI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4152335911
Mail To: Not reported
Mailing Address: P O BOX
Mailing Address 2: Not reported
Mailing City,St,Zip: RICHMOND 94804
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

DEED:
Envirostor ID: 80001603
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: CORRECTIVE ACTION
Status: ACTIVE
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: Envirostor Land Use Restrictions

US FIN ASSUR:
EPA ID: CAD009137779
County: Not reported
Mechanism type: P
Mechanism Type Description: TRUST FUND (PAY-IN-TRUST)
Cost estimate: 2394280
Face value: 2394280
Effective date: 2009-09-28 00:00:00
Provider: JP MORGAN CHASE BANK
EPA region: 9

2020 COR ACTION:
EPA ID: CAD009137779
Region: 9
Action: Not reported

FINDS:

Registry ID: 110000609315

WITCO CHEM CORP (Continued) **1000175631**

Environmental Interest/Information System

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000175631
Registry ID:	110000609315
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110000609315

CA Financial Assurance 1:

EPA ID Number:	CAD009137779 80001603
Sudden Amount1:	Not reported
Non Sudden Amount1:	Not reported
Closure Mechanism:	Not reported
Closure Amount:	Not reported
Post Closure Mechanism:	Not reported
Post Closure Amount:	Not reported
Corrective Action Mechanism:	TA
Corrective Action Amount:	$2,396,584.44
Sudden Mechanism Type:	Not reported
Sudden Mechanism Amount:	Not reported
Non Sudden Mechanism Type:	Not reported
Non Sudden Mechanism Amount:	Not reported
O and M Mechanism Type:	Not reported
O and M Amount:	Not reported
Closure Mechanism Date of Mechanism:	Not reported
Closure Mechanism Renewal Date:	Not reported
Closure Mechanism Provider:	Not reported
Postclosure Mechanism Date of Mechanism:	Not reported
Postclosure Mechanism Renewal Date:	Not reported
Postclosure Mechanism Provider:	Not reported
O and M Mechanism Date of Mechanism:	Not reported
O and M Mechanism Renewal Date:	Not reported
O and M Mechanism Provider:	Not reported
Corrective Action Mechanism Date of Mechanism:	2016-06-29 00:00:00
Corrective Action Mechanism Renewal Date:	Not reported
Corrective Action Mechanism Provider:	Citibank

WITCO CHEM CORP (Continued) **1000175631**

Sudden Mechanism Date of Mechanism:	Not reported
Sudden Mechanism Renewal Date:	Not reported
Sudden Mechanism Provider:	Not reported
Non-Sudden Mechanism Date of Mechanism:	Not reported
Non-Sudden Mechanism Renewal Date:	Not reported
Non-Sudden Mechanism Provider:	Not reported
Date Entered into EnviroStor:	2016-08-09 00:00:00
Authorization Type:	Cleanup
Comments:	4/20/16 - per Estore info PC Permit terminaed through Consent Order, transferred to

HAZNET:

envid:	1000175631
Year:	1994
GEPAID:	CAD009137779
Contact:	WITCO CORPORATION
Telephone:	2035522000
Mailing Name:	Not reported
Mailing Address:	1 AMERICAN LN
Mailing City,St,Zip:	GREENWICH, CT 068312560
Gen County:	Not reported
TSD EPA ID:	UTD991301748
TSD County:	Not reported
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Not reported
Tons:	4.3576
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	7

envid:	1000175631
Year:	1994
GEPAID:	CAD009137779
Contact:	WITCO CORPORATION
Telephone:	2035522000
Mailing Name:	Not reported
Mailing Address:	1 AMERICAN LN
Mailing City,St,Zip:	GREENWICH, CT 068312560
Gen County:	Not reported
TSD EPA ID:	UTD991301748
TSD County:	Not reported
Waste Category:	Contaminated soil from site clean-up
Disposal Method:	Not reported
Tons:	19.3576
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	7

envid:	1000175631
Year:	1994
GEPAID:	CAD009137779
Contact:	WITCO CORPORATION
Telephone:	2035522000
Mailing Name:	Not reported
Mailing Address:	1 AMERICAN LN
Mailing City,St,Zip:	GREENWICH, CT 068312560
Gen County:	Not reported
TSD EPA ID:	UTD801301748

WITCO CHEM CORP (Continued) **1000175631**

TSD County: Not reported
Waste Category: Contaminated soil from site clean-up
Disposal Method: Not reported
Tons: 85.0000
Cat Decode: Not reported
Method Decode: Not reported
Facility County: 7

envid: 1000175631
Year: 1994
GEPAID: CAD009137779
Contact: WITCO CORPORATION
Telephone: 2035522000
Mailing Name: Not reported
Mailing Address: 1 AMERICAN LN
Mailing City,St,Zip: GREENWICH, CT 068312560
Gen County: Not reported
TSD EPA ID: UTD991301788
TSD County: Not reported
Waste Category: Contaminated soil from site clean-up
Disposal Method: Not reported
Tons: 91.0000
Cat Decode: Not reported
Method Decode: Not reported
Facility County: 7

envid: 1000175631
Year: 1994
GEPAID: CAD009137779
Contact: WITCO CORPORATION
Telephone: 2035522000
Mailing Name: Not reported
Mailing Address: 1 AMERICAN LN
Mailing City,St,Zip: GREENWICH, CT 068312560
Gen County: Not reported
TSD EPA ID: TTD991301748
TSD County: Not reported
Waste Category: Contaminated soil from site clean-up
Disposal Method: Disposal, Land Fill
Tons: 85.0000
Cat Decode: Not reported
Method Decode: Not reported
Facility County: 7

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

ICE:
Envirostor ID: 3001620
EPA ID: CAD009137779
Site Type: INSPECTION
Facility Status: No Action

Enforcement:
Action Type: Consent Order with Enforcement and Settlement - Federal CA/FO (385)
Action Date: 09/09/2004

WITCO CHEM CORP (Continued) **1000175631**

Inspection:

Action Type:	Compliance Evaluation Inspection - Treatment, Storage and Disposal
Action Date:	01/15/2008
Violation Class:	No Violations
RTC Date:	Not reported
Action Type:	Financial Records Review - Post-Closure
Action Date:	12/21/2004
Violation Class:	No Violations
RTC Date:	Not reported
Action Type:	Compliance Evaluation Inspection - Treatment, Storage and Disposal
Action Date:	06/11/2002
Violation Class:	No Violations
RTC Date:	Not reported
Action Type:	Financial Records Review - Post-Closure
Action Date:	05/30/2001
Violation Class:	Class 1, Minor
RTC Date:	02/25/2002
Action Type:	Financial Records Review - Treatment, Storage and Disposal
Action Date:	06/06/2002
Violation Class:	No Violations
RTC Date:	Not reported
Action Type:	Compliance Evaluation Inspection - Post-Closure
Action Date:	03/25/2003
Violation Class:	Class 1
RTC Date:	09/09/2004
Action Type:	Compliance Evaluation Inspection - Post-Closure
Action Date:	04/26/2001
Violation Class:	Class 1, Class 2, Minor
RTC Date:	09/09/2004
Action Type:	Compliance Evaluation Inspection - Post-Closure
Action Date:	10/07/2004
Violation Class:	No Violations
RTC Date:	Not reported
Action Type:	Groundwater Monitoring Evaluation - Treatment, Storage and Disposal
Action Date:	03/10/2000
Violation Class:	No Violations
RTC Date:	Not reported

HWP:

EPA Id:	CAD009137779
Cleanup Status:	UNDERGOING CLOSURE
Latitude:	37.98240
Longitude:	-122.3549
Facility Type:	Historical - Non-Operating
Facility Size:	Not reported
Team:	Not reported
Supervisor:	Not reported

WITCO CHEM CORP (Continued) **1000175631**

Site Code: 200207
Assembly District: 15
Senate District: 09
Public Information Officer: Not reported
Public Information Officer: Not reported

Activities:

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit), TANKSTR1
Event Description: New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST RECEIVED
Actual Date: 09/14/1984

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit), TANKSTR1
Event Description: New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST ACKNOWLEDGED
Actual Date: 09/14/1984

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit), TANKSTR1
Event Description: New Operating Permit - CALL-IN LETTER ISSUED
Actual Date: 02/01/1983

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit), TANKSTR1
Event Description: New Operating Permit - APPLICATION PART B RECEIVED
Actual Date: 08/01/1983

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit), TANKSTR1
Event Description: New Operating Permit - 1ST NOTICE OF DEFICIENCY ISSUED
Actual Date: 10/01/1983

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: Not reported
Event Description: New Variance - FINAL VARIANCE
Actual Date: 11/18/1988

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit), TANKSTR1
Event Description: New Operating Permit - RESPONSE TO 1ST NOD RECEIVED
Actual Date: 11/08/1983

Closure:

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: TANKSTR1
Event Description: Closure Final - RESPONSE TO 1ST NOD RECEIVED
Actual Date: 04/20/1990

EPA Id: CAD009137779

WITCO CHEM CORP (Continued) **1000175631**

Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: Closure - RECEIVE CLOSURE CERTIFICATION
Actual Date: 05/11/1987

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - 1ST NOTICE OF DEFICIENCY ISSUED
Actual Date: 05/04/1989

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - FINAL POST-CLOSURE PERMIT
Actual Date: 05/28/1992

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - FINAL POST-CLOSURE PERMIT (EXPIRES)
Actual Date: 07/11/2002

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: Closure - PUBLIC COMMENT (BEGIN)
Actual Date: 01/24/1986

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: Closure - ISSUE CLOSURE VERIFICATION
Actual Date: 09/15/1987

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - DRAFT POST-CLOSURE PERMIT
Actual Date: 07/25/1991

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - APPLICATION PART B RECEIVED
Actual Date: 06/08/1987

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - FINAL PART A & PART B RECEIVED
Actual Date: 06/08/1990

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - PUBLIC COMMENT (BEGIN)

WITCO CHEM CORP (Continued) **1000175631**

Actual Date: 07/25/1991

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - FINAL POST-CLOSURE PERMIT (EFFECTIVE)
Actual Date: 07/13/1992

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: Referred for closure to other agency - REFERRED FOR CLOSURE TO OTHER AGENCY
Actual Date: 04/23/2013

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: TANKSTR1
Event Description: Closure Final - RESPONSE TO 2ND NOD RECEIVED
Actual Date: 03/09/1992

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - CALL-IN LETTER ISSUED
Actual Date: 03/21/1987

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: TANKSTR1
Event Description: Closure Final - ISSUE CLOSURE VERIFICATION
Actual Date: 04/06/1994

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: Closure - PUBLIC COMMENT (END)
Actual Date: 02/23/1986

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: Closure - CLOSURE PLAN RECEIVED
Actual Date: 09/14/1984

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: Closure - CLOSURE PLAN APPROVED
Actual Date: 08/25/1986

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - PUBLIC COMMENT (END)
Actual Date: 09/08/1991

EPA Id: CAD009137779

WITCO CHEM CORP (Continued) **1000175631**

Facility Type: Historical - Non-Operating
Unit Names: TANKSTR1
Event Description: Closure Final - CLOSURE PLAN APPROVED
Actual Date: 06/25/1993

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: SURFIMP1 (GPRA Unit)
Event Description: New Post-Closure Permit - PERMIT TERMINATED - TERMINATION APPROVED
Actual Date: 05/19/1999

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Unit Names: TANKSTR1
Event Description: Closure Final - CLOSURE PLAN RECEIVED
Actual Date: 03/29/1989

Alias:
EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Alias Type: Project Code (Site Code)
Alias: 200207

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Alias Type: Alternate Name
Alias: Crompton Corporation

EPA Id: CAD009137779
Facility Type: Historical - Non-Operating
Alias Type: Alternate Name
Alias: Witco Corporation

Maintenance:
EPA Id: CAD009137779
Title: LUC for the Chemtura Corp facilitiy AKA Witco - Durkee site.
Document Type: Deed Restriction / LUC Issued
Received Date: 05/23/2007

CERS TANKS:
Site ID: 228079
CERS ID: CAD009137779
CERS Description: Hazardous Waste

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-25-2003
Violations Found: Yes
Eval Type: DTSC Compliance Evaluation Inspection
Eval Notes: Compliance Evaluation Inspection - Post-Closure Return To Compliance: 2004-09-09 00:00:00
Eval Division: Department of Toxic Substances Control
Eval Program: DTSC_ENF
Eval Source: ENVSTORHAZ

WITCO CHEM CORP (Continued) **1000175631**

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	01-15-2008
Violations Found:	No
Eval Type:	DTSC Compliance Evaluation Inspection
Eval Notes:	Compliance Evaluation Inspection - Treatment, Storage and Disposal
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-10-2000
Violations Found:	No
Eval Type:	DTSC Groundwater Monitoring Evaluation
Eval Notes:	Groundwater Monitoring Evaluation - Treatment, Storage and Disposal
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-26-2001
Violations Found:	Yes
Eval Type:	DTSC Compliance Evaluation Inspection
Eval Notes:	Compliance Evaluation Inspection - Post-Closure Return To Compliance: 2004-09-09 00:00:00
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ
Eval General Type:	Information Request
Eval Date:	06-06-2002
Violations Found:	No
Eval Type:	DTSC Financial Records Review
Eval Notes:	Financial Records Review - Treatment, Storage and Disposal
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-11-2002
Violations Found:	No
Eval Type:	DTSC Compliance Evaluation Inspection
Eval Notes:	Compliance Evaluation Inspection - Treatment, Storage and Disposal
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ
Eval General Type:	Information Request
Eval Date:	12-21-2004
Violations Found:	No
Eval Type:	DTSC Financial Records Review
Eval Notes:	Financial Records Review - Post-Closure
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-07-2004

WITCO CHEM CORP (Continued) **1000175631**

Violations Found:	No
Eval Type:	DTSC Compliance Evaluation Inspection
Eval Notes:	Compliance Evaluation Inspection - Post-Closure
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ
Eval General Type:	Information Request
Eval Date:	05-30-2001
Violations Found:	Yes
Eval Type:	DTSC Financial Records Review
Eval Notes:	Financial Records Review - Post-Closure Return To Compliance: 2002-02-25 00:00:00
Eval Division:	Department of Toxic Substances Control
Eval Program:	DTSC_ENF
Eval Source:	ENVSTORHAZ

Enforcement Action:

Site ID:	228079
Site Name:	CHEMTURA CORPORATION
Site Address:	850 MORTON AVE
Site City:	RICHMOND
Site Zip:	948040000
Enf Action Date:	09-09-2004
Enf Action Type:	Federal Consent Order with Enforcement and Settlement
Enf Action Description:	Federal Consent Order with Enforcement and Settlement
Enf Action Notes:	Not reported
Enf Action Division:	Department of Toxic Substances Control
Enf Action Program:	DTSC_ENF
Enf Action Source:	ENVSTORHAZ

Affiliation:

Affiliation Type Desc:	Facility Contact
Entity Name:	SUZANNE PATTON
Entity Title:	Not reported
Affiliation Address:	1 AMERICAN LN
Affiliation City:	GREENWICH
Affiliation State:	CT
Affiliation Country:	Not reported
Affiliation Zip:	068312560
Affiliation Phone:	4152335911
Affiliation Type Desc:	Facility Owner
Entity Name:	Chemtura Corporation
Entity Title:	Not reported
Affiliation Address:	199 BENSON RD
Affiliation City:	MIDDLEBURY
Affiliation State:	CT
Affiliation Country:	Not reported
Affiliation Zip:	06749
Affiliation Phone:	2035522000
Site ID:	336000
CERS ID:	80001603
CERS Description:	Corrective Action

WITCO CHEM CORP (Continued) **1000175631**

Affiliation:
Affiliation Type Desc: Lead Project Manager
Entity Name: ALLAN FONE
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: BERKELEY
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Supervisor
Entity Name: DANIEL MURPHY
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

G34 **CHEMTURA** **DEED** **S109517519**
SW **850 MORTON (3655 COLLINS AVE)** **ENF** **N/A**
1/4-1/2 **RICHMOND, CA 94804** **CONTRA COSTA CO. SITE LIST**
0.303 mi. **CIWQS**
1600 ft. **Site 2 of 4 in cluster G**

Relative: **Lower**
Actual: **26 ft.**

DEED:
Envirostor ID: CAD009137779
Area: Not reported
Sub Area: Not reported
Site Type: UNDERGOING CLOSURE
Status: UNDERGOING CLOSURE
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: Envirostor Land Use Restrictions

ENF:
Region: 2
Facility Id: 218727
Agency Name: Donald L Jones Company
Place Type: Manufacturing
Place Subtype: Manufacturing NEC
Facility Type: Industrial
Agency Type: Privately-Owned Business
Of Agencies: 1
Place Latitude: Not reported
Place Longitude: Not reported
SIC Code 1: 2869
SIC Desc 1: Industrial Organic Chemicals, NEC
SIC Code 2: Not reported
SIC Desc 2: Not reported
SIC Code 3: Not reported
SIC Desc 3: Not reported
NAICS Code 1: Not reported

CHEMTURA (Continued) **S109517519**

NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.0001
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	N - POTW does not have EPA approved pretreatment prog.
Facility Waste Type:	Process waste, NEC
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LNDISP
Program Category1:	LNDISP
Program Category2:	Not reported
# Of Programs:	1
WDID:	2 071127002
Reg Measure Id:	141673
Reg Measure Type:	WDR
Region:	2
Order #:	90-026
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Historical
Status Date:	04/12/2011
Effective Date:	02/21/1990
Expiration/Review Date:	02/21/2025
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	59 - Land Disposal Site not paying tipping fee
Direction/Voice:	Passive
Enforcement Id(EID):	224965
Region:	2
Order / Resolution Number:	UNKNOWN
Enforcement Action Type:	Oral Communication
Effective Date:	12/21/1999
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	12/21/1999
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical

CHEMTURA (Continued) **S109517519**

Title:	Enforcement - 2 071127002
Description:	Not reported
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0031438
Billing Status:	INACTIVE, NON-BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP GENERAL
Region:	CONTRA COSTA
Cupa Number:	708428

Facility ID:	FA0031438
Billing Status:	INACTIVE, NON-BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	UNDERGROUND STORAGE TANK SITE
Region:	CONTRA COSTA
Cupa Number:	708428

Facility ID:	FA0031438
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP: 1K-10K LBS, 20+ EMPLOYEES
Region:	CONTRA COSTA
Cupa Number:	708428

Facility ID:	FA0031438
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG: REPORTED ZERO
Region:	CONTRA COSTA
Cupa Number:	708428

CIWQS:

Agency:	Donald L Jones Company
Agency Address:	2081 Adams Avenue, San Leandro, CA 94577
Place/Project Type:	Manufacturing NEC
SIC/NAICS:	2869
Region:	2
Program:	LNDISP
Regulatory Measure Status:	Historical
Regulatory Measure Type:	WDR
Order Number:	90-026
WDID:	2 071127002
NPDES Number:	Not reported
Adoption Date:	02/21/1990
Effective Date:	02/21/1990

CHEMTURA (Continued) **S109517519**

Termination Date:	Not reported
Expiration/Review Date:	02/21/2025
Design Flow:	0.0001
Major/Minor:	Not reported
Complexity:	C
TTWQ:	3
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	Not reported
Longitude:	Not reported

G35 **WITCO, U.S. PEROXYGEN DIVISION** **Toxic Pits** **S100925065**
SW **850 MORTON AVENUE** **N/A**
1/4-1/2 **RICHMOND, CA 94804**
0.303 mi.
1600 ft. **Site 3 of 4 in cluster G**

Relative: TOXIC PITS:
Lower

Actual: Region:	02
26 ft. Task #:	82022
Owner:	WITCO
1/2 Mi Limit:	Y
Num. of Pits:	2
Cease Discharge Due:	06/30/88
Cease Discharge Complete:	11/01/84
Closure Due:	/ /
Closure Completed:	**07/25/91**
Status:	CLOSED
Hydro Geological Assessment Report Due:	/ /
Final Hydro Geological Assessment Review Completed:	/ /

G36 **CROMPTON CORPORATION PROPERTY** **WMUDS/SWAT** **S104384409**
SW **850 MORTON (3655 COLLINS AVE) AVE** **WDS** **N/A**
1/4-1/2 **RICHMOND, CA 94804**
0.303 mi.
1600 ft. **Site 4 of 4 in cluster G**

Relative: WMUDS/SWAT:
Lower

Actual: Edit Date:	Not reported
26 ft. Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.
Primary Waste:	PROCES
Primary Waste Type:	Hazardous/Influent or Solid Wastes that contain toxic, corrosive, ignitable or reactive substances and must be managed according to applicable DOHS standards.
Secondary Waste:	Process Waste (Waste produced as part of the industrial/manufacturing process)
Secondary Waste Type:	D
Base Meridian:	Not reported
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported

CROMPTON CORPORATION PROPERTY (Continued) **S104384409**

Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Private
Agency Name:	WITCO CORP.
Agency Department:	Not reported
Agency Address:	1 AMERICAN LN
Agency City,St,Zip:	GREENWICH CT 68312559
Agency Contact:	IRENE FRAM
Agency Telephone:	2035523155
Land Owner Name:	Not reported
Land Owner Address:	Not reported
Land Owner City,St,Zip:	Not reported
Land Owner Contact:	Not reported
Land Owner Phone:	Not reported
Region:	2
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	2869
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	True
Solid Waste Assessment Test Program:	False
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	True
Department of Defence:	False
Solid Waste Assessment Test Program:	Not reported
Threat to Water Quality:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Sub Chapter 15:	True
Regional Board Project Officer:	AWN
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	Yes
Waste Discharge Requirements:	A
Self-Monitoring Rept. Frequency:	Quarterly Submittal
Waste Discharge System ID:	2 071127002
Solid Waste Information ID:	Not reported

WDS:

Facility ID:	San Francisco Bay 071127002
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel

CROMPTON CORPORATION PROPERTY (Continued) **S104384409**

	washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	Not reported
Subregion:	2
Facility Telephone:	5105622580
Facility Contact:	CAREY JAMES
Agency Name:	DONALD L. JONES COMPANY
Agency Address:	2081 Adams Avenue
Agency City,St,Zip:	San Leandro 94577
Agency Contact:	DONALD L JONES
Agency Telephone:	Not reported
Agency Type:	Private
SIC Code:	2869
SIC Code 2:	Not reported
Primary Waste Type:	Hazardous/Influent or Solid Wastes that contain toxic, corrosive, ignitable or reactive substances and must be managed according to applicable DOHS standards.
Primary Waste:	PROCES
Waste Type2:	D
Waste2:	Process Waste (Waste produced as part of the industrial/manufacturing process)
Primary Waste Type:	Hazardous/Influent or Solid Wastes that contain toxic, corrosive, ignitable or reactive substances and must be managed according to applicable DOHS standards.
Secondary Waste:	Process Waste (Waste produced as part of the industrial/manufacturing process)
Secondary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The POTW Does not have an approved pretreatment program. Some POTWs may have local pretreatment programs that have not been approved by the regional board and/or EPA.
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

37 SSW 1/4-1/2 0.307 mi. 1619 ft. | **DENNISON-EASTMAN CO**
3451 COLLINS AVE
RICHMOND, CA 94804

Database(s): SEMS-ARCHIVE, RCRA-SQG, FINDS, ECHO
EDR ID Number: 1015732617
EPA ID Number: CAD001016286

Relative: Lower
Actual: 27 ft.

SEMS Archive:

Site ID:	905366
EPA ID:	CAD001016286
Cong District:	Not reported
FIPS Code:	6013
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:

Region:	9
Site ID:	905366
EPA ID:	CAD001016286
Site Name:	DENNISON MFG. CO.
NPL:	N
FF:	N
OU:	0
Action Code:	VS
Action Name:	ARCH SITE
SEQ:	1
Start Date:	1999-07-07 00:00:00
Finish Date:	1999-07-07 00:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf In-Hse

Region:	9
Site ID:	905366
EPA ID:	CAD001016286
Site Name:	DENNISON MFG. CO.
NPL:	N
FF:	N
OU:	0
Action Code:	OO
Action Name:	SITE REASS
SEQ:	1
Start Date:	2013-07-01 00:00:00
Finish Date:	2014-04-24 00:00:00
Qual:	N
Current Action Lead:	EPA Perf

Region:	9
Site ID:	905366
EPA ID:	CAD001016286
Site Name:	DENNISON MFG. CO.
NPL:	N
FF:	N
OU:	0
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	1997-09-25 00:00:00
Finish Date:	1997-09-25 00:00:00
Qual:	Not reported
Current Action Lead:	St Perf

DENNISON-EASTMAN CO (Continued) **1015732617**

Region:	9
Site ID:	905366
EPA ID:	CAD001016286
Site Name:	DENNISON MFG. CO.
NPL:	N
FF:	N
OU:	0
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	1997-10-20 00:00:00
Finish Date:	1999-05-20 00:00:00
Qual:	Not reported
Current Action Lead:	St Perf

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	DENNISON-EASTMAN CO
Facility address:	3451 COLLINS AVE RICHMOND, CA 94804
EPA ID:	CAD001016286
Mailing address:	COLLINS AVE RICHMOND, CA 94804
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	DENNISON MANUFACTURING CO
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported

DENNISON-EASTMAN CO (Continued) **1015732617**

Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110055819556

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1015732617
Registry ID: 110002629031
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002629031

38
SSW
1/4-1/2
0.349 mi.
1842 ft.

DENNISON EASTMAN CORP.
3451 COLLINS ST
RICHMOND, CA 94801

RESPONSE **S102860823**
ENVIROSTOR **N/A**
HIST Cal-Sites
CONTRA COSTA CO. SITE LIST
CERS

Relative:
Lower

Actual:
23 ft.

AWP:
AWP Facility ID: 07390027
Region Code: 2
Region: BERKELEY
SMBR Branch Code: NC
SMBR Branch Unit: NORTH COAST
Site Name.: Not reported

DENNISON EASTMAN CORP. (Continued) **S102860823**

Current Status Date:	04012005
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	Not reported
Responsible Staff Member:	VLASKY
Supervisor Responsible:	Not reported
SIC Code:	39
Facility SIC:	MISCELLANEOUS MANUFACTURING INDUSTRIES
RWQCB Code:	SF
RWQCB Associated With Site:	SAN FRANCISCO BAY
Site Access Controlled:	Controlled
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	0
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	14
State Senate District:	09

RESPONSE:

Facility ID:	7390027
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	10
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Not reported
Supervisor:	Karen Toth
Division Branch:	Cleanup Berkeley
Site Code:	201032
Site Mgmt. Req.:	NONE SPECIFIED
Assembly:	15
Senate:	09
Special Program Status:	EPA - PASI
Status:	No Further Action
Status Date:	05/23/2007
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	37.97991
Longitude:	-122.3556
APN:	408060006
Past Use:	MANUFACTURING - PAPER
Potential COC :	Benzene Tetrachloroethylene (PCE Trichloroethylene (TCE 1,2-Dichloroethylene (cis 1,2-Dichloroethylene (trans Ethylbenzene Pentachlorophenol Toluene Xylenes
Confirmed COC:	Toluene Tetrachloroethylene (PCE Trichloroethylene (TCE 1,2-Dichloroethylene (cis 1,2-Dichloroethylene (trans Ethylbenzene

DENNISON EASTMAN CORP. (Continued) **S102860823**

Pentachlorophenol Benzene Xylenes
Potential Description: OTH, SOIL
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 7390027
Status: No Further Action
Status Date: 05/23/2007
Site Code: 201032
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 10
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Karen Toth
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: EPA - PASI
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Responsible Party
Latitude: 37.97991
Longitude: -122.3556
APN: 408060006
Past Use: MANUFACTURING - PAPER
Potential COC: Benzene Tetrachloroethylene (PCE Trichloroethylene (TCE 1,2-Dichloroethylene (cis 1,2-Dichloroethylene (trans Ethylbenzene Pentachlorophenol Toluene Xylenes
Confirmed COC: Toluene Tetrachloroethylene (PCE Trichloroethylene (TCE 1,2-Dichloroethylene (cis 1,2-Dichloroethylene (trans Ethylbenzene Pentachlorophenol Benzene Xylenes
Potential Description: OTH, SOIL
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported

DENNISON EASTMAN CORP. (Continued) **S102860823**

Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Calsite:
Region: BERKELEY
Facility ID: 07390027
Facility Type: RP
Type: RESPONSIBLE PARTY
Branch: NC
Branch Name: NORTH COAST
File Name: Not reported
State Senate District: 04012005
Status: ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
NPL: Not Listed
SIC Code: 39
SIC Name: MISCELLANEOUS MANUFACTURING INDUSTRIES
Access: Controlled
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: VLASKY
Supervisor Responsible for Site: Not reported
Region Water Control Board: SF
Region Water Control Board Name: SAN FRANCISCO BAY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 14
State Senate District Code: 09
Facility ID: 07390027
Activity: PEA
Activity Name: PRELIMINARY ENDANGERMENT ASSESSMENT
AWP Code: Not reported
Proposed Budget: 0
AWP Completion Date: Not reported
Revised Due Date: Not reported
Comments Date: 06031998
Est Person-Yrs to complete: 0
Estimated Size: Not reported
Request to Delete Activity: Not reported
Activity Status: RR

DENNISON EASTMAN CORP. (Continued) **S102860823**

Definition of Status:	REMOVAL ACTION REQUIRED-USED FOR NON-AWP SITES
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07390027
Activity:	PEA
Activity Name:	PRELIMINARY ENDANGERMENT ASSESSMENT
AWP Code:	EPA
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	05201999
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	RR
Definition of Status:	REMOVAL ACTION REQUIRED-USED FOR NON-AWP SITES
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Alternate Address:	3451 COLLINS AVENUE
Alternate City,St,Zip:	RICHMOND, CA 94801
Alternate Address:	3451 COLLINS ST
Alternate City,St,Zip:	RICHMOND, CA 94801
Background Info:	In the 1950's, the facility was operated by Eastman Tag & Label Company. The site was used to manufacture printed paper products. Materials used in the manufacturing included printing solvents, paints and dyes. The facility ceased manufacturing in 1986 and operated as a warehouse until 1989.
Comments Date:	05201999
Comments:	Completed PEA. A Preliminary Assessment (PA) was conducted by
Comments Date:	05201999
Comments:	DTSC for the U.S. EPA. The PA found that no further action was
Comments Date:	05201999
Comments:	needed under CERCLA, but that DTSC may follow up on
Comments Date:	05201999
Comments:	contamination at the Site. Soil and groundwater investigations
Comments Date:	05201999
Comments:	were conducted by Dennison prior to selling the property.
Comments Date:	05201999
Comments:	Volatile organic compounds (VOCs) were found in both soil and

DENNISON EASTMAN CORP. (Continued) **S102860823**

Comments Date: 05201999
Comments: groundwater. Trichloroethylene and tetrachloroethylene in soil
Comments Date: 05201999
Comments: were below the US EPA Region 9 Preliminary Remediation Goals
Comments Date: 05201999
Comments: (PRGs). In groundwater, they were found above the Maximum
Comments Date: 05201999
Comments: Contaminant Level (MCL).
Comments Date: 08211997
Comments: Completed Site Screening. Additional assessment of the Site is
Comments Date: 08211997
Comments: required. A Preliminary Assessment will be conducted under US
Comments Date: 08211997
Comments: EPA oversight.
ID Name: CALSTARS CODE
ID Value: 201032
Alternate Name: DENNISON EASTMAN CORP.
Alternate Name: Not reported
Special Programs Code: Not reported
Special Programs Name: Not reported

CONTRA COSTA CO. SITE LIST:
Facility ID: FA0032786
Billing Status: ACTIVE, BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: HMBP: >250K-500K LBS, 0-19 EMPLOYEES
Region: CONTRA COSTA
Cupa Number: 770240

CERS TANKS:
Site ID: 35398
CERS ID: 10008883
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 35398
Site Name: HARBISONWALKER INTERNATIONAL, INC.
Violation Date: 05-09-2016
Citation: HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Description: Business Plan Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 05/27/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HMRRP
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-09-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

DENNISON EASTMAN CORP. (Continued) **S102860823**

Eval General Type: Other/Unknown
Eval Date: 05-27-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Enforcement Action:
Site ID: 35398
Site Name: HARBISONWALKER INTERNATIONAL, INC.
Site Address: 3451 COLLINS AVE
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 05-09-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HMRRP
Enf Action Source: CERS

Affiliation:
Affiliation Type Desc: Identification Signer
Entity Name: Tom Raught
Entity Title: Director Corporate EHS
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department
Entity Title: Not reported
Affiliation Address: 4585 Pacheco BlvdSuite 100
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-3200

Affiliation Type Desc: Environmental Contact
Entity Name: Tom Raught
Entity Title: Not reported
Affiliation Address: 1305 Cherrington Parkway, Suite 100
Affiliation City: Moon Township
Affiliation State: PA
Affiliation Country: Not reported
Affiliation Zip: 15108
Affiliation Phone: (412) 375-6632

Affiliation Type Desc: Legal Owner
Entity Name: HarbisoWalker International, Inc.

DENNISON EASTMAN CORP. (Continued) **S102860823**

Entity Title:	Not reported
Affiliation Address:	1305 Cherrington Pakway, Suite 100
Affiliation City:	Moon Township
Affiliation State:	PA
Affiliation Country:	United States
Affiliation Zip:	15108
Affiliation Phone:	(412) 375-6848
Affiliation Type Desc:	Operator
Entity Name:	HarbisonWalker International, Inc. Richmond DC
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 236-7415
Affiliation Type Desc:	Document Preparer
Entity Name:	Bruce Morgan
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	3451 Collins Avenue
Affiliation City:	Richmond
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94806
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	HARBISON-WALKER REFRACTORIES CO
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

H39 **STEELSCAPE INC.** **SEMS-ARCHIVE** **1015732946**
North **2995 ATLAS ROAD** **RCRA-SQG** **CAT080012354**
1/4-1/2 **RICHMOND, CA 94806**
0.350 mi.
1850 ft. **Site 1 of 2 in cluster H**

Relative:
Lower

Actual:
32 ft.

SEMS Archive:

Site ID:	902677
EPA ID:	CAT080012354
Cong District:	7
FIPS Code:	6013
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:

Region:	9
Site ID:	902677
EPA ID:	CAT080012354
Site Name:	PINOLE POINT STEEL CO.
NPL:	N
FF:	N
OU:	0
Action Code:	VS
Action Name:	ARCH SITE
SEQ:	1
Start Date:	Not reported
Finish Date:	2003-07-11 00:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf In-Hse

Region:	9
Site ID:	902677
EPA ID:	CAT080012354
Site Name:	PINOLE POINT STEEL CO.
NPL:	N
FF:	N
OU:	0
Action Code:	HR
Action Name:	HAZRANK
SEQ:	1
Start Date:	Not reported
Finish Date:	1982-12-01 00:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902677
EPA ID:	CAT080012354
Site Name:	PINOLE POINT STEEL CO.
NPL:	N
FF:	N
OU:	0
Action Code:	SI
Action Name:	SI
SEQ:	1
Start Date:	Not reported
Finish Date:	1982-12-01 00:00:00
Qual:	L
Current Action Lead:	EPA Perf

STEELSCAPE INC. (Continued) **1015732946**

Region:	9
Site ID:	902677
EPA ID:	CAT080012354
Site Name:	PINOLE POINT STEEL CO.
NPL:	N
FF:	N
OU:	0
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	1980-11-01 00:00:00
Finish Date:	1980-11-01 00:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902677
EPA ID:	CAT080012354
Site Name:	PINOLE POINT STEEL CO.
NPL:	N
FF:	N
OU:	0
Action Code:	OO
Action Name:	SITE REASS
SEQ:	1
Start Date:	2002-07-01 00:00:00
Finish Date:	2003-04-15 00:00:00
Qual:	N
Current Action Lead:	St Perf

Region:	9
Site ID:	902677
EPA ID:	CAT080012354
Site Name:	PINOLE POINT STEEL CO.
NPL:	N
FF:	N
OU:	0
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	1984-05-01 00:00:00
Finish Date:	1984-09-01 00:00:00
Qual:	L
Current Action Lead:	St Perf

RCRA-SQG:

Date form received by agency:	02/27/2004
Facility name:	STEELSCAPE INC.
Facility address:	2995 ATLAS ROAD RICHMOND, CA 94806
EPA ID:	CAT080012354
Contact:	TOM BAKER
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	510-262-4820

STEELSCAPE INC. (Continued) **1015732946**

Contact email: TOM.BAKER@STEELSCAPE.COM
EPA Region: 09
Land type: Private
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: STEELSCAPE INC.
Owner/operator address: 2995 ATLAS ROAD
RICHMOND, CA 94806
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 05/31/2002
Owner/Op end date: Not reported

Owner/operator name: STEELSCAPE INC.
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 05/31/2002
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF

STEELSCAPE INC. (Continued) **1015732946**

LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Historical Generators:
Date form received by agency: 02/27/2004
Site name: STEELSCAPE INC.
Classification: Small Quantity Generator

Date form received by agency: 07/31/2002
Site name: STEELSCAPE, INC
Classification: Not a generator, verified

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS

STEELSCAPE INC. (Continued) **1015732946**

USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 02/26/2002
Site name: MSC PINOLE POINT STEEL INC.
Classification: Large Quantity Generator

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 792
. Waste name: Liquids with pH < 2 with metals

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D006

STEELSCAPE INC. (Continued) **1015732946**

. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

Date form received by agency: 10/12/2000
Site name: MSC PINOLE POINT STEEL INC
Classification: Large Quantity Generator

Date form received by agency: 04/15/1999
Site name: MSC PINOLE POINT STEEL, INC.
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Site name: STEELSCAPE, INC
Classification: Small Quantity Generator

Date form received by agency: 02/29/1996
Site name: PINOLE POINT STEEL COMPANY
Classification: Large Quantity Generator

Date form received by agency: 02/20/1995
Site name: STEELSCAPE, INC
Classification: Large Quantity Generator

Date form received by agency: 03/28/1994
Site name: PINOLE POINT STEEL CO.
Classification: Large Quantity Generator

Corrective Action Summary:
Event date: 12/07/1982
Event: PA OR CERCLA INSPECTION

Facility Has Received Notices of Violations:
Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 09/25/1985
Date achieved compliance: 10/08/1986
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/01/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General

STEELSCAPE INC. (Continued) **1015732946**

Date violation determined: 05/22/1985
Date achieved compliance: 10/08/1986
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 05/21/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 04/22/2005
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 10/08/1986
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/25/1985
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Generators - General
Date achieved compliance: 10/08/1986
Evaluation lead agency: EPA

Evaluation date: 05/22/1985
Evaluation: GROUNDWATER MONITORING EVALUATION
Area of violation: Generators - General
Date achieved compliance: 10/08/1986
Evaluation lead agency: State

Evaluation date: 01/06/1985
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

H40 **BAY AREA INDUSTRIAL PARK** **CPS-SLIC** **S112983225**
North **2995 ATLAS ROAD** **HAZNET** **N/A**
1/4-1/2 **RICHMOND, CA 94801** **NPDES**
0.350 mi. **CERS**
1850 ft. **Site 2 of 2 in cluster H**

Relative: **Lower**
Actual: **32 ft.**

CPS-SLIC:
Region: STATE
Facility Status: **Open - Remediation**
Status Date: 05/25/2016
Global Id: T10000005830
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number: Not reported
Latitude: 38.0013161
Longitude: -122.3486404

BAY AREA INDUSTRIAL PARK (Continued) **S112983225**

Case Type:	Cleanup Program Site
Case Worker:	AJK
Local Agency:	Not reported
RB Case Number:	718658
File Location:	Regional Board
Potential Media Affected:	Other Groundwater (uses other than drinking water), Soil
Potential Contaminants of Concern:	1,1,1-Trichloroethane (TCA), Dichloroethane (DCA), Dichloroethene (DCE), Tetrachloroethylene (PCE), Chromium VI, Lead, Zinc, Diesel, Gasoline, Heating Oil / Fuel Oil
Site History:	A steel galvanizing line formerly operated in the northern building, which was constructed in 1965 by Bethlehem Steel. Steel painting operations were conducted in the southern building, which was built in 1991. Operations ceased in 2005-2006. Buildings have been demolished and cleanup is currently underway prior to redevelopment later this year (2016).

Click here to access the California GeoTracker records for this facility:

HAZNET:

envid:	S112983225
Year:	2011
GEPAID:	CAC002662437
Contact:	JOHN REKALA/JORGE CARRETERO
Telephone:	6027347710
Mailing Name:	Not reported
Mailing Address:	1497 N KEALY ST
Mailing City,St,Zip:	LEWISVILLE, TX 750572650
Gen County:	Not reported
TSD EPA ID:	CAD980675276
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	16.856
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Contra Costa

envid:	S112983225
Year:	2010
GEPAID:	CAC002656308
Contact:	JOHN REKALA/JORGE A CARRETERO
Telephone:	7027347710
Mailing Name:	Not reported
Mailing Address:	1497 N KEALY ST
Mailing City,St,Zip:	LEWISVILLE, TX 750572650
Gen County:	Not reported
TSD EPA ID:	CAD980887418
TSD County:	Not reported
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.3465
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Contra Costa

BAY AREA INDUSTRIAL PARK (Continued) **S112983225**

envid: S112983225
Year: 2010
GEPAID: CAC002656308
Contact: JOHN REKALA/JORGE A CARRETERO
Telephone: 7027347710
Mailing Name: Not reported
Mailing Address: 1497 N KEALY ST
Mailing City,St,Zip: LEWISVILLE, TX 750572650
Gen County: Not reported
TSD EPA ID: CAD981382732
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 10
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Contra Costa

NPDES:
Facility Status: Active
NPDES Number: CAS000002
Region: 2
Agency Number: 0
Regulatory Measure ID: 445955
Place ID: Not reported
Order Number: 2009-0009-DWQ
WDID: 2 07C369869
Regulatory Measure Type: Enrollee
Program Type: Construction
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 05/29/2014
Termination Date Of Regulatory Measure: Not reported
Expiration Date Of Regulatory Measure: Not reported
Discharge Address: 3140 Peacekeeper Way
Discharge Name: LDK Ventures LLC
Discharge City: McClellan
Discharge State: California
Discharge Zip: 95652
Status: Not reported
Status Date: Not reported
Operator Name: Not reported
Operator Address: Not reported
Operator City: Not reported
Operator State: Not reported
Operator Zip: Not reported

NPDES as of 03/2018:
NPDES Number: CAS000002
Status: Active
Agency Number: 0
Region: 2
Regulatory Measure ID: 445955
Order Number: 2009-0009-DWQ
Regulatory Measure Type: Enrollee
Place ID: Not reported
WDID: 2 07C369869

BAY AREA INDUSTRIAL PARK (Continued) **S112983225**

Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	05/29/2014
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	LDK Ventures LLC
Discharge Address:	3140 Peacekeeper Way
Discharge City:	McClellan
Discharge State:	California
Discharge Zip:	95652
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported

BAY AREA INDUSTRIAL PARK (Continued) **S112983225**

Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	2
Regulatory Measure ID:	445955
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	2 07C369869
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/21/2014
Processed Date:	05/29/2014
Status:	Active
Status Date:	05/29/2014
Place Size:	36.96
Place Size Unit:	Acres
Contact:	Alan Hersh
Contact Title:	Not reported
Contact Phone:	916-965-7100
Contact Phone Ext:	Not reported
Contact Email:	ahersh@mcclellanpark.com
Operator Name:	LDK Ventures LLC
Operator Address:	3140 Peacekeeper Way
Operator City:	McClellan
Operator State:	California
Operator Zip:	95652
Operator Contact:	Alan Hersh
Operator Contact Title:	Not reported
Operator Contact Phone:	916-965-7100
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	ahersh@mcclellanpark.com
Operator Type:	Private Business
Developer:	LDK Ventures LLC
Developer Address:	3140 Peacekeeper Way
Developer City:	McClellan
Developer State:	California
Developer Zip:	95652
Developer Contact:	Alan Hersh

BAY AREA INDUSTRIAL PARK (Continued) **S112983225**

Developer Contact Title:	Not reported
Constype Linear Utility Ind:	N
Emergency Phone:	916-965-7100
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	N
Constype Below Ground Ind:	N
Constype Cable Line Ind:	N
Constype Comm Line Ind:	N
Constype Commertial Ind:	N
Constype Electrical Line Ind:	N
Constype Gas Line Ind:	N
Constype Industrial Ind:	N
Constype Other Description:	Demolition
Constype Other Ind:	Y
Constype Recons Ind:	N
Constype Residential Ind:	N
Constype Transport Ind:	N
Constype Utility Description:	Not reported
Constype Utility Ind:	N
Constype Water Sewer Ind:	N
Dir Discharge Uswater Ind:	Y
Receiving Water Name:	San Pablo Bay
Certifier:	Alan Hersh
Certifier Title:	SR VP
Certification Date:	21-MAY-14
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	2 07C369869
Regulatory Measure Type:	Construction
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Active
Status Date:	05/29/2014
Operator Name:	LDK Ventures LLC
Operator Address:	3140 Peacekeeper Way
Operator City:	McClellan
Operator State:	California
Operator Zip:	95652

BAY AREA INDUSTRIAL PARK (Continued) **S112983225**

NPDES as of 03/2018:

NPDES Number:	CAS000002
Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	445955
Order Number:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 07C369869
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	05/29/2014
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	LDK Ventures LLC
Discharge Address:	3140 Peacekeeper Way
Discharge City:	McClellan
Discharge State:	California
Discharge Zip:	95652
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported

BAY AREA INDUSTRIAL PARK (Continued) **S112983225**

Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported
NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	2
Regulatory Measure ID:	445955
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	2 07C369869
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	05/21/2014
Processed Date:	05/29/2014
Status:	Active
Status Date:	05/29/2014
Place Size:	36.96
Place Size Unit:	Acres
Contact:	Alan Hersh
Contact Title:	Not reported
Contact Phone:	916-965-7100
Contact Phone Ext:	Not reported
Contact Email:	ahersh@mcclellanpark.com
Operator Name:	LDK Ventures LLC
Operator Address:	3140 Peacekeeper Way
Operator City:	McClellan
Operator State:	California
Operator Zip:	95652
Operator Contact:	Alan Hersh
Operator Contact Title:	Not reported

BAY AREA INDUSTRIAL PARK (Continued) **S112983225**

Operator Contact Phone:	916-965-7100
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	ahersh@mcclellanpark.com
Operator Type:	Private Business
Developer:	LDK Ventures LLC
Developer Address:	3140 Peacekeeper Way
Developer City:	McClellan
Developer State:	California
Developer Zip:	95652
Developer Contact:	Alan Hersh
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	N
Emergency Phone:	916-965-7100
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	N
Constype Below Ground Ind:	N
Constype Cable Line Ind:	N
Constype Comm Line Ind:	N
Constype Commertial Ind:	N
Constype Electrical Line Ind:	N
Constype Gas Line Ind:	N
Constype Industrial Ind:	N
Constype Other Description:	Demolition
Constype Other Ind:	Y
Constype Recons Ind:	N
Constype Residential Ind:	N
Constype Transport Ind:	N
Constype Utility Description:	Not reported
Constype Utility Ind:	N
Constype Water Sewer Ind:	N
Dir Discharge Uswater Ind:	Y
Receiving Water Name:	San Pablo Bay
Certifier:	Alan Hersh
Certifier Title:	SR VP
Certification Date:	21-MAY-14
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CERS TANKS:

Site ID:	234830
CERS ID:	T10000005830
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	ALYX KARPOWICZ - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title:	Not reported
Affiliation Address:	1515 Clay St., Suite 1400
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	5106222427

I41 **PINOLE PT STEEL CO** **WMUDS/SWAT** **S103438383**
North **5000 GIANT ROAD** **N/A**
1/4-1/2 **RICHMOND CA, CA 94804**
0.364 mi.
1922 ft. **Site 1 of 6 in cluster I**

Relative: **Lower**

Actual: **49 ft.**

WMUDS/SWAT:

Edit Date:	Not reported
Complexity:	Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.
Primary Waste:	SLDWST
Primary Waste Type:	Hazardous/Influent or Solid Wastes that contain toxic, corrosive, ignitable or reactive substances and must be managed according to applicable DOHS standards.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	Not reported
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Private
Agency Name:	PINOLE POINT STEEL COMPANY
Agency Department:	Not reported
Agency Address:	655 MONTGOMERY ST, SUITE 930
Agency City,St,Zip:	SAN FRANCISCO CA 94111
Agency Contact:	LAURA WAIS
Agency Telephone:	4159566161
Land Owner Name:	Not reported
Land Owner Address:	Not reported
Land Owner City,St,Zip:	Not reported
Land Owner Contact:	Not reported
Land Owner Phone:	Not reported
Region:	2
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	3499
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	True
Solid Waste Assessment Test Program:	False
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	False
Department of Defence:	False
Solid Waste Assessment Test Program:	Not reported

PINOLE PT STEEL CO (Continued) **S103438383**

Threat to Water Quality:	Moderate Threat to Water Quality. A violation could have a major adverse impact on receiving biota, can cause aesthetic impairment to a significant human population, or render unusable a potential domestic or municipal water supply. Awsthetic impairment would include nuisance from a waste treatment facility.
Sub Chapter 15:	True
Regional Board Project Officer:	AWN
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	No
Waste Discharge Requirements:	A
Self-Monitoring Rept. Frequency:	No Reporting Requirements
Waste Discharge System ID:	2 071063001
Solid Waste Information ID:	Not reported

I42 **POINT PINOLE PROPERTIES** **HIST Cal-Sites** **S100183757**
North **5000 GIANT ROAD** **N/A**
1/4-1/2 **RICHMOND, CA 94806**
0.364 mi.
1922 ft. **Site 2 of 6 in cluster I**

Relative: **Lower**

Actual: **49 ft.**

Calsite:

Region:	BERKELEY
Facility ID:	07340065
Facility Type:	RP
Type:	RESPONSIBLE PARTY
Branch:	NC
Branch Name:	NORTH COAST
File Name:	Not reported
State Senate District:	07301987
Status:	CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES IMPLEMENTED, REMEDIATION CONTINUES
Status Name:	CERTIFIED / OPERATION & MAINTENANCE
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
NPL:	Not Listed
SIC Code:	34
SIC Name:	MANU - FABRICATED METAL PRODUCTS
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Suspected
Staff Member Responsible for Site:	KHILF
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	SF
Region Water Control Board Name:	SAN FRANCISCO BAY
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	14
State Senate District Code:	07
Facility ID:	07340065
Activity:	DISC
Activity Name:	DISCOVERY
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported

POINT PINOLE PROPERTIES (Continued) **S100183757**

Revised Due Date:	Not reported
Comments Date:	09241983
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07340065
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	09301986
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07340065
Activity:	CERT
Activity Name:	CERTIFICATION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07301987
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0

POINT PINOLE PROPERTIES (Continued) **S100183757**

Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	15
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07340065
Activity:	DEED
Activity Name:	DEED RESTRICTIONS
AWP Code:	RESTR
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	01241989
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07340065
Activity:	DEED
Activity Name:	DEED RESTRICTIONS
AWP Code:	AMEND
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	06091993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0

POINT PINOLE PROPERTIES (Continued) **S100183757**

Facility ID:	07340065
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03111997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07340065
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	09302002
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07340065
Activity:	RAP
Activity Name:	REMEDIAL ACTION PLAN / RECORD OF DECISION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04081987
Est Person-Yrs to complete:	0

POINT PINOLE PROPERTIES (Continued) **S100183757**

Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07340065
Activity:	RMDL
Activity Name:	REMEDIAL ACTION (RAP REQUIRED)
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10311986
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07340065
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	08302007
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported

POINT PINOLE PROPERTIES (Continued) **S100183757**

Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Alternate Address:	5000 GIANT ROAD
Alternate City,St,Zip:	RICHMOND, CA 94806
Alternate Address:	ADJACENT TO ATLAS ROAD
Alternate City,St,Zip:	RICHMOND, CA 94806
Background Info:	The Site occupies approximately 7.5 acres in a mixed residential, recreational, and light industrial area. The area is within the Point Pinole Regional Shoreline area, bordering the San Pablo Bay. From 1965 to 1975, the Pinole Point Steel Company discharged acidic wastewater containing primarily zinc and lead into an onsite disposal pond. The waste stream came from a galvanizing process. Wastewater remained in the pond until 1985. A ground water monitoring program is in place and monitoring is currently conducted semi-annually under the oversight of the Water Board.
Comments Date:	01241989
Comments:	DEED - RESTR - A Deed Restriction was recorded February 10, 1989
Comments Date:	01241989
Comments:	that agreed to groundwater monitoring, access to the site and
Comments Date:	01241989
Comments:	the terms and conditions of the Hazardous Waste Facility
Comments Date:	01241989
Comments:	Post-Closure Permit dated October 10, 1986; the Remedial Action
Comments Date:	01241989
Comments:	Order HSA 86/87-007RA dated September 1, 1986; and San Francisco
Comments Date:	01241989
Comments:	Regional Water Quality Control Board Waste Discharge Order No.
Comments Date:	01241989
Comments:	86-40, dated June 18, 1986 including written approval of DTSC,
Comments Date:	01241989
Comments:	groundwater monitoring, operation and maintenance, and
Comments Date:	01241989
Comments:	maintaining cap integrity.
Comments Date:	03111997
Comments:	5YEAR - The Five Year Review concluded that the remedial action
Comments Date:	03111997
Comments:	selected in the RAP remained protective of the Human Health and
Comments Date:	03111997
Comments:	environment and remedial structures and monitoring programs
Comments Date:	03111997
Comments:	remain in place as recommended by SFRWQCB (RWQCB lead) and DTSC.
Comments Date:	04081987
Comments:	RAP - The 1987 Remedial Action Plan required that: (1) remaining
Comments Date:	04081987
Comments:	liquids from the pond be removed (2) a composite clay cap on the
Comments Date:	04081987
Comments:	former pond area, be constructed (3) a deed restriction
Comments Date:	04081987
Comments:	prohibiting residential development be recorded and (4) the
Comments Date:	04081987
Comments:	groundwater be monitored.
Comments Date:	06091993

POINT PINOLE PROPERTIES (Continued) **S100183757**

Comments:	DEED - AMEND - The Deed Restriction Amendment further detailed
Comments Date:	06091993
Comments:	out the specific restrictions for the site. Nineteen specific
Comments Date:	06091993
Comments:	requirements were spelled out in the amendment. These
Comments Date:	06091993
Comments:	requirements not only detailed what was required (access,
Comments Date:	06091993
Comments:	monitoring, notifications, plans, written requests), but also
Comments Date:	06091993
Comments:	detailed prohibitions for the site. Prohibitions for the site
Comments Date:	06091993
Comments:	were: no residential developments, hospitals, health clinics,
Comments Date:	06091993
Comments:	day care facilities for children or seniors, schools, drilling
Comments Date:	06091993
Comments:	for groundwater, raising food (plants or animals), subdivision
Comments Date:	06091993
Comments:	of property, and disturbing the cap.
Comments Date:	09302002
Comments:	5YEAR - The second Five Year Review was submitted in August
Comments Date:	09302002
Comments:	2002. 28 of the 34 monitoring wells were destroyed with approval
Comments Date:	09302002
Comments:	from RWQCB in June 2001. Semi-annual monitoring analyses for the
Comments Date:	09302002
Comments:	past five years show no mitigations of lead or zinc from the cap
Comments Date:	09302002
Comments:	area. The remaining six wells will continue to be monitored on a
Comments Date:	09302002
Comments:	semi-annual basis. A cap modification was approved in 2001 by
Comments Date:	09302002
Comments:	RWQCB and DTSC. Additional soil (approximately 167,000 cubic
Comments Date:	09302002
Comments:	yards) will be added to the soil cap to raise elevation, the
Comments Date:	09302002
Comments:	area then paved with asphalt and used as a parking lot for the
Comments Date:	09302002
Comments:	business park. The parking lot has been designed to increase
Comments Date:	09302002
Comments:	imperviousness and integrity of the cap and to facilitate
Comments Date:	09302002
Comments:	surface runoff. Four of the six monitoring wells have been
Comments Date:	09302002
Comments:	extended for the cap modification. The next Five Year Review is
Comments Date:	09302002
Comments:	due in August 2007.
ID Name:	CALSTARS CODE
ID Value:	201157
ID Name:	CALSTARS CODE
ID Value:	200320
ID Name:	HWIS IDENTIFICATION CODE
ID Value:	CAT080012354
ID Name:	BEP DATABASE PCODE
ID Value:	P21048
ID Name:	EPA IDENTIFICATION NUMBER
ID Value:	CAD093438661

POINT PINOLE PROPERTIES (Continued) **S100183757**

Alternate Name: PINOLE POINT STEEL COMPANY
Alternate Name: BETHLEHEM STEEL CORPORATION PINOLE PLANT
Alternate Name: POINT PINOLE PROPERTIES
Alternate Name: PINOLE POINT PROPERTIES
Alternate Name: OLD BETHLEHEM STEEL ACID WASTE POND
Alternate Name: Not reported
Special Programs Code: R3012
Special Programs Name: RCRA 3012

I43 **PINOLE POINT STEEL COMPANY** **SWEEPS UST** **S101624659**
North **5000 GIANT RD** **CA FID UST** **N/A**
1/4-1/2 **RICHMOND, CA 94804** **HWP**
0.364 mi.
1922 ft. **Site 3 of 6 in cluster I**

Relative:
Lower

Actual:
49 ft.

SWEEPS UST:
Status: Not reported
Comp Number: 19292
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 07-000-019292-000001
Tank Status: Not reported
Capacity: 3000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: DIESEL
Number Of Tanks: 2

Status: Not reported
Comp Number: 19292
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 07-000-019292-000002
Tank Status: Not reported
Capacity: 1000
Active Date: Not reported
Tank Use: CHEMICAL
STG: PRODUCT
Content: UNKNOWN
Number Of Tanks: Not reported

CA FID UST:
Facility ID: 07000599
Regulated By: UTNKI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4152238883

PINOLE POINT STEEL COMPANY (Continued) **S101624659**

Mail To: Not reported
Mailing Address: 5000 GIANT RD
Mailing Address 2: Not reported
Mailing City,St,Zip: RICHMOND 94804
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

HWP:
EPA Id: CAT080012354
Cleanup Status: CLOSED
Latitude: 37.98452
Longitude: -122.3520
Facility Type: Historical - Non-Operating
Facility Size: Not reported
Team: Not reported
Supervisor: Not reported
Site Code: Not reported
Assembly District: 15
Senate District: 09
Public Information Officer: Not reported
Public Information Officer: Not reported

Activities:
EPA Id: CAT080012354
Facility Type: Historical - Non-Operating
Unit Names: Not reported
Event Description: New Operating Permit - CALL-IN LETTER ISSUED
Actual Date: 11/08/1985

EPA Id: CAT080012354
Facility Type: Historical - Non-Operating
Unit Names: Not reported
Event Description: New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST RECEIVED
Actual Date: 12/01/1985

EPA Id: CAT080012354
Facility Type: Historical - Non-Operating
Unit Names: Not reported
Event Description: New Operating Permit - FINAL PERMIT - WITHDRAWAL REQUEST ACKNOWLEDGED
Actual Date: 08/29/1986

Closure:
EPA Id: CAT080012354
Facility Type: Historical - Non-Operating
Unit Names: STSURFIMP1
Event Description: Closure Final - RECEIVE CLOSURE CERTIFICATION
Actual Date: 04/21/1987

EPA Id: CAT080012354
Facility Type: Historical - Non-Operating
Unit Names: STSURFIMP1
Event Description: Closure Final - ISSUE CLOSURE VERIFICATION

PINOLE POINT STEEL COMPANY (Continued) **S101624659**

Actual Date: 07/18/1987

I44 **MSC PINOLE POINT STEEL INC** **CA BOND EXP. PLAN** **S100833555**
North **5000 GIANT ROAD** **EMI** **N/A**
1/4-1/2 **RICHMOND, CA 94806** **CIWQS**
0.364 mi.
1922 ft. **Site 4 of 6 in cluster I**

Relative:
Lower

Actual:
49 ft.

CA BOND EXP. PLAN:

Reponsible Party:	COST RECOVERY/OPERATION AND MAINTENANCE SITE
Project Revenue Source Company:	Not reported
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Not reported
Project Revenue Source Desc:	All initial remedial actions were paid for by the responsible parties. DHS is pursuing cost recovery for its oversight expenditures.
Site Description:	Heavy metals, including lead and zinc, were discharged from a former hot dip galvanizing operation and were concentrated in pond sludge.
Hazardous Waste Desc:	Concentrations of zinc and lead (up to 12,000 milligrams per kilogram (mg/kg) and 1,300 mg/kg, respectively) are found in the top eight feet of soil. Elevated levels of zinc have been found in monitoring wells.
Threat To Public Health & Env:	Prior to the implementation of the remedial action, contaminants detected in ground water could have migrated to and impacted San Francisco Bay.
Site Activity Status:	Pinole Point Properties has implemented the remedial action plan which called for the construction of a clay cap. A post-closure permit and remedial action order have been issued by the Department. Monitoring will continue for the onsite disposed waste material for at least 30 years. Recently elevated levels of zinc have been detected in two ground water monitoring wells. The post-closure permit issued by the Department requires the RP to perform remedial actions if such leaks occur.

EMI:

Year:	1987
County Code:	7
Air Basin:	SF
Facility ID:	466
Air District Name:	BA
SIC Code:	3547
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	8
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1990
County Code:	7
Air Basin:	SF
Facility ID:	466
Air District Name:	BA
SIC Code:	3547
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported

MSC PINOLE POINT STEEL INC (Continued) **S100833555**

Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	5
NOX - Oxides of Nitrogen Tons/Yr:	21
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

Year:	1995
County Code:	7
Air Basin:	SF
Facility ID:	466
Air District Name:	BA
SIC Code:	3547
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	6
NOX - Oxides of Nitrogen Tons/Yr:	26
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

Year:	1996
County Code:	7
Air Basin:	SF
Facility ID:	466
Air District Name:	BA
SIC Code:	3547
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	6
NOX - Oxides of Nitrogen Tons/Yr:	26
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

Year:	1997
County Code:	7
Air Basin:	SF
Facility ID:	466
Air District Name:	BA
SIC Code:	3547
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	5
NOX - Oxides of Nitrogen Tons/Yr:	18
SOX - Oxides of Sulphur Tons/Yr:	0

MSC PINOLE POINT STEEL INC (Continued) **S100833555**

Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0

Year: 1998
County Code: 7
Air Basin: SF
Facility ID: 466
Air District Name: BA
SIC Code: 3547
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 2
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 5
NOX - Oxides of Nitrogen Tons/Yr: 21
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 1
Part. Matter 10 Micrometers and Smllr Tons/Yr: 1

Year: 1999
County Code: 7
Air Basin: SF
Facility ID: 466
Air District Name: BA
SIC Code: 3547
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 2
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 6
NOX - Oxides of Nitrogen Tons/Yr: 23
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 1
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0

Year: 2000
County Code: 7
Air Basin: SF
Facility ID: 466
Air District Name: BA
SIC Code: 3547
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 2
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 6
NOX - Oxides of Nitrogen Tons/Yr: 23
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 1
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0

Year: 2001
County Code: 7
Air Basin: SF

MSC PINOLE POINT STEEL INC (Continued) **S100833555**

Facility ID:	466
Air District Name:	BA
SIC Code:	3547
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Y
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	5
NOX - Oxides of Nitrogen Tons/Yr:	19
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

CIWQS:

Agency:	Pinole Point Steel Co
Agency Address:	PO Box 4050, Richmond, CA 94804
Place/Project Type:	Industrial - Coating, Engraving, and Allied Services, NEC
SIC/NAICS:	3479
Region:	2
Program:	INDSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	2 07I003261
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	04/03/1992
Termination Date:	06/29/1998
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	37.9973
Longitude:	-122.34874

I45 **PINOLE POINT STEEL** **RESPONSE** **S103662394**
North **5000 GIANT** **ENVIROSTOR** **N/A**
1/4-1/2 **RICHMOND, CA 94804** **DEED**
0.364 mi. **LDS**
1922 ft. **Site 5 of 6 in cluster I** **ENF**
HIST CORTESE
Relative: **CERS**
Lower **CIWQS**

Actual:
49 ft.

RESPONSE:

Facility ID:	7340065
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	7.25
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 2 - San Francisco Bay
Lead Agency Description:	RWQCB 2 - San Francisco Bay
Project Manager:	Claude Jemison

PINOLE POINT STEEL (Continued) **S103662394**

Supervisor:	Mark Piros
Division Branch:	Cleanup Berkeley
Site Code:	202077
Site Mgmt. Req.:	REM, DAY, ELD, HOS, LUC, FEN, MON, EX, NOWN, NDAM, NUSE, NDEV, NSUB, SCH, FOOD, RES, REM, LUC, FEN, MON, EX, NDAM, NUSE, NDEV, HS
Assembly:	15
Senate:	09
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified O&M - Land Use Restrictions Only
Status Date:	07/30/1987
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.00035
Longitude:	-122.3385
APN:	405-030-013, 405-030-014, 405-030-019, 405-030-025, 405-030-026, 405-030-028, 405-040-007, 405-270-008
Past Use:	MANUFACTURING - METAL, WASTE WATER PONDS
Potential COC :	Lead Zinc
Confirmed COC:	Lead Zinc
Potential Description:	SOIL
Alias Name:	Not reported
Alias Type:	Not reported

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

ENVIROSTOR:

Facility ID:	71003526
Status:	Inactive - Needs Evaluation
Status Date:	Not reported
Site Code:	Not reported
Site Type:	Tiered Permit
Site Type Detailed:	Tiered Permit
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Not reported
Division Branch:	Cleanup Berkeley
Assembly:	15
Senate:	09
Special Program:	Not reported

PINOLE POINT STEEL (Continued) **S103662394**

Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.93575
Longitude: -122.3477
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAT080012354
Alias Type: EPA Identification Number
Alias Name: 71003526
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Facility ID: 80001839
Status: Refer: RWQCB
Status Date: 02/06/2013
Site Code: Not reported
Site Type: Corrective Action
Site Type Detailed: Corrective Action
Acres: 0
NPL: NO
Regulatory Agencies: RWQCB 2 - San Francisco Bay
Lead Agency: RWQCB 2 - San Francisco Bay
Program Manager: Not reported
Supervisor: Daniel Murphy
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.98452
Longitude: -122.3520
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED

PINOLE POINT STEEL (Continued) **S103662394**

Alias Name: CAT080012354
Alias Type: EPA Identification Number
Alias Name: 80001839
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 12/07/1982
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Facility ID: 7340065
Status: Certified O&M - Land Use Restrictions Only
Status Date: 07/30/1987
Site Code: 202077
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 7.25
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 2 - San Francisco Bay
Lead Agency: RWQCB 2 - San Francisco Bay
Program Manager: Claude Jemison
Supervisor: Mark Piros
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: * RCRA 3012 - Past Haz Waste Disp Inven Site
Restricted Use: YES
Site Mgmt Req: REM, DAY, ELD, HOS, LUC, FEN, MON, EX, NOWN, NDAM, NUSE, NDEV, NSUB, SCH, FOOD, RES, REM, LUC, FEN, MON, EX, NDAM, NUSE, NDEV, HS
Funding: Responsible Party
Latitude: 38.00035
Longitude: -122.3385
APN: 405-030-013, 405-030-014, 405-030-019, 405-030-025, 405-030-026, 405-030-028, 405-040-007, 405-270-008
Past Use: MANUFACTURING - METAL, WASTE WATER PONDS
Potential COC: Lead Zinc
Confirmed COC: Lead Zinc
Potential Description: SOIL
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported

PINOLE POINT STEEL (Continued) **S103662394**

Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

DEED:
Envirostor ID: 7340065
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: Envirostor Land Use Restrictions

Envirostor ID: 7340065
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: Envirostor Land Use Restrictions

LDS:

Global Id: L10006815071
Latitude: 37.99976
Longitude: -122.3384
Case Type: Land Disposal Site
Status: Open
Status Date: 12/16/1965
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Caseworker: AJK
Local Agency: DEPARTMENT OF TOXIC SUBSTANCES CONTROL
RB Case Number: 2 071063001
LOC Case Number: Not reported
File Location: Regional Board
Potential Media Affect: Other Groundwater (uses other than drinking water), Soil
EDR Link ID: L10006815071
Potential Contaminants of Concern: Other Acid or Corrosive, Lead, Other Metal
Site History: In 1965, Bethlehem Steel Corporation (BSC) constructed a 7.25-acre, unlined surface impoundment at the site of a small estuary along San Pablo Bay. The estuary was closed off from the bay by a railroad embankment located 300 feet south of the bays edge. The railroad embankment formed the north side of the surface impoundment. The impoundment (pond) was used to contain spent acid wastewater

PINOLE POINT STEEL (Continued) **S103662394**

generated from a galvanized steel stripping operation conducted at the BSC plant. The wastewater was transported to the pond via pipeline. Between 1965 and 1975, approximately 4.5 million gallons of spent acid wastewater containing heavy metals, were disposed of in the pond. The BSC plant ceased operation in 1975, and the pond has been inactive since. Pinole Point Properties purchased the facility in 1979 and accepted full legal and financial responsibility for the waste disposal pond. Waste Discharge Requirements (WDR 86-040) were issued to Bethlehem Steel on December 12, 1965 for the disposal of the spent acid wastewater (pH 2.3) from their galvanizing operation into the unlined pond. By 1994, the nature and extent of soil and groundwater contamination was delineated, and an appropriate monitoring network established. A soil cleanup level of 400 mg/kg zinc was established, and in March 1994, 277 tons of impacted soil were excavated.

Click here to access the California GeoTracker records for this facility:

ENF:

Region:	2
Facility Id:	248466
Agency Name:	Pinole Point Properties, Inc
Place Type:	Waste Management Unit
Place Subtype:	Surface Impoundment
Facility Type:	Solid Waste Class II - designated wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	3499
SIC Desc 1:	Fabricated Metal Products, NEC
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.0001
Threat To Water Quality:	2
Complexity:	B
Pretreatment:	N - POTW does not have EPA approved pretreatment prog.
Facility Waste Type:	Solid wastes, NEC
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LFNONOPER
Program Category1:	LNDISP
Program Category2:	Not reported
# Of Programs:	1
WDID:	2 071063001

PINOLE POINT STEEL (Continued) **S103662394**

Reg Measure Id:	141755
Reg Measure Type:	WDR
Region:	2
Order #:	86-040
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	02/14/2014
Effective Date:	06/18/1986
Expiration/Review Date:	12/31/2020
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	2009-12-01 00:00:00
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	19 - Non Billable by Administrative Determination
Direction/Voice:	Passive
Enforcement Id(EID):	237651
Region:	2
Order / Resolution Number:	UNKNOWN
Enforcement Action Type:	Oral Communication
Effective Date:	07/09/2001
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	07/09/2001
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 2 071063001
Description:	Winter/Spring 2001 semi-annual report was deficient wrt gradient, map and background concentration information. Verbally requested discharger to correct problems in next report due 11/15/01.
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0
Region:	2
Facility Id:	248466
Agency Name:	Pinole Point Properties, Inc
Place Type:	Waste Management Unit

PINOLE POINT STEEL (Continued) **S103662394**

Place Subtype:	Surface Impoundment
Facility Type:	Solid Waste Class II - designated wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	3499
SIC Desc 1:	Fabricated Metal Products, NEC
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.0001
Threat To Water Quality:	2
Complexity:	B
Pretreatment:	N - POTW does not have EPA approved pretreatment prog.
Facility Waste Type:	Solid wastes, NEC
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LFNONOPER
Program Category1:	LNDISP
Program Category2:	Not reported
# Of Programs:	1
WDID:	2 071063001
Reg Measure Id:	141755
Reg Measure Type:	WDR
Region:	2
Order #:	86-040
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	02/14/2014
Effective Date:	06/18/1986
Expiration/Review Date:	12/31/2020
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	2009-12-01 00:00:00
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I

PINOLE POINT STEEL (Continued) **S103662394**

Fee Code:	19 - Non Billable by Administrative Determination
Direction/Voice:	Passive
Enforcement Id(EID):	227522
Region:	2
Order / Resolution Number:	UNKNOWN
Enforcement Action Type:	13267 Letter
Effective Date:	10/29/1999
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 2 071063001
Description:	Not reported
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	2
Facility Id:	248466
Agency Name:	Pinole Point Properties, Inc
Place Type:	Waste Management Unit
Place Subtype:	Surface Impoundment
Facility Type:	Solid Waste Class II - designated wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	3499
SIC Desc 1:	Fabricated Metal Products, NEC
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.0001
Threat To Water Quality:	2
Complexity:	B
Pretreatment:	N - POTW does not have EPA approved pretreatment prog.
Facility Waste Type:	Solid wastes, NEC
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported

PINOLE POINT STEEL (Continued) **S103662394**

Facility Waste Type 4:	Not reported
Program:	LFNONOPER
Program Category1:	LNDISP
Program Category2:	Not reported
# Of Programs:	1
WDID:	2 071063001
Reg Measure Id:	141755
Reg Measure Type:	WDR
Region:	2
Order #:	86-040
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	02/14/2014
Effective Date:	06/18/1986
Expiration/Review Date:	12/31/2020
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	2009-12-01 00:00:00
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	19 - Non Billable by Administrative Determination
Direction/Voice:	Passive
Enforcement Id(EID):	225727
Region:	2
Order / Resolution Number:	UNKNOWN
Enforcement Action Type:	Oral Communication
Effective Date:	12/01/2000
Adoption/Issuance Date:	Not reported
Achieve Date:	2000-12-01
Termination Date:	12/01/2000
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 2 071063001
Description:	Not reported
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	2

PINOLE POINT STEEL (Continued) **S103662394**

Facility Id:	248466
Agency Name:	Pinole Point Properties, Inc
Place Type:	Waste Management Unit
Place Subtype:	Surface Impoundment
Facility Type:	Solid Waste Class II - designated wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	3499
SIC Desc 1:	Fabricated Metal Products, NEC
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.0001
Threat To Water Quality:	2
Complexity:	B
Pretreatment:	N - POTW does not have EPA approved pretreatment prog.
Facility Waste Type:	Solid wastes, NEC
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LFNONOPER
Program Category1:	LNDISP
Program Category2:	Not reported
# Of Programs:	1
WDID:	2 071063001
Reg Measure Id:	141755
Reg Measure Type:	WDR
Region:	2
Order #:	86-040
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	02/14/2014
Effective Date:	06/18/1986
Expiration/Review Date:	12/31/2020
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	2009-12-01 00:00:00
WDR Review - Pending:	Not reported

PINOLE POINT STEEL (Continued) **S103662394**

WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	19 - Non Billable by Administrative Determination
Direction/Voice:	Passive
Enforcement Id(EID):	223306
Region:	2
Order / Resolution Number:	85-020
Enforcement Action Type:	Clean-up and Abatement Order
Effective Date:	09/18/1985
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 2 071063001
Description:	ORDER 85-020 RESCINDED 85-015 AS IT APPLIED TO BETHLEHM
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	2
Facility Id:	248466
Agency Name:	Pinole Point Properties, Inc
Place Type:	Waste Management Unit
Place Subtype:	Surface Impoundment
Facility Type:	Solid Waste Class II - designated wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	3499
SIC Desc 1:	Fabricated Metal Products, NEC
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.0001
Threat To Water Quality:	2
Complexity:	B
Pretreatment:	N - POTW does not have EPA approved pretreatment prog.

PINOLE POINT STEEL (Continued) **S103662394**

Facility Waste Type:	Solid wastes, NEC
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LFNONOPER
Program Category1:	LNDISP
Program Category2:	Not reported
# Of Programs:	1
WDID:	2 071063001
Reg Measure Id:	141755
Reg Measure Type:	WDR
Region:	2
Order #:	86-040
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	02/14/2014
Effective Date:	06/18/1986
Expiration/Review Date:	12/31/2020
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	2009-12-01 00:00:00
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	19 - Non Billable by Administrative Determination
Direction/Voice:	Passive
Enforcement Id(EID):	222632
Region:	2
Order / Resolution Number:	90-161
Enforcement Action Type:	Clean-up and Abatement Order
Effective Date:	12/12/1990
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Active
Title:	CAO 90-161, Enforcement - 2 071063001
Description:	Cleanup and Abatement Order
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0

PINOLE POINT STEEL (Continued) **S103662394**

Total $ Paid/Completed Amount: 0

HIST CORTESE:
Region: CORTESE
Facility County Code: 7
Reg By: WBC&D
Reg Id: 2 071063001

CERS TANKS:
Site ID: 234355
CERS ID: L10006815071
CERS Description: Land Disposal Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: ALYX KARPOWICZ - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title: Not reported
Affiliation Address: 1515 Clay St., Suite 1400
Affiliation City: OAKLAND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: 5106222427

CIWQS:
Agency: Pinole Point Properties, Inc
Agency Address: 555 California Street 4355, San Francisco, CA 94104
Place/Project Type: Surface Impoundments
SIC/NAICS: 3499
Region: 2
Program: LFNONOPER
Regulatory Measure Status: Active
Regulatory Measure Type: WDR
Order Number: 86-040
WDID: 2 071063001
NPDES Number: Not reported
Adoption Date: 06/18/1986
Effective Date: 06/18/1986
Termination Date: Not reported
Expiration/Review Date: 12/31/2020
Design Flow: 0.0001
Major/Minor: Not reported
Complexity: B
TTWQ: 2
Enforcement Actions within 5 years: 0
Violations within 5 years: 0
Latitude: Not reported
Longitude: Not reported

I46 **PINOLE POINT, OLD BETHLEMEM** **Toxic Pits** **S100925083**
North **5000 GIANT ROAD** **EMI** **N/A**
1/4-1/2 **RICHMOND, CA**
0.364 mi.
1922 ft. **Site 6 of 6 in cluster I**

Relative:
Lower

Actual:
49 ft.

TOXIC PITS:

Region:	02
Task #:	82009
Owner:	PINOLE POINT PROPERTIES
1/2 Mi Limit:	N
Num. of Pits:	1
Cease Discharge Due:	01/01/89
Cease Discharge Complete:	06/15/85
Closure Due:	/ /
Closure Completed:	**06/30/92**
Status:	CLOSED

Hydro Geological Assessment Report Due: 09/30/91
Final Hydro Geological Assessment Review Completed: / /

EMI:

Year:	2002
County Code:	7
Air Basin:	SF
Facility ID:	14636
Air District Name:	BA
SIC Code:	3547
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	8
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2003
County Code:	7
Air Basin:	SF
Facility ID:	14636
Air District Name:	BA
SIC Code:	3547
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	4
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2004
County Code:	7
Air Basin:	SF
Facility ID:	14636

PINOLE POINT, OLD BETHLEMEM (Continued) **S100925083**

Air District Name:	BA
SIC Code:	3547
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.067
Reactive Organic Gases Tons/Yr:	0.9105926
Carbon Monoxide Emissions Tons/Yr:	0.889
NOX - Oxides of Nitrogen Tons/Yr:	3.757
SOX - Oxides of Sulphur Tons/Yr:	0.016
Particulate Matter Tons/Yr:	0.085
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.0845625

47
SSW
1/4-1/2
0.405 mi.
2139 ft.

LAZY J RANCH/CHEVRON PIPELINE SITE **CPS-SLIC S106235154**
3001 GIANT RD **CERS N/A**
RICHMOND/SAN PABLO, CA

Relative:
Lower

Actual:
27 ft.

CPS-SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	06/05/2009
Global Id:	SL18281702
Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number:	Not reported
Latitude:	37.978192
Longitude:	-122.353288
Case Type:	Cleanup Program Site
Case Worker:	UUU
Local Agency:	Not reported
RB Case Number:	07S0021
File Location:	Not reported
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

SLIC REG 2:

Region:	2
Facility ID:	SL18281702
Facility Status:	Not reported
Date Closed:	Not reported
Local Case #:	Not reported
How Discovered:	GOV
Leak Cause:	Not reported
Leak Source:	Not reported
Date Confirmed:	Not reported
Date Prelim Site Assmnt Workplan Submitted:	Not reported
Date Preliminary Site Assessment Began:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	Not reported

LAZY J RANCH/CHEVRON PIPELINE SITE (Continued) **S106235154**

CERS TANKS:
Site ID: 256065
CERS ID: SL18281702
CERS Description: Cleanup Program Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: Regional Water Board - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title: Not reported
Affiliation Address: 1515 CLAY ST SUITE 1400
Affiliation City: OAKLAND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

48
ENE
1/4-1/2
0.406 mi.
2144 ft.

Relative:
Lower

Actual:
40 ft.

MI-JACK PRODUCTS, INC DBA TSI **ENVIROSTOR** **S112950867**
1601 ATLAS RD **AST** **N/A**
RICHMOND, CA 94806 **CERS HAZ WASTE**
CERS TANKS
HAZNET
NPDES
CONTRA COSTA CO. SITE LIST
CERS

ENVIROSTOR:
Facility ID: 7330012
Status: Refer: RWQCB
Status Date: 07/21/1981
Site Code: Not reported
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.99647
Longitude: -122.3416
APN: 405270011
Past Use: NONE SPECIFIED
Potential COC: * UNSPECIFIED ACID SOLUTION
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

AST:
Certified Unified Program Agencies: Not reported
Owner: United Parcel Service, Inc. an Ohio Corporation
Total Gallons: Not reported
CERSID: 10156177
Facility ID: 07-000-719474
Business Name: United Parcel Service, Inc.
Phone: 510-262-2314
Fax: 510-262-2310
Mailing Address: 8400 Pardee Drive, Attn: Plant Engineering
Mailing Address City: Oakland
Mailing Address State: CA
Mailing Address Zip Code: 94621
Operator Name: United Parcel Service, Inc. an Ohio Corporation
Operator Phone: 510-453-2090
Owner Phone: 510-453-2090
Owner Mail Address: 55 Glenlake Parkway, NE
Owner State: GA
Owner Zip Code: 30328
Owner Country: United States
Property Owner Name: United Parcel Service, Inc. an Ohio Corporation
Property Owner Phone: 510-453-2090
Property Owner Mailing Address: 55 Glenlake Parkway
Property Owner City: Atlanta
Property Owner Stat : GA
Property Owner Zip Code: 30328
Property Owner Country: United States
EPAID: CAD982490120

CERS HAZ WASTE:
Site ID: 405083
CERS ID: 10156177
CERS Description: Hazardous Waste Generator

Violations:
Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: "Failure to amend the SPCC Plan within 6 months: 1. When the facility has had a change in design, construction, operation, or maintenance

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

	which affects the facility s discharge potential. AND/OR 2. To include more effective proven technology at the time of the 5-year SPCC Plan review and evaluation."
Violation Notes:	Returned to compliance on 04/14/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	03-11-2013
Citation:	HSC 6.7 Multiple Sections - California Health and Safety Code, Chapter 6.7, Section(s) Multiple Sections
Violation Description:	UST Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 03/11/2013.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	UST
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-06-2016
Citation:	HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description:	APSA Program - Training - General
Violation Notes:	Returned to compliance on 05/06/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-06-2016
Citation:	HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description:	Failure to maintain a complete copy of the SPCC Plan at the facility if the facility is normally attended at least four hours per day, or at the nearest field office if the facility is not so attended.
Violation Notes:	Returned to compliance on 04/14/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-06-2016
Citation:	HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description:	APSA Program - Release/Leaks/Spills - General
Violation Notes:	Returned to compliance on 06/27/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-06-2016

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Citation:	HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description:	APSA Program - Administration/Documentation - General
Violation Notes:	Returned to compliance on 04/14/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	05-13-2016
Citation:	HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description:	Haz Waste Generator Program - Administration/Documentation - General
Violation Notes:	Returned to compliance on 06/27/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-14-2015
Citation:	Un-Specified
Violation Description:	UST Program - Operations/Maintenance - For use of Local Ordinance only.
Violation Notes:	Returned to compliance on 04/14/2015.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	UST
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	06-24-2014
Citation:	HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description:	APSA Program - Administration/Documentation - General
Violation Notes:	Returned to compliance on 07/15/2014.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	06-02-2016
Citation:	HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description:	Hazardous Waste Generator Program - Administration/Documentation - General
Violation Notes:	Returned to compliance on 06/27/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	05-13-2016
Citation:	HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

	6.5, Section(s) Multiple Sections
Violation Description:	Haz Waste Generator Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 08/03/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	06-02-2016
Citation:	HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description:	Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 08/03/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-06-2016
Citation:	HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description:	Failure to provide the following training to all oil-handling personnel: 1. Operation and maintenance of equipment to prevent discharges. 2. Discharge procedure protocols. 3. Applicable pollution control laws, rules, and regulations. 4. General facility operations. 5. Contents of the SPCC Plan.
Violation Notes:	Returned to compliance on 08/12/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	06-18-2018
Citation:	22 CCR 15 66265.195(c) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.195(c)
Violation Description:	Failure to conduct and document inspections of hazardous waste tank systems each operating day and retain records of those inspections at the facility.
Violation Notes:	Returned to compliance on 07/12/2018. OBSERVATION: Daily inspections of the Hazardous Waste tank system have not been conducted and documented. CORRECTIVE ACTION: Submit documentation to the CUPA demonstrating that the Hazardous Waste tank system is being properly inspected and documented. Email proof of daily (operational days, if shop is open Mon-Fri then only required Mon-Fri) tank inspections within 30 days.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS

Evaluation:

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-07-2018
Violations Found:	No
Eval Type:	Routine done by local agency

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-18-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 06-24-2014
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 08-03-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 10-03-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-11-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 04-06-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 04-06-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 06-02-2016
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-15-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Date: 06-18-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 07-12-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-06-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-14-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2016
Violations Found: No
Eval Type: Routine done by local agency

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 06-02-2016
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-18-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 04-06-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 07-05-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 08-03-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-06-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Enforcement Action:
Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 03-11-2013
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-06-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-14-2015
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 05-13-2016

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-02-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-02-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-18-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-24-2014
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Enf Action Source: CERS

Coordinates:
Site ID: 405083
Facility Name: UPS - Richmond
Env Int Type Code: APSA
Program ID: 10156177
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 37.996470
Longitude: -122.341640

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department
Entity Title: Not reported
Affiliation Address: 4585 Pacheco BlvdSuite 100
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-3200

Affiliation Type Desc: Document Preparer
Entity Name: Alvin Solis
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: UST Property Owner Name
Entity Name: United Parcel Service, Inc.
Entity Title: Not reported
Affiliation Address: 55 Glenlake Parkway, NE
Affiliation City: Atlanta
Affiliation State: GA
Affiliation Country: United States
Affiliation Zip: 30328
Affiliation Phone: (510) 246-2704

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 8400 Pardee Drive, Attn: Plant Engineering
Affiliation City: Oakland
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94621
Affiliation Phone: Not reported

Affiliation Type Desc: Operator
Entity Name: United Parcel Service, Inc.
Entity Title: Not reported

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	UST Tank Operator
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Dr.
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Environmental Contact
Entity Name:	Alvin Solis
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Drive
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Identification Signer
Entity Name:	Carlos Medina
Entity Title:	District Plant Engineering Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Legal Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, NE
Affiliation City:	Atlanta
Affiliation State:	GA
Affiliation Country:	United States
Affiliation Zip:	30328
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Parent Corporation
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Affiliation Type Desc:	Property Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, NE
Affiliation City:	Atlanta
Affiliation State:	GA
Affiliation Country:	United States
Affiliation Zip:	30328
Affiliation Phone:	(510) 246-2704

Affiliation Type Desc:	UST Permit Applicant
Entity Name:	Carlos Medina
Entity Title:	District Plant Engineering Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 453-2090

Affiliation Type Desc:	UST Tank Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Dr.
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704

CERS TANKS:

Site ID:	405083
CERS ID:	10156177
CERS Description:	Aboveground Petroleum Storage

Violations:

Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-06-2016
Citation:	HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description:	"Failure to amend the SPCC Plan within 6 months: 1. When the facility has had a change in design, construction, operation, or maintenance which affects the facility s discharge potential. AND/OR 2. To include more effective proven technology at the time of the 5-year SPCC Plan review and evaluation."
Violation Notes:	Returned to compliance on 04/14/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS

Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	03-11-2013
Citation:	HSC 6.7 Multiple Sections - California Health and Safety Code, Chapter 6.7, Section(s) Multiple Sections

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Violation Description: UST Program - Operations/Maintenance - General
Violation Notes: Returned to compliance on 03/11/2013.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Training - General
Violation Notes: Returned to compliance on 05/06/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: Failure to maintain a complete copy of the SPCC Plan at the facility if the facility is normally attended at least four hours per day, or at the nearest field office if the facility is not so attended.
Violation Notes: Returned to compliance on 04/14/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Release/Leaks/Spills - General
Violation Notes: Returned to compliance on 06/27/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 04/14/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 05-13-2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Violation Description: Haz Waste Generator Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 06/27/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-14-2015
Citation: Un-Specified
Violation Description: UST Program - Operations/Maintenance - For use of Local Ordinance only.
Violation Notes: Returned to compliance on 04/14/2015.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 06-24-2014
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 07/15/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 06-02-2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 06/27/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 05-13-2016
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General
Violation Notes: Returned to compliance on 08/03/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 06-02-2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Violation Notes: Returned to compliance on 08/03/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: Failure to provide the following training to all oil-handling personnel: 1. Operation and maintenance of equipment to prevent discharges. 2. Discharge procedure protocols. 3. Applicable pollution control laws, rules, and regulations. 4. General facility operations. 5. Contents of the SPCC Plan.
Violation Notes: Returned to compliance on 08/12/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 06-18-2018
Citation: 22 CCR 15 66265.195(c) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.195(c)
Violation Description: Failure to conduct and document inspections of hazardous waste tank systems each operating day and retain records of those inspections at the facility.
Violation Notes: Returned to compliance on 07/12/2018. OBSERVATION: Daily inspections of the Hazardous Waste tank system have not been conducted and documented. CORRECTIVE ACTION: Submit documentation to the CUPA demonstrating that the Hazardous Waste tank system is being properly inspected and documented. Email proof of daily (operational days, if shop is open Mon-Fri then only required Mon-Fri) tank inspections within 30 days.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-07-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-18-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	06-24-2014
Violations Found:	Yes
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	APSA
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	08-03-2016
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	APSA
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	10-03-2014
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	UST
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-11-2013
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	UST
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-12-2014
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	04-06-2016
Violations Found:	No

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 04-06-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 06-02-2016
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-15-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-18-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 07-12-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-06-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-14-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 06-02-2016
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-18-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 04-06-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 07-05-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 08-03-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-06-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Enforcement Action:
Site ID: 405083
Site Name: UPS - Richmond

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 03-11-2013
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-06-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-14-2015
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 05-13-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-02-2016
Enf Action Type: Notice of Violation (Unified Program)

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-02-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-18-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-24-2014
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Coordinates:
Site ID: 405083
Facility Name: UPS - Richmond
Env Int Type Code: APSA
Program ID: 10156177
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 37.996470
Longitude: -122.341640

Affiliation:

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Affiliation Type Desc:	CUPA District
Entity Name:	Contra Costa County Health Services Department
Entity Title:	Not reported
Affiliation Address:	4585 Pacheco BlvdSuite 100
Affiliation City:	Martinez
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94553
Affiliation Phone:	(925) 335-3200

Affiliation Type Desc:	Document Preparer
Entity Name:	Alvin Solis
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	UST Property Owner Name
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, NE
Affiliation City:	Atlanta
Affiliation State:	GA
Affiliation Country:	United States
Affiliation Zip:	30328
Affiliation Phone:	(510) 246-2704

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Drive, Attn: Plant Engineering
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94621
Affiliation Phone:	Not reported

Affiliation Type Desc:	Operator
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 246-2704

Affiliation Type Desc:	UST Tank Operator
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Dr.
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	United States

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Environmental Contact
Entity Name:	Alvin Solis
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Drive
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Identification Signer
Entity Name:	Carlos Medina
Entity Title:	District Plant Engineering Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Legal Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, NE
Affiliation City:	Atlanta
Affiliation State:	GA
Affiliation Country:	United States
Affiliation Zip:	30328
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Parent Corporation
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Property Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, NE
Affiliation City:	Atlanta
Affiliation State:	GA
Affiliation Country:	United States
Affiliation Zip:	30328
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	UST Permit Applicant
Entity Name:	Carlos Medina
Entity Title:	District Plant Engineering Manager
Affiliation Address:	Not reported

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 453-2090
Affiliation Type Desc:	UST Tank Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Dr.
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704
Site ID:	405083
CERS ID:	10156177
CERS Description:	Underground Storage Tank

Violations:

Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-06-2016
Citation:	HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description:	"Failure to amend the SPCC Plan within 6 months: 1. When the facility has had a change in design, construction, operation, or maintenance which affects the facility s discharge potential. AND/OR 2. To include more effective proven technology at the time of the 5-year SPCC Plan review and evaluation."
Violation Notes:	Returned to compliance on 04/14/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	03-11-2013
Citation:	HSC 6.7 Multiple Sections - California Health and Safety Code, Chapter 6.7, Section(s) Multiple Sections
Violation Description:	UST Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 03/11/2013.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	UST
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-06-2016
Citation:	HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description:	APSA Program - Training - General
Violation Notes:	Returned to compliance on 05/06/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: Failure to maintain a complete copy of the SPCC Plan at the facility if the facility is normally attended at least four hours per day, or at the nearest field office if the facility is not so attended.
Violation Notes: Returned to compliance on 04/14/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Release/Leaks/Spills - General
Violation Notes: Returned to compliance on 06/27/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 04/14/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 05-13-2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Haz Waste Generator Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 06/27/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-14-2015
Citation: Un-Specified
Violation Description: UST Program - Operations/Maintenance - For use of Local Ordinance only.
Violation Notes: Returned to compliance on 04/14/2015.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	06-24-2014
Citation:	HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description:	APSA Program - Administration/Documentation - General
Violation Notes:	Returned to compliance on 07/15/2014.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS

Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	06-02-2016
Citation:	HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description:	Hazardous Waste Generator Program - Administration/Documentation - General
Violation Notes:	Returned to compliance on 06/27/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS

Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	05-13-2016
Citation:	HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description:	Haz Waste Generator Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 08/03/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS

Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	06-02-2016
Citation:	HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description:	Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 08/03/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS

Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-06-2016
Citation:	HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description:	Failure to provide the following training to all oil-handling personnel: 1. Operation and maintenance of equipment to prevent discharges. 2. Discharge procedure protocols. 3. Applicable pollution control laws, rules, and regulations. 4. General facility operations. 5. Contents of the SPCC Plan.
Violation Notes:	Returned to compliance on 08/12/2016.
Violation Division:	Contra Costa County Health Services Department

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 06-18-2018
Citation: 22 CCR 15 66265.195(c) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.195(c)
Violation Description: Failure to conduct and document inspections of hazardous waste tank systems each operating day and retain records of those inspections at the facility.
Violation Notes: Returned to compliance on 07/12/2018. OBSERVATION: Daily inspections of the Hazardous Waste tank system have not been conducted and documented. CORRECTIVE ACTION: Submit documentation to the CUPA demonstrating that the Hazardous Waste tank system is being properly inspected and documented. Email proof of daily (operational days, if shop is open Mon-Fri then only required Mon-Fri) tank inspections within 30 days.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-07-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-18-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 06-24-2014
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 08-03-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 10-03-2014
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-11-2013
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 04-06-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 04-06-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Date:	05-13-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	06-02-2016
Violations Found:	Yes
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	APSA
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-15-2017
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-18-2018
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	07-12-2018
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-12-2014
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	APSA
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-12-2014
Violations Found:	No
Eval Type:	Routine done by local agency

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-06-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-14-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 06-02-2016
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-18-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 04-06-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 07-05-2013
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 08-03-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-06-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Enforcement Action:
Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 03-11-2013
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Enf Action Date: 04-06-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-14-2015
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 05-13-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-02-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-02-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-18-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-24-2014
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Coordinates:
Site ID: 405083
Facility Name: UPS - Richmond
Env Int Type Code: APSA
Program ID: 10156177
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 37.996470
Longitude: -122.341640

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department
Entity Title: Not reported
Affiliation Address: 4585 Pacheco BlvdSuite 100
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-3200

Affiliation Type Desc: Document Preparer
Entity Name: Alvin Solis
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	UST Property Owner Name
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, NE
Affiliation City:	Atlanta
Affiliation State:	GA
Affiliation Country:	United States
Affiliation Zip:	30328
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Drive, Attn: Plant Engineering
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94621
Affiliation Phone:	Not reported
Affiliation Type Desc:	Operator
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	UST Tank Operator
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Dr.
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Environmental Contact
Entity Name:	Alvin Solis
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Drive
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Identification Signer
Entity Name:	Carlos Medina
Entity Title:	District Plant Engineering Manager

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Legal Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, NE
Affiliation City:	Atlanta
Affiliation State:	GA
Affiliation Country:	United States
Affiliation Zip:	30328
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Parent Corporation
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Property Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, NE
Affiliation City:	Atlanta
Affiliation State:	GA
Affiliation Country:	United States
Affiliation Zip:	30328
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	UST Permit Applicant
Entity Name:	Carlos Medina
Entity Title:	District Plant Engineering Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 453-2090
Affiliation Type Desc:	UST Tank Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Dr.
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

HAZNET:

envid:	S112950867
Year:	2013
GEPAID:	CAC002744830
Contact:	BILL GRANT
Telephone:	5623215373
Mailing Name:	Not reported
Mailing Address:	9937 TABOR PL
Mailing City,St,Zip:	SANTA FE SPRINGS, CA 906703300
Gen County:	Contra Costa
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	2.75
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Not reported

envid:	S112950867
Year:	2006
GEPAID:	CAC002599446
Contact:	LINUS SCHLUMPBERGER
Telephone:	5107587895
Mailing Name:	Not reported
Mailing Address:	1601 ATLAS RD
Mailing City,St,Zip:	RICHMOND, CA 940860000
Gen County:	Not reported
TSD EPA ID:	CAD028409019
TSD County:	Not reported
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	20
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Contra Costa

NPDES:

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	2 07C368401
Regulatory Measure Type:	Construction
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Terminated
Status Date:	12/05/2014
Operator Name:	United Parcel Service
Operator Address:	1601 ATLAS ROAD
Operator City:	SAN PABLO
Operator State:	California
Operator Zip:	94806

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	2
Regulatory Measure ID:	442693
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	2 07C368401
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	10/31/2014
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	11/19/2013
Processed Date:	12/05/2013
Status:	Terminated
Status Date:	12/05/2014
Place Size:	63.3
Place Size Unit:	Acres
Contact:	Crystal Lassiter
Contact Title:	Owner’s Representative
Contact Phone:	214-263-8611
Contact Phone Ext:	Not reported
Contact Email:	gdurkee@ups.com
Operator Name:	United Parcel Service
Operator Address:	1601 ATLAS ROAD
Operator City:	SAN PABLO
Operator State:	California
Operator Zip:	94806
Operator Contact:	Crystal Lassiter
Operator Contact Title:	Owner’s Representative
Operator Contact Phone:	214-263-8611
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	classiter@ups.com
Operator Type:	Private Business
Developer:	United Parcel Service
Developer Address:	1601 ATLAS ROAD
Developer City:	RICHMOND
Developer State:	California
Developer Zip:	94806
Developer Contact:	Crystal Lassiter

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Developer Contact Title:	Owner's Representative
Constype Linear Utility Ind:	N
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	N
Constype Below Ground Ind:	N
Constype Cable Line Ind:	N
Constype Comm Line Ind:	N
Constype Commertial Ind:	N
Constype Electrical Line Ind:	N
Constype Gas Line Ind:	N
Constype Industrial Ind:	N
Constype Other Description:	Paving of parking area for staging the parking of semi-trailers
Constype Other Ind:	Y
Constype Recons Ind:	N
Constype Residential Ind:	N
Constype Transport Ind:	N
Constype Utility Description:	Not reported
Constype Utility Ind:	N
Constype Water Sewer Ind:	N
Dir Discharge Uswater Ind:	N
Receiving Water Name:	San Pablo Bay
Certifier:	Crystal Lassiter
Certifier Title:	Plant Engineering Manager
Certification Date:	21-MAY-14
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0031884
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	APSA: <10K GALLONS
Region:	CONTRA COSTA
Cupa Number:	719474

Facility ID:	FA0031884
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP: >250K-500K LBS, 20+ EMPLOYEES
Region:	CONTRA COSTA
Cupa Number:	719474

Facility ID:	FA0031884
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG: 12 - <25 TONS/YEAR
Region:	CONTRA COSTA
Cupa Number:	719474

Facility ID:	FA0031884
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	UNDERGROUND STORAGE TANK SITE
Region:	CONTRA COSTA

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Cupa Number: 719474

CERS TANKS:
Site ID: 405083
CERS ID: 10156177
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: "Failure to amend the SPCC Plan within 6 months: 1. When the facility has had a change in design, construction, operation, or maintenance which affects the facility s discharge potential. AND/OR 2. To include more effective proven technology at the time of the 5-year SPCC Plan review and evaluation."
Violation Notes: Returned to compliance on 04/14/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 03-11-2013
Citation: HSC 6.7 Multiple Sections - California Health and Safety Code, Chapter 6.7, Section(s) Multiple Sections
Violation Description: UST Program - Operations/Maintenance - General
Violation Notes: Returned to compliance on 03/11/2013.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Training - General
Violation Notes: Returned to compliance on 05/06/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description: Failure to maintain a complete copy of the SPCC Plan at the facility if the facility is normally attended at least four hours per day, or at the nearest field office if the facility is not so attended.
Violation Notes: Returned to compliance on 04/14/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Release/Leaks/Spills - General
Violation Notes: Returned to compliance on 06/27/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-06-2016
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 04/14/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 05-13-2016
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description: Haz Waste Generator Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 06/27/2016.
Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 04-14-2015
Citation: Un-Specified
Violation Description: UST Program - Operations/Maintenance - For use of Local Ordinance only.
Violation Notes: Returned to compliance on 04/14/2015.
Violation Division: Contra Costa County Health Services Department
Violation Program: UST
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Violation Date: 06-24-2014
Citation: HSC 6.67 Multiple - California Health and Safety Code, Chapter 6.67, Section(s) Multiple
Violation Description: APSA Program - Administration/Documentation - General
Violation Notes: Returned to compliance on 07/15/2014.
Violation Division: Contra Costa County Health Services Department
Violation Program: APSA
Violation Source: CERS

Site ID: 405083
Site Name: UPS - Richmond

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Violation Date:	06-02-2016
Citation:	HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description:	Hazardous Waste Generator Program - Administration/Documentation - General
Violation Notes:	Returned to compliance on 06/27/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	05-13-2016
Citation:	HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections
Violation Description:	Haz Waste Generator Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 08/03/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	06-02-2016
Citation:	HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple
Violation Description:	Hazardous Waste Generator Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 08/03/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	HW
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	04-06-2016
Citation:	HSC 6.67 25270.4.5(a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5(a)
Violation Description:	Failure to provide the following training to all oil-handling personnel: 1. Operation and maintenance of equipment to prevent discharges. 2. Discharge procedure protocols. 3. Applicable pollution control laws, rules, and regulations. 4. General facility operations. 5. Contents of the SPCC Plan.
Violation Notes:	Returned to compliance on 08/12/2016.
Violation Division:	Contra Costa County Health Services Department
Violation Program:	APSA
Violation Source:	CERS
Site ID:	405083
Site Name:	UPS - Richmond
Violation Date:	06-18-2018
Citation:	22 CCR 15 66265.195(c) - California Code of Regulations, Title 22, Chapter 15, Section(s) 66265.195(c)
Violation Description:	Failure to conduct and document inspections of hazardous waste tank systems each operating day and retain records of those inspections at the facility.
Violation Notes:	Returned to compliance on 07/12/2018. OBSERVATION: Daily inspections of the Hazardous Waste tank system have not been conducted and

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

documented. CORRECTIVE ACTION: Submit documentation to the CUPA demonstrating that the Hazardous Waste tank system is being properly inspected and documented. Email proof of daily (operational days, if shop is open Mon-Fri then only required Mon-Fri) tank inspections within 30 days.

Violation Division: Contra Costa County Health Services Department
Violation Program: HW
Violation Source: CERS

Evaluation:

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-07-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 05-13-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-18-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 06-24-2014
Violations Found: Yes
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 08-03-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 10-03-2014

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-11-2013
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-12-2014
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	04-06-2016
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	04-06-2016
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-13-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	06-02-2016
Violations Found:	Yes
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-15-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 06-18-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 07-12-2018
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 03-12-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 04-06-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: APSA
Eval Source: CERS

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-14-2015
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	UST
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	05-13-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	UST
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	06-02-2016
Violations Found:	Yes
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HW
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	06-18-2018
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	APSA
Eval Source:	CERS

Eval General Type:	Compliance Evaluation Inspection
Eval Date:	03-12-2014
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	UST
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	04-06-2016
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	Contra Costa County Health Services Department
Eval Program:	HMRRP
Eval Source:	CERS

Eval General Type:	Other/Unknown
Eval Date:	07-05-2013
Violations Found:	No

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Eval General Type: Other/Unknown
Eval Date: 08-03-2016
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 11-06-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Not reported
Eval Division: Contra Costa County Health Services Department
Eval Program: UST
Eval Source: CERS

Enforcement Action:
Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 03-11-2013
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-06-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 04-14-2015

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: UST
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 05-13-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-02-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-02-2016
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW
Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-18-2018
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: HW

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Enf Action Source: CERS

Site ID: 405083
Site Name: UPS - Richmond
Site Address: 1601 ATLAS RD
Site City: RICHMOND
Site Zip: 94806
Enf Action Date: 06-24-2014
Enf Action Type: Notice of Violation (Unified Program)
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes: Not reported
Enf Action Division: Contra Costa County Health Services Department
Enf Action Program: APSA
Enf Action Source: CERS

Coordinates:
Site ID: 405083
Facility Name: UPS - Richmond
Env Int Type Code: APSA
Program ID: 10156177
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 37.996470
Longitude: -122.341640

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Contra Costa County Health Services Department
Entity Title: Not reported
Affiliation Address: 4585 Pacheco BlvdSuite 100
Affiliation City: Martinez
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 94553
Affiliation Phone: (925) 335-3200

Affiliation Type Desc: Document Preparer
Entity Name: Alvin Solis
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: UST Property Owner Name
Entity Name: United Parcel Service, Inc.
Entity Title: Not reported
Affiliation Address: 55 Glenlake Parkway, NE
Affiliation City: Atlanta
Affiliation State: GA
Affiliation Country: United States
Affiliation Zip: 30328
Affiliation Phone: (510) 246-2704

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Drive, Attn: Plant Engineering
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94621
Affiliation Phone:	Not reported

Affiliation Type Desc:	Operator
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 246-2704

Affiliation Type Desc:	UST Tank Operator
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Dr.
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704

Affiliation Type Desc:	Environmental Contact
Entity Name:	Alvin Solis
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Drive
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704

Affiliation Type Desc:	Identification Signer
Entity Name:	Carlos Medina
Entity Title:	District Plant Engineering Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Legal Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, NE
Affiliation City:	Atlanta
Affiliation State:	GA
Affiliation Country:	United States

MI-JACK PRODUCTS, INC DBA TSI (Continued) **S112950867**

Affiliation Zip:	30328
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	Parent Corporation
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Property Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	55 Glenlake Parkway, NE
Affiliation City:	Atlanta
Affiliation State:	GA
Affiliation Country:	United States
Affiliation Zip:	30328
Affiliation Phone:	(510) 246-2704
Affiliation Type Desc:	UST Permit Applicant
Entity Name:	Carlos Medina
Entity Title:	District Plant Engineering Manager
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(510) 453-2090
Affiliation Type Desc:	UST Tank Owner
Entity Name:	United Parcel Service, Inc.
Entity Title:	Not reported
Affiliation Address:	8400 Pardee Dr.
Affiliation City:	Oakland
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94621
Affiliation Phone:	(510) 246-2704

49
ENE
1/4-1/2
0.420 mi.
2215 ft.

CHEVRON HILLTOP WEST PROJECT **ENVIROSTOR** **S116165400**
ATLAS ROAD AND SAN PABLO AVENUE **N/A**
SAN PABLO, CA 94806

Relative:
Higher

Actual:
93 ft.

ENVIROSTOR:

Facility ID:	7290028
Status:	Refer: RWQCB
Status Date:	06/18/1991
Site Code:	Not reported
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported

CHEVRON HILLTOP WEST PROJECT (Continued) **S116165400**

NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Berkeley
Assembly: Not reported
Senate: Not reported
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.99109
Longitude: -122.3362
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: * HYDROCARBON SOLVENTS * OIL/WATER SEPARATION SLUDGE * TANK BOTTOM WASTES * UNSPECIFIED OIL CONTAINING WASTE * UNSPECIFIED SLUDGE WASTE * WASTE OIL & MIXED OIL Lead Polychlorinated biphenyls (PCBs
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

50
WSW
1/4-1/2
0.448 mi.
2364 ft.

PARKWAY TRANSIT VILLAGE
NORTH END OF GOODRICK AVENUE
RICHMOND, CA 94806

ENVIROSTOR **S107737014**
VCP **N/A**
DEED

Relative:
Lower

Actual:
12 ft.

ENVIROSTOR:
Facility ID: 70000184
Status: Certified O&M - Land Use Restrictions Only
Status Date: 04/12/2012
Site Code: 201638
Site Type: Voluntary Cleanup
Site Type Detailed: Voluntary Cleanup
Acres: 18.1
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Program Manager:	Claude Jemison
Supervisor:	Mark Piros
Division Branch:	Cleanup Berkeley
Assembly:	15
Senate:	09
Special Program:	Voluntary Cleanup Program
Restricted Use:	YES
Site Mgmt Req:	NONE SPECIFIED
Funding:	Responsible Party
Latitude:	37.98324
Longitude:	-122.3598
APN:	405-010-08, 405-010-19, 405-010-20, 405-010-22, 405-010-23, 405-010-24, 405-010-25, 405010001, 405010017, 405010018, 405010019, 405010020, 408-100-033, 408100008, 408100025, 408100031, 408100032, 408100033
Past Use:	AGRICULTURAL - LIVESTOCK, LDF
Potential COC:	Arsenic Chlordane Lead Toxaphene TPH-diesel Antimony and compounds
Confirmed COC:	30001-NO 30004-NO Lead 30024-NO 30058-NO 30023-NO
Potential Description:	SOIL
Alias Name:	Former Breuner Property
Alias Type:	Alternate Name
Alias Name:	405-010-08
Alias Type:	APN
Alias Name:	405-010-19
Alias Type:	APN
Alias Name:	405-010-20
Alias Type:	APN
Alias Name:	405-010-22
Alias Type:	APN
Alias Name:	405-010-23
Alias Type:	APN
Alias Name:	405-010-24
Alias Type:	APN
Alias Name:	405-010-25
Alias Type:	APN
Alias Name:	405010001
Alias Type:	APN
Alias Name:	405010017
Alias Type:	APN
Alias Name:	405010018
Alias Type:	APN
Alias Name:	405010019
Alias Type:	APN
Alias Name:	405010020
Alias Type:	APN
Alias Name:	408-100-033
Alias Type:	APN
Alias Name:	408100008
Alias Type:	APN
Alias Name:	408100025
Alias Type:	APN
Alias Name:	408100031
Alias Type:	APN
Alias Name:	408100032
Alias Type:	APN
Alias Name:	408100033
Alias Type:	APN

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Alias Name: 110033610475
Alias Type: EPA (FRS #)
Alias Name: 201638
Alias Type: Project Code (Site Code)
Alias Name: 70000184
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Litigation Support
Completed Date: 03/17/2011
Comments: Collection Activities Summary Form 1479

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Notice of Exemption
Completed Date: 05/12/2010
Comments: Not reported

Completed Area Name: Area B
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 01/12/2009
Comments: The proponent notified DTSC by email that Area B was removed from the project. Area B was removed from the project since it was acquired by the East Bay Regional Parks District.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Report
Completed Date: 08/13/2010
Comments: Memo to File makes minor modifications to Removal Action Workplan (RAW). Modifications involve changes to air monitoring requirements during implementation of the RAW.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 06/16/2011
Comments: Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: 5 Year Review Reports
Completed Date: 05/17/2017
Comments: TRC personnel conducted a Five-Year Review for Area C on behalf of the East Bay Regional Parks District. TRC completed a site reconnaissance on May 6, 2017 as part of the Five-Year Review, and observed no erosion or exposed soil at the surface of the Site. There was no evidence of any activities or conditions prohibited by the Land Use Covenant that is in place for the Site. The conclusion of the Five-Year Review Report was that the removal action selected for the Site and the Land Use Covenant remain protective of human health and the environment.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 06/03/2015
Comments: The restricted Area C of the Site is in compliance with the Land Use Covenant.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 03/23/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 03/27/2018
Comments: East Bay Regional Park District staff conducted an annual inspection of the restricted areas of the Site on February 26, 2018. The inspection was performed and a report submitted to DTSC as required by the Covenant to Restrict Use of Property, which was recorded on April 4, 2012. No visible changes to the property were observed and the property was found to be in compliance with the Covenant.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 05/12/2017
Comments: Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 04/12/2012
Comments: Certification completed and uploaded.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 04/11/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/14/2011
Comments: Annual oversight cost estimate and transmittal letter completed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Land Use Restriction Monitoring Report
Completed Date: 03/01/2013
Comments: Inspection was performed on December 10, 2012. Throughout the year of 2012, the Covenantor did not perform any soil disturbing activities on the Property. There was no violation of Environmental Restrictions. Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Completed Document Type: * Land Use Restriction Monitoring Report
Completed Date: 02/10/2014
Comments: The restricted area is in compliance with the Land Use Restrictions. No work was done at the property and no prohibited land uses were observed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Letter - Demand
Completed Date: 08/12/2010
Comments: Demand letter sent via certified mail 8/12/10

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Letter - Demand
Completed Date: 10/26/2010
Comments: Demand letter sent via certified mail 10/26/2010

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Letter - Demand
Completed Date: 12/27/2010
Comments: Final demand letter sent via certified mail 12/27/10.

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/01/2015
Comments: DTSC Final Cost Estimate Letter

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/17/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/09/2017
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 01/23/2008
Comments: Correspondence was sent to the USFWS asking for concurrance that proposed avoidance measures related to Endangered Species are adequate and that an Incidental Take Permit will not be required.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction
Completed Date: 04/04/2012
Comments: Land use covenant taken to County Clerk-Recorder by property owner repreentative and recorded on 4/4/12.

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/25/2012
Comments: Completed 10/25/2012

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/04/2013
Comments: Annual Cost Estimates and Schedule for fiscal year 2013-2014 sent on 9/4/2013

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/29/2014
Comments: Cost Estimate Letter for Fiscal year 2014-2015

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 05/31/2006
Comments: Workplan for sampling in Area B approved.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Workplan
Completed Date: 12/04/2006
Comments: Approved workplan which requires additional sampling in these areas.

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 05/17/2010
Comments: Notification about approval of final RAW sent to RP representative 5/19/2010.

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Public Notice
Completed Date: 01/21/2010
Comments: Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 01/21/2010
Comments: Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 01/23/2012
Comments: Removal action completion report aproved 1/23/12.

Completed Area Name: PROJECT WIDE

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Completed Sub Area Name: Not reported
Completed Document Type: Community Profile
Completed Date: 03/08/2008
Comments: Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 02/08/2011
Comments: Consultant has received laboratory results and is preparing report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 10/01/2008
Comments: Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 04/24/2009
Comments: Avoidance measures forwarded to CDFG

Completed Area Name: Area A
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 05/23/2006
Comments: This document notified DTSC that Area A was removed from the project.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 07/27/2007
Comments: The VCA Amendment added Area C to the agreement, added additional scope of work for a RAW for Areas B & C, and removed Area A from the agreement.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 01/12/2006
Comments: Scope of VCA is to review a risk assessment for Areas A and B.

Future Area Name: Area C
Future Sub Area Name: Not reported
Future Document Type: 5 Year Review Reports
Future Due Date: 2022
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

VCP:
Facility ID: 70000184
Site Type: Voluntary Cleanup
Site Type Detail: Voluntary Cleanup

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Site Mgmt. Req.:	NONE SPECIFIED
Acres:	18.1
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Claude Jemison
Supervisor:	Mark Piros
Division Branch:	Cleanup Berkeley
Site Code:	201638
Assembly:	15
Senate:	09
Special Programs Code:	Voluntary Cleanup Program
Status:	Certified O&M - Land Use Restrictions Only
Status Date:	04/12/2012
Restricted Use:	YES
Funding:	Responsible Party
Lat/Long:	37.98324 / -122.3598
APN:	405-010-08, 405-010-19, 405-010-20, 405-010-22, 405-010-23, 405-010-24, 405-010-25, 405010001, 405010017, 405010018, 405010019, 405010020, 408-100-033, 408100008, 408100025, 408100031, 408100032, 408100033
Past Use:	AGRICULTURAL - LIVESTOCK, LDF
Potential COC:	30001, 30004, 30013, 30023, 30024, 30058
Confirmed COC:	30001-NO,30004-NO,30013,30024-NO,30058-NO,30023-NO
Potential Description:	SOIL
Alias Name:	Former Breuner Property
Alias Type:	Alternate Name
Alias Name:	405-010-08
Alias Type:	APN
Alias Name:	405-010-19
Alias Type:	APN
Alias Name:	405-010-20
Alias Type:	APN
Alias Name:	405-010-22
Alias Type:	APN
Alias Name:	405-010-23
Alias Type:	APN
Alias Name:	405-010-24
Alias Type:	APN
Alias Name:	405-010-25
Alias Type:	APN
Alias Name:	405010001
Alias Type:	APN
Alias Name:	405010017
Alias Type:	APN
Alias Name:	405010018
Alias Type:	APN
Alias Name:	405010019
Alias Type:	APN
Alias Name:	405010020
Alias Type:	APN
Alias Name:	408-100-033
Alias Type:	APN
Alias Name:	408100008
Alias Type:	APN
Alias Name:	408100025

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Alias Type:	APN
Alias Name:	408100031
Alias Type:	APN
Alias Name:	408100032
Alias Type:	APN
Alias Name:	408100033
Alias Type:	APN
Alias Name:	110033610475
Alias Type:	EPA (FRS #)
Alias Name:	201638
Alias Type:	Project Code (Site Code)
Alias Name:	70000184
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Litigation Support
Completed Date:	03/17/2011
Comments:	Collection Activities Summary Form 1479
Completed Area Name:	Area C
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	05/12/2010
Comments:	Not reported
Completed Area Name:	Area B
Completed Sub Area Name:	Not reported
Completed Document Type:	*Correspondence - Received
Completed Date:	01/12/2009
Comments:	The proponent notified DTSC by email that Area B was removed from the project. Area B was removed from the project since it was acquired by the East Bay Regional Parks District.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Technical Report
Completed Date:	08/13/2010
Comments:	Memo to File makes minor modifications to Removal Action Workplan (RAW). Modifications involve changes to air monitoring requirements during implementation of the RAW.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report
Completed Date:	06/16/2011
Comments:	Not reported
Completed Area Name:	Area C
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	05/17/2017
Comments:	TRC personnel conducted a Five-Year Review for Area C on behalf of the East Bay Regional Parks District. TRC completed a site reconnaissance on May 6, 2017 as part of the Five-Year Review, and observed no erosion or exposed soil at the surface of the Site. There was no evidence of any activities or conditions prohibited by the

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Land Use Covenant that is in place for the Site. The conclusion of the Five-Year Review Report was that the removal action selected for the Site and the Land Use Covenant remain protective of human health and the environment.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 06/03/2015
Comments: The restricted Area C of the Site is in compliance with the Land Use Covenant.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 03/23/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 03/27/2018
Comments: East Bay Regional Park District staff conducted an annual inspection of the restricted areas of the Site on February 26, 2018. The inspection was performed and a report submitted to DTSC as required by the Covenant to Restrict Use of Property, which was recorded on April 4, 2012. No visible changes to the property were observed and the property was found to be in compliance with the Covenant.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 05/12/2017
Comments: Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 04/12/2012
Comments: Certification completed and uploaded.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 04/11/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/14/2011
Comments: Annual oversight cost estimate and transmittal letter completed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Land Use Restriction Monitoring Report
Completed Date: 03/01/2013

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Comments: Inspection was performed on December 10, 2012. Throughout the year of 2012, the Covenantor did not perform any soil disturbing activities on the Property. There was no violation of Environmental Restrictions. Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: * Land Use Restriction Monitoring Report
Completed Date: 02/10/2014
Comments: The restricted area is in compliance with the Land Use Restrictions. No work was done at the property and no prohibited land uses were observed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Letter - Demand
Completed Date: 08/12/2010
Comments: Demand letter sent via certified mail 8/12/10

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Letter - Demand
Completed Date: 10/26/2010
Comments: Demand letter sent via certified mail 10/26/2010

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Letter - Demand
Completed Date: 12/27/2010
Comments: Final demand letter sent via certified mail 12/27/10.

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/01/2015
Comments: DTSC Final Cost Estimate Letter

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/17/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/09/2017
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 01/23/2008
Comments: Correspondence was sent to the USFWS asking for concurrance that proposed avoidance measures related to Endangered Species are adequate and that an Incidental Take Permit will not be required.

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction
Completed Date: 04/04/2012
Comments: Land use covenant taken to County Clerk-Recorder by property owner repreentative and recorded on 4/4/12.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/25/2012
Comments: Completed 10/25/2012

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/04/2013
Comments: Annual Cost Estimates and Schedule for fiscal year 2013-2014 sent on 9/4/2013

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/29/2014
Comments: Cost Estimate Letter for Fiscal year 2014-2015

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 05/31/2006
Comments: Workplan for sampling in Area B approved.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Workplan
Completed Date: 12/04/2006
Comments: Approved workplan which requires additional sampling in these areas.

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 05/17/2010
Comments: Notification about approval of final RAW sent to RP representative 5/19/2010.

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Public Notice
Completed Date: 01/21/2010
Comments: Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Fact Sheets
Completed Date: 01/21/2010
Comments: Not reported

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 01/23/2012
Comments: Removal action completion report aproved 1/23/12.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Community Profile
Completed Date: 03/08/2008
Comments: Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 02/08/2011
Comments: Consultant has received laboratory results and is preparing report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 10/01/2008
Comments: Not reported

Completed Area Name: Area C
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 04/24/2009
Comments: Avoidance measures forwarded to CDFG

Completed Area Name: Area A
Completed Sub Area Name: Not reported
Completed Document Type: *Correspondence - Received
Completed Date: 05/23/2006
Comments: This document notified DTSC that Area A was removed from the project.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 07/27/2007
Comments: The VCA Amendment added Area C to the agreement, added additional scope of work for a RAW for Areas B & C, and removed Area A from the agreement.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 01/12/2006
Comments: Scope of VCA is to review a risk assessment for Areas A and B.

Future Area Name: Area C
Future Sub Area Name: Not reported
Future Document Type: 5 Year Review Reports
Future Due Date: 2022
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported

PARKWAY TRANSIT VILLAGE (Continued) **S107737014**

Schedule Due Date: Not reported
Schedule Revised Date: Not reported

DEED:
Envirostor ID: 70000184
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: VOLUNTARY CLEANUP
Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: Envirostor Land Use Restrictions

51
SE
1/2-1
0.526 mi.
2776 ft.

Relative:
Higher

Actual:
137 ft.

BERLEX LABORATORIES **S101580705**
15049 SAN PABLO AVE **N/A**
RICHMOND, CA 94806

ENVIROSTOR
LUST
SWEEPS UST
HIST UST
CA FID UST
EMI
HIST CORTESE
CONTRA COSTA CO. SITE LIST
CERS

ENVIROSTOR:
Facility ID: 7290041
Status: Refer: Other Agency
Status Date: 06/01/1991
Site Code: Not reported
Site Type: Evaluation
Site Type Detailed: Evaluation
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.98291
Longitude: -122.3386
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: * CONTAMINATED SOIL Asbestos Containing Materials (ACM * UNSPECIFIED OIL CONTAINING WASTE Arsenic Nickel
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported

BERLEX LABORATORIES (Continued) **S101580705**

Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

LUST:
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601300056
Global Id: T0601300056
Latitude: 37.982987
Longitude: -122.338647
Status: Completed - Case Closed
Status Date: 04/14/1995
Case Worker: UUU
RB Case Number: 07-0059
Local Agency: CONTRA COSTA COUNTY
File Location: Not reported
Local Case Number: 13220
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

LUST:
Global Id: T0601300056
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

Global Id: T0601300056
Contact Type: Local Agency Caseworker
Contact Name: SUE LOYD
Organization Name: CONTRA COSTA COUNTY
Address: 4333 PACHECO BLVD.
City: MARTINEZ
Email: sloyd@hsd.co.contra-costa.ca.us
Phone Number: Not reported

LUST:
Global Id: T0601300056
Action Type: Other
Date: 03/25/1987
Action: Leak Discovery

BERLEX LABORATORIES (Continued) **S101580705**

Global Id: T0601300056
Action Type: Other
Date: 03/25/1987
Action: Leak Stopped

Global Id: T0601300056
Action Type: ENFORCEMENT
Date: 04/14/1995
Action: Closure/No Further Action Letter

Global Id: T0601300056
Action Type: Other
Date: 03/25/1987
Action: Leak Reported

LUST:
Global Id: T0601300056
Status: Completed - Case Closed
Status Date: 04/14/1995

Global Id: T0601300056
Status: Open - Case Begin Date
Status Date: 03/23/1987

Global Id: T0601300056
Status: Open - Remediation
Status Date: 03/23/1987

LUST REG 2:
Region: 2
Facility Id: 07-0059
Facility Status: Case Closed
Case Number: 13220
How Discovered: Tank Closure
Leak Cause: Structure Failure
Leak Source: Tank
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: 3/23/1987
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

SWEEPS UST:
Status: Active
Comp Number: 13220
Number: 1
Board Of Equalization: 44-034402
Referral Date: 12-15-93
Action Date: 04-16-94
Created Date: 07-22-88
Owner Tank Id: Not reported
SWRCB Tank Id: 07-000-013220-000001

BERLEX LABORATORIES (Continued) **S101580705**

Tank Status: A
Capacity: 2000
Active Date: 06-29-92
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: 3

Status: Active
Comp Number: 13220
Number: 1
Board Of Equalization: 44-034402
Referral Date: 12-15-93
Action Date: 04-16-94
Created Date: 07-22-88
Owner Tank Id: 2
SWRCB Tank Id: 07-000-013220-000002
Tank Status: A
Capacity: 6000
Active Date: 06-29-92
Tank Use: M.V. FUEL
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Status: Active
Comp Number: 13220
Number: 1
Board Of Equalization: 44-034402
Referral Date: 12-15-93
Action Date: 04-16-94
Created Date: 07-22-88
Owner Tank Id: 13220
SWRCB Tank Id: 07-000-013220-000004
Tank Status: A
Capacity: 2000
Active Date: 01-03-94
Tank Use: PETROLEUM
STG: P
Content: DIESEL
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 13220
Number: Not reported
Board Of Equalization: 44-034402
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 07-000-013220-000003
Tank Status: Not reported
Capacity: 2000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: DIESEL

BERLEX LABORATORIES (Continued) **S101580705**

Number Of Tanks: 1

HIST UST:

File Number:	00022899
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00022899.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

CA FID UST:

Facility ID:	07000011
Regulated By:	UTNKA
Regulated ID:	CAD000819
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	5102316190
Mail To:	Not reported
Mailing Address:	213 E GRAND AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	RICHMOND 94806
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

EMI:

Year:	1995
County Code:	7
Air Basin:	SF
Facility ID:	7943
Air District Name:	BA
SIC Code:	8731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported

BERLEX LABORATORIES (Continued) **S101580705**

Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1996
County Code:	7
Air Basin:	SF
Facility ID:	7943
Air District Name:	BA
SIC Code:	8731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

Year:	1997
County Code:	7
Air Basin:	SF
Facility ID:	7943
Air District Name:	BA
SIC Code:	8731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1998
County Code:	7
Air Basin:	SF
Facility ID:	7943
Air District Name:	BA
SIC Code:	8731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0

BERLEX LABORATORIES (Continued) **S101580705**

Part. Matter 10 Micrometers and Smllr Tons/Yr:0

Year:	1999
County Code:	7
Air Basin:	SF
Facility ID:	7943
Air District Name:	BA
SIC Code:	8731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2000
County Code:	7
Air Basin:	SF
Facility ID:	7943
Air District Name:	BA
SIC Code:	8731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

HIST CORTESE:

Region:	CORTESE
Facility County Code:	7
Reg By:	LTNKA
Reg Id:	07-0059

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0031187
Billing Status:	INACTIVE, NON-BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG: LESS THAN 5 TONS/YEAR
Region:	CONTRA COSTA
Cupa Number:	707679

Facility ID:	FA0030171
Billing Status:	ACTIVE, BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP: 1K-10K LBS, 0-19 EMPLOYEES
Region:	CONTRA COSTA
Cupa Number:	773502

BERLEX LABORATORIES (Continued) **S101580705**

CERS TANKS:
- Site ID: 249541
- CERS ID: T0601300056
- CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
- Affiliation Type Desc: Local Agency Caseworker
- Entity Name: SUE LOYD - CONTRA COSTA COUNTY
- Entity Title: Not reported
- Affiliation Address: 4333 PACHECO BLVD.
- Affiliation City: MARTINEZ
- Affiliation State: CA
- Affiliation Country: Not reported
- Affiliation Zip: Not reported
- Affiliation Phone: Not reported

- Affiliation Type Desc: Regional Board Caseworker
- Entity Name: Regional Water Board - SAN FRANCISCO BAY RWQCB (REGION 2)
- Entity Title: Not reported
- Affiliation Address: 1515 CLAY ST SUITE 1400
- Affiliation City: OAKLAND
- Affiliation State: CA
- Affiliation Country: Not reported
- Affiliation Zip: Not reported
- Affiliation Phone: Not reported

52
NE
1/2-1
0.572 mi.
3021 ft.

MONTALVIN MANOR
CHRISTINE DR.
SAN PABLO, CA 94806

ENVIROSTOR **S116165408**
N/A

Relative:
Lower

Actual:
66 ft.

ENVIROSTOR:
- Facility ID: 7330017
- Status: No Further Action
- Status Date: 03/01/1982
- Site Code: Not reported
- Site Type: Historical
- Site Type Detailed: * Historical
- Acres: Not reported
- NPL: NO
- Regulatory Agencies: NONE SPECIFIED
- Lead Agency: NONE SPECIFIED
- Program Manager: Not reported
- Supervisor: Not reported
- Division Branch: Cleanup Berkeley
- Assembly: 15
- Senate: 09
- Special Program: Not reported
- Restricted Use: NO
- Site Mgmt Req: NONE SPECIFIED
- Funding: Not reported
- Latitude: 37.99583
- Longitude: -122.3354
- APN: NONE SPECIFIED
- Past Use: NONE SPECIFIED
- Potential COC: NONE SPECIFIED

MONTALVIN MANOR (Continued) **S116165408**

Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

53
East
1/2-1
0.614 mi.
3244 ft.

CA AUTISM FOUND., A BETTER CHANCE DAY CA **ENVIROSTOR** **S118757490**
4075 LAKESIDE DR **N/A**
RICHMOND, CA 94806

Relative:
Higher

Actual:
169 ft.

ENVIROSTOR:
Facility ID: 7830004
Status: No Action Required
Status Date: 03/03/1995
Site Code: 200620
Site Type: Calmortgage
Site Type Detailed: Calmortgage
Acres: 0
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Sandra Karinen
Supervisor: William Beckman
Division Branch: Cleanup Sacramento
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: CalMortgage
Latitude: 37.98791
Longitude: -122.3332
APN: NONE SPECIFIED
Past Use: NONE
Potential COC: NONE SPECIFIED No Contaminants found
Confirmed COC: No Contaminants found
Potential Description: NMA
Alias Name: Not reported
Alias Type: Not reported

CA AUTISM FOUND., A BETTER CHANCE DAY CA (Continued) **S118757490**

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

J54 **AMERICAN STANDARD PRODUCTS: OU-III/LJR** **RESPONSE** **S103650804**
SSW **3002 GIANT ROAD** **ENVIROSTOR** **N/A**
1/2-1 **SAN PABLO, CA 94806** **DEED**
0.642 mi. **HIST CORTESE**
3391 ft. **Site 1 of 2 in cluster J** **CONTRA COSTA CO. SITE LIST**

Relative:
Lower

Actual:
28 ft.

RESPONSE:

Facility ID:	7320035
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	34.5
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Not reported
Supervisor:	Daniel Murphy
Division Branch:	Cleanup Berkeley
Site Code:	200007
Site Mgmt. Req.:	REM, ASP, DAY, ELD, HOS, LUC, MON, EX, GW, OIL, NDAM, NSUB, HS, SCH, FOOD, COV, RES
Assembly:	15
Senate:	09
Special Program Status:	Not reported
Status:	Certified O&M - Land Use Restrictions Only
Status Date:	03/15/2013
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	37.97787
Longitude:	-122.3557
APN:	408-060-007, 408060015
Past Use:	ILLEGAL DUMPING, MANUFACTURING - CERAMICS
Potential COC :	Lead Zinc
Confirmed COC:	Lead Zinc
Potential Description:	SOIL
Alias Name:	Not reported
Alias Type:	Not reported

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported

AMERICAN STANDARD PRODUCTS: OU-III/LJR (Continued) **S103650804**

Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Facility ID: 7320036
Site Type: State Response
Site Type Detail: State Response or NPL
Acres: 2
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Megan Indermill
Supervisor: Daniel Murphy
Division Branch: Cleanup Berkeley
Site Code: 200007
Site Mgmt. Req.: REM, ASP, DAY, ELD, HOS, LUC, MON, EX, GW, OIL, NSUB, FOOD, RES
Assembly: 15
Senate: 09
Special Program Status: Not reported
Status: Certified O&M - Land Use Restrictions Only
Status Date: 03/15/2013
Restricted Use: YES
Funding: Responsible Party
Latitude: 37.97752
Longitude: -122.3526
APN: 413-160-007-6
Past Use: MANUFACTURING - CERAMICS
Potential COC : Lead Zinc
Confirmed COC: Lead Zinc
Potential Description: SOIL
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

AMERICAN STANDARD PRODUCTS: OU-III/LJR (Continued) **S103650804**

Facility ID:	7320037
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	9
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Not reported
Supervisor:	Daniel Murphy
Division Branch:	Cleanup Berkeley
Site Code:	200007
Site Mgmt. Req.:	REM, ASP, DAY, ELD, HOS, LUC, MON, EX, GW, OIL, FOOD, RES
Assembly:	15
Senate:	09
Special Program Status:	Not reported
Status:	Certified O&M - Land Use Restrictions Only
Status Date:	06/13/1997
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	37.97578
Longitude:	-122.3530
APN:	413-160-008, 413160008
Past Use:	MANUFACTURING - CERAMICS
Potential COC :	Lead TPH-diesel TPH-MOTOR OIL Zinc
Confirmed COC:	TPH-diesel Lead TPH-MOTOR OIL Zinc
Potential Description:	SOIL
Alias Name:	Not reported
Alias Type:	Not reported

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

ENVIROSTOR:

Facility ID:	7320037
Status:	Certified O&M - Land Use Restrictions Only
Status Date:	06/13/1997
Site Code:	200007
Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	9
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP

AMERICAN STANDARD PRODUCTS: OU-III/LJR (Continued) **S103650804**

Program Manager: Not reported
Supervisor: Daniel Murphy
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: YES
Site Mgmt Req: REM, ASP, DAY, ELD, HOS, LUC, MON, EX, GW, OIL, FOOD, RES
Funding: Responsible Party
Latitude: 37.97578
Longitude: -122.3530
APN: 413-160-008, 413160008
Past Use: MANUFACTURING - CERAMICS
Potential COC: Lead TPH-diesel TPH-MOTOR OIL Zinc
Confirmed COC: TPH-diesel Lead TPH-MOTOR OIL Zinc
Potential Description: SOIL
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Facility ID: 7320035
Status: Certified O&M - Land Use Restrictions Only
Status Date: 03/15/2013
Site Code: 200007
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 34.5
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Daniel Murphy
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: YES
Site Mgmt Req: REM, ASP, DAY, ELD, HOS, LUC, MON, EX, GW, OIL, NDAM, NSUB, HS, SCH, FOOD, COV, RES
Funding: Responsible Party
Latitude: 37.97787
Longitude: -122.3557

AMERICAN STANDARD PRODUCTS: OU-III/LJR (Continued) **S103650804**

APN: 408-060-007, 408060015
Past Use: ILLEGAL DUMPING, MANUFACTURING - CERAMICS
Potential COC: Lead Zinc
Confirmed COC: Lead Zinc
Potential Description: SOIL
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Facility ID: 7320036
Status: Certified O&M - Land Use Restrictions Only
Status Date: 03/15/2013
Site Code: 200007
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 2
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Megan Indermill
Supervisor: Daniel Murphy
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: YES
Site Mgmt Req: REM, ASP, DAY, ELD, HOS, LUC, MON, EX, GW, OIL, NSUB, FOOD, RES
Funding: Responsible Party
Latitude: 37.97752
Longitude: -122.3526
APN: 413-160-007-6
Past Use: MANUFACTURING - CERAMICS
Potential COC: Lead Zinc
Confirmed COC: Lead Zinc
Potential Description: SOIL
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported

AMERICAN STANDARD PRODUCTS: OU-III/LJR (Continued) **S103650804**

Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

DEED:
Envirostor ID: 7320036
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: Envirostor Land Use Restrictions

Envirostor ID: 7320037
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: Envirostor Land Use Restrictions

Envirostor ID: 7320035
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: Envirostor Land Use Restrictions

HIST CORTESE:
Region: CORTESE
Facility County Code: 7
Reg By: CALSI
Reg Id: 07320037

Region: CORTESE
Facility County Code: 7
Reg By: CALSI
Reg Id: 07320035

Region: CORTESE

AMERICAN STANDARD PRODUCTS: OU-III/LJR (Continued) **S103650804**

Facility County Code: 7
Reg By: CALSI
Reg Id: 07320036

CONTRA COSTA CO. SITE LIST:
Facility ID: FA0033094
Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: UNDERGROUND STORAGE TANK SITE
Region: CONTRA COSTA
Cupa Number: 770575

J55 **AMERICAN STANDARD PRODUCTS** **HIST Cal-Sites** **S100833256**
SSW **3002 GIANT ROAD** **CA BOND EXP. PLAN** **N/A**
1/2-1 **SAN PABLO, CA 94806**
0.642 mi.
3391 ft. **Site 2 of 2 in cluster J**

Relative: **Lower**
Actual: **28 ft.**

Calsite:
Region: BERKELEY
Facility ID: 07320035
Facility Type: RP
Type: RESPONSIBLE PARTY
Branch: NC
Branch Name: NORTH COAST
File Name: Not reported
State Senate District: 12061996
Status: CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES IMPLEMENTED, REMEDIATION CONTINUES
Status Name: CERTIFIED / OPERATION & MAINTENANCE
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
NPL: Not Listed
SIC Code: 32
SIC Name: MANU - STONE, CLAY & GLASS PRODUCTS
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: RSUNGA
Supervisor Responsible for Site: Not reported
Region Water Control Board: SF
Region Water Control Board Name: SAN FRANCISCO BAY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 14
State Senate District Code: 07
Facility ID: 07320035
Activity: PPP
Activity Name: PUBLIC PARTICIPATION PLAN
AWP Code: Not reported
Proposed Budget: 0
AWP Completion Date: Not reported
Revised Due Date: Not reported
Comments Date: 04301986

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	SS
Activity Name:	SITE SCREENING
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03251987
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07301989
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	COST
Activity Name:	COST RECOVERY
AWP Code:	SETT
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03041993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	RIFS
Activity Name:	REMEDIAL INVESTIGATION / FEASIBILITY STUDY
AWP Code:	LJR
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	05101993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	COST

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Activity Name:	COST RECOVERY
AWP Code:	SETTL
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10291993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	CEQA
Activity Name:	CEQA INCLUDING NEGATIVE DECS
AWP Code:	NEGD
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	06231994
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	RAP
Activity Name:	REMEDIAL ACTION PLAN / RECORD OF DECISION
AWP Code:	LJR
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	06291994
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	DES
Activity Name:	DESIGN
AWP Code:	LJR
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	12281994
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	RMDL
Activity Name:	REMEDIAL ACTION (RAP REQUIRED)
AWP Code:	LJR
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10241996
Est Person-Yrs to complete:	0
Estimated Size:	M
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	X
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	N
Activity Comments:	27,000 CUBIC YARDS OF SOILS WERE CONSOLIDATED UNDER A 5 ACRE CAP.

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	CERT
Activity Name:	CERTIFICATION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	12061996
Est Person-Yrs to complete:	0
Estimated Size:	M
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	35
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	OM
Activity Name:	OPERATION & MAINTENANCE
AWP Code:	PLAN
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10241996
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	OM
Proposed Budget:	0

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	05131997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	08292001
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	DEED
Activity Name:	DEED RESTRICTIONS
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	05311996
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320035
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	08302006
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Alternate Address:	3002 GIANT ROAD
Alternate City,St,Zip:	SAN PABLO, CA 94806
Background Info:	American Standard operated a vitrified porcelain manufacturing facility from 1913 to 1967. The American Standard Products Site consists of a 10.5-acre manufacturing facility (FMF); a 2-acre former waste disposal area and the adjacent banks of Rheem Creek (collectively referred to as the FWDA); and a 34.5-acre adjacent property known as the Lazy J Ranch (LJR). The Site was divided into three Operable Units (OU): OU-I = FWDA; OU-II = FMF; and OU-III = LJR. Rheem Creek separates FMF and FWDA; Giant Highway separates FWDA and FMF from LJR.
Comments Date:	05101993
Comments:	Completed RIFS. Metals were used in the glazing pigmentation
Comments Date:	05101993
Comments:	process. Wastewater containing glaze and other process wastes
Comments Date:	05101993
Comments:	were disposed in settling ponds at the FWDA. Off-spec and
Comments Date:	05101993
Comments:	broken products were also disposed at the FWDA. It was
Comments Date:	05101993
Comments:	suspected that materials from FMF and/or FWDA were used to fill
Comments Date:	05101993
Comments:	the former channels of Rheem Creek and low lying areas at LJR.

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Comments Date:	05101993
Comments:	Lead as high as 17,000 parts per million (ppm) and zinc as high
Comments Date:	05101993
Comments:	as 6,900 ppm were detected in fill material. Petroleum
Comments Date:	05101993
Comments:	contamination was discovered at the southeast portion of LJR
Comments Date:	05101993
Comments:	which was associated with the petroleum pipelines along Giant
Comments Date:	05101993
Comments:	Highway. The petroleum contaminated portion of the LJR was
Comments Date:	05101993
Comments:	referred to the San Francisco Bay Regional Water Quality Control
Comments Date:	05101993
Comments:	Board for oversight in February 1992.
Comments Date:	05131997
Comments:	Signed O&M Agreement to ensure implementation of O&M Plan.
Comments Date:	05311996
Comments:	Recorded Deed Restriction for the capped area restricting capped
Comments Date:	05311996
Comments:	area to commercial or industrial uses.
Comments Date:	06291994
Comments:	Approved RAP requiring capping of contamination.
Comments Date:	08292001
Comments:	Completed Five-Year Review.
Comments Date:	10241996
Comments:	Completed RA. Approximately 36,300 cubic yards of contaminated
Comments Date:	10241996
Comments:	soils were capped on the 5-acre portion; the remaining 29.5
Comments Date:	10241996
Comments:	acres were remediated to residential standards. Approved the
Comments Date:	10241996
Comments:	Operation and Maintenance Plan requiring annual cap inspection
Comments Date:	10241996
Comments:	and groundwater monitoring.
Comments Date:	12061996
Comments:	Certified Site.
Comments Date:	12281994
Comments:	Approved Design.
ID Name:	BEP DATABASE PCODE
ID Value:	P22111
ID Name:	EPA IDENTIFICATION NUMBER
ID Value:	CAD981406176
ID Name:	CALSTARS CODE
ID Value:	200007
Alternate Name:	AMERICAN STANDARD PRODUCTS
Alternate Name:	AMERICAN STANDARD PRODUCTS: OU-III
Alternate Name:	LAZY J RANCH
Alternate Name:	AMERICAN STANDARD PRODUCTS: OU-III/LJR
Alternate Name:	Not reported
Special Programs Code:	Not reported
Special Programs Name:	Not reported

Region:	BERKELEY
Facility ID:	07320036
Facility Type:	RP
Type:	RESPONSIBLE PARTY
Branch:	NC

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Branch Name:	NORTH COAST
File Name:	AMERICAN STANDARD PRODUCTS OU-I:FWDA
State Senate District:	11171993
Status:	CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES IMPLEMENTED, REMEDIATION CONTINUES
Status Name:	CERTIFIED / OPERATION & MAINTENANCE
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
NPL:	Not Listed
SIC Code:	32
SIC Name:	MANU - STONE, CLAY & GLASS PRODUCTS
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
Staff Member Responsible for Site:	RSUNGA
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	SF
Region Water Control Board Name:	SAN FRANCISCO BAY
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	14
State Senate District Code:	09
Facility ID:	07320036
Activity:	PPP
Activity Name:	PUBLIC PARTICIPATION PLAN
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04301986
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	SS
Activity Name:	SITE SCREENING
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03251987

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07301989
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	RAP
Activity Name:	REMEDIAL ACTION PLAN / RECORD OF DECISION
AWP Code:	FWDA
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	09061991
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	CEQA
Activity Name:	CEQA INCLUDING NEGATIVE DECS
AWP Code:	NEGD
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	09201991
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	DES
Activity Name:	DESIGN
AWP Code:	FWDA
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	02211992
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	DEED

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Activity Name:	DEED RESTRICTIONS
AWP Code:	FWDA
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	05041992
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	COST
Activity Name:	COST RECOVERY
AWP Code:	SETT
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03041993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	FRA
Activity Name:	FINAL REMEDIAL ACTION
AWP Code:	FWDA
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07301993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	COST
Activity Name:	COST RECOVERY
AWP Code:	SETTL
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10291993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	CERT
Activity Name:	CERTIFICATION
AWP Code:	FWDA
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	11171993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	22000
Action Included Capping:	X
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	N
Activity Comments:	TREE AND BRUSH WORK; GRADING; INSTALLATION OF SURFACE WATEER

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

	DRAINAGESYSTEM; SOIL STABILIZATION USING LIME; AND INSTALLATION OF A FOUR-LAYER CAP.
For Commercial Reuse:	2
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	OM
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	05131997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10131998
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	12052003
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320036
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	10312008
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Alternate Address:	3002 GIANT ROAD
Alternate City,St,Zip:	SAN PABLO, CA 94806
Background Info:	American Standard operated a vitrified porcelain manufacturing facility from 1913 to 1967. The site consisted of a 10.5 acre manufacturing facility (FMF); a 2 acre former waste disposal area and the adjacent banks of Rheem Creek (referred to as the FWDA); and a 34.5 acre adjacent property known as the Lazy J Ranch (LJR). The site was divided into three Operable Units (OU): OU-I = FWDA: OU-II = FMF; and OU-III = LJR. Rheem Creek separates FMF and FWDA; Giant Road separates FWDA and FMF from LJR. Metals were used in the glazing pigmentation process. Wastewater containing glaze and other process wastes were

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

	disposed in settling ponds at the FWDA adjacent to FMF.
Comments Date:	03251987
Comments:	Completed Site Screening.
Comments Date:	05041992
Comments:	Recorded Deed Restriction limiting land use to commercial and
Comments Date:	05041992
Comments:	industrial.
Comments Date:	05131997
Comments:	Signed O&M Order requiring O&M Plan implementation.
Comments Date:	09061991
Comments:	Approved RAP. Lead was detected at concentrations as high as
Comments Date:	09061991
Comments:	26,000 pat per million (ppm) in the fill materials within FWDA.
Comments Date:	09061991
Comments:	The contamination at FWDA does not impact FMF and LFR. FWDA
Comments Date:	09061991
Comments:	remediation consisted of tree and brush removal, grading,
Comments Date:	09061991
Comments:	surface water drainage system installation, soil lime
Comments Date:	09061991
Comments:	stabilization, and a four layer cap consisting of: a 0.25 inch
Comments Date:	09061991
Comments:	layer of Claymax (flexible impermeable bentonite layer which
Comments Date:	09061991
Comments:	seals the stabilized soils); a 3 inch layer of sand; a 6 inch
Comments Date:	09061991
Comments:	layer of compacted aggregate base; and a 4 inch final asphalt
Comments Date:	09061991
Comments:	cap. The creek remediation consisted of brush removal, grading,
Comments Date:	09061991
Comments:	and a final reinforced concrete lining.
Comments Date:	10131998
Comments:	Completed Five-Year Review.
Comments Date:	10241996
Comments:	Approved O&M Plan requiring annual cap inspection and
Comments Date:	10241996
Comments:	groundwater monitoring.
Comments Date:	11171993
Comments:	Certified Site.
Comments Date:	12052003
Comments:	Completed Five-Year Review.
ID Name:	EPA IDENTIFICATION NUMBER
ID Value:	CAD981406176
ID Name:	BEP DATABASE PCODE
ID Value:	P22111
ID Name:	CALSTARS CODE
ID Value:	200007
Alternate Name:	AMERICAN STANDARD PRODUCTS
Alternate Name:	AMERICAN STANDARD PRODUCTS OU-I
Alternate Name:	AMERICAN STANDARD PRODUCTS OU-I:FWDA
Alternate Name:	AMERICAN STANDARD PRODUCTS: OU-I
Alternate Name:	AMERICAN STANDARD PRODUCTS: OU-I/FWDA
Alternate Name:	Not reported
Special Programs Code:	Not reported
Special Programs Name:	Not reported
Region:	BERKELEY

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Facility ID:	07320037
Facility Type:	RP
Type:	RESPONSIBLE PARTY
Branch:	NC
Branch Name:	NORTH COAST
File Name:	AMERICAN STANDARD PRODUCTS: OU-II
State Senate District:	06131997
Status:	CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES IMPLEMENTED, REMEDIATION CONTINUES
Status Name:	CERTIFIED / OPERATION & MAINTENANCE
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
NPL:	Not Listed
SIC Code:	32
SIC Name:	MANU - STONE, CLAY & GLASS PRODUCTS
Access:	Controlled
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
Staff Member Responsible for Site:	RSUNGA
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	SF
Region Water Control Board Name:	SAN FRANCISCO BAY
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	14
State Senate District Code:	09
Facility ID:	07320037
Activity:	PPP
Activity Name:	PUBLIC PARTICIPATION PLAN
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04301986
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	SS
Activity Name:	SITE SCREENING
AWP Code:	Not reported

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03251987
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07301989
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	COST
Activity Name:	COST RECOVERY
AWP Code:	SETT
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03041993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	COST
Activity Name:	COST RECOVERY
AWP Code:	SETTL
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10291993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	RAW
Activity Name:	REMOVAL ACTION WORKPLAN
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	09211995
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	RA
Activity Name:	REMOVAL ACTION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	02181997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	1650
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	X
Action Included Fencing:	Not reported
Removal Action Certification:	N
Activity Comments:	4 UNDERGROUND TANKS REMOVED AND 8 WELLS DECOMMISSIONED. IN ADDITIONTO THE 1650 CUBIC YARDS OF SOIL AND 32,905 WATER BEING REMOVED.
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	CERT
Activity Name:	CERTIFICATION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	06031997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	9
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	OM
Activity Name:	OPERATION & MAINTENANCE
AWP Code:	ORDER
Proposed Budget:	0
AWP Completion Date:	Not reported

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Revised Due Date:	Not reported
Comments Date:	05131997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	07292002
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	DEED
Activity Name:	DEED RESTRICTIONS
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	05231997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	OM
Activity Name:	OPERATION & MAINTENANCE
AWP Code:	PLAN
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04251997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07320037
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	11302007
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

Alternate Address:	3002 GIANT ROAD
Alternate City,St,Zip:	SAN PABLO, CA 94806
Background Info:	American Standard operated a vitrified porcelain manufacturing facility from 1913 to 1976. The American Standard Products Site consists of a 10.5-acre former porcelain products manufacturing facility (FMF); a 2-acre former waste disposal area and the adjacent banks of Rheem Creek (collectively referred to as the FWDA); and a 34.5-acre adjacent property known as the Lazy J Ranch (LJR). The site was divided into three Operable Units (OU): OU-I = FWDA; OU-II = FMF; OU-III = LJR. FWDA and FMF are located within San Pablo city limits; LJR is located within Richmond City limits. Rheem Creek separates FMF and FWDA; Giant Road separates FWDA and FMF from LJR Metals were used in for glaze pigmentation on finished products. Wastewater containing glaze and process waste were disposed in settling ponds at the FWDA adjacent to FMF. Off-spec and broken products were also disposed at the FWDA.
Comments Date:	02181997
Comments:	Completed RA. Soils surrounding the tanks with petroleum
Comments Date:	02181997
Comments:	hydrocarbons above 500 ppm were removed to the extent possible.
Comments Date:	02181997
Comments:	Deed restriction was placed for a portion of the FMF with
Comments Date:	02181997
Comments:	petroleum hydrocarbons above 500 ppm and with lead and zinc
Comments Date:	02181997
Comments:	contamination. This area is covered with buildings and pavement.
Comments Date:	03251987
Comments:	Completed Site Screening. Petroleum hydrocarbons were detected
Comments Date:	03251987
Comments:	in soil and groundwater up to 20,000 parts per million (ppm) as
Comments Date:	03251987
Comments:	oil and grease and 120 ppm as diesel. Five underground tanks
Comments Date:	03251987
Comments:	were discovered during the investigations. These tanks were the
Comments Date:	03251987
Comments:	source of the petroleum hydrocarbon contamination at the FMF.
Comments Date:	03251987
Comments:	Lead and zinc were also detected at FMF as high as 11,000 and
Comments Date:	03251987
Comments:	5,400 ppm, respectively.
Comments Date:	04251997
Comments:	Approved the O&M Plan requiring annual cap inspection and
Comments Date:	04251997
Comments:	groundwater monitoring.
Comments Date:	05131997
Comments:	Signed O&M Agreement to ensure implementation of the O&M Plan.
Comments Date:	05231997
Comments:	Recorded Deed Restriction.
Comments Date:	06031997
Comments:	Certified Site.
Comments Date:	07292002
Comments:	Completed Five-Year Review.
Comments Date:	09211995
Comments:	Approved RAW. The final remedy consisted of tank and soil
Comments Date:	09211995
Comments:	removal.

AMERICAN STANDARD PRODUCTS (Continued) **S100833256**

ID Name: EPA IDENTIFICATION NUMBER
ID Value: CAD981406176
ID Name: BEP DATABASE PCODE
ID Value: P22111
ID Name: CALSTARS CODE
ID Value: 200007
Alternate Name: AMERICAN STANDARD PRODUCTS
Alternate Name: AMERICAN STANDARD PRODUCTS: OU-II
Alternate Name: AMERICAN STANDARD PRODUCTS: OU-II/FMF
Alternate Name: Not reported
Special Programs Code: Not reported
Special Programs Name: Not reported

CA BOND EXP. PLAN:
Reponsible Party: RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company: American Standard, Inc.
Project Revenue Source Addr: 40 West 40th Street
Project Revenue Source City,St,Zip: New York, NY 10018
Project Revenue Source Desc: DHS will be issuing a remedial action order or entering into an enforceable agreement with the responsible parties. DHS has budgeted $50,000 for oversight/monitoring of cleanup efforts. DHS will recover 100 percent of direct costs plus staff costs and overhead related to the project. The responsible parties will pay all costs associated with site cleanup.
Site Description: Significant concentrations of heavy metals have been identified at the this decommissioned ceramic manufacturing facility waste water treatment pond. Sedimented waste glazing slip containing lead and zinc is spread over a three acre area across a small creek from the manufacturing site.
Hazardous Waste Desc: Lead has been identified at concentrations as high as 83,000 parts per million (ppm) in the fill material. Zinc has been identified at concentrations as high as 48,000 ppm in the fill material.
Threat To Public Health & Env: The site is located adjacent to a residential area and to a creek which flows into the San Francisco Bay. Ground water and surface water contamination is possible. Direct contact is possible. The site is fenced and posted. People fishing and trespassing along the fenced creek may be exposed by contact or through ingestion.
Site Activity Status: A draft RI report for the settling pond area has been submitted for review. Additional remedial investigation is underway on the manufacturing side of the creek. A preliminary feasibility study of remedial alternatives has been submitted.

K56 **TRIPLE A MACHINE SHOP, INC** **HIST Cal-Sites** **S100833259**
SSW **2801 GIANT ROAD** **CA BOND EXP. PLAN** **N/A**
1/2-1 **RICHMOND, CA 94802** **EMI**
0.667 mi.
3522 ft. **Site 1 of 2 in cluster K**

Relative:
Lower

Actual:
22 ft.

Calsite:
Region: BERKELEY
Facility ID: 07280154
Facility Type: RP
Type: RESPONSIBLE PARTY
Branch: NC
Branch Name: NORTH COAST
File Name: Not reported
State Senate District: 03071997
Status: CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES IMPLEMENTED, REMEDIATION CONTINUES

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

Status Name:	CERTIFIED / OPERATION & MAINTENANCE
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
NPL:	Not Listed
SIC Code:	28
SIC Name:	MANU - CHEMICALS & ALLIED PRODUCTS
Access:	Controlled
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Unknown
Staff Member Responsible for Site:	JSOTO
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	SF
Region Water Control Board Name:	SAN FRANCISCO BAY
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	14
State Senate District Code:	09
Facility ID:	07280154
Activity:	DISC
Activity Name:	DISCOVERY
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04011980
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	SS
Activity Name:	SITE SCREENING
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	01201987
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	RIFS
Activity Name:	REMEDIAL INVESTIGATION / FEASIBILITY STUDY
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	06301989
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	FRIFS
Activity Name:	FOCUSED REMEDIAL INVESTIGATION/FEASIBILITY STUDY
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	12311990
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	FRIFS
Activity Name:	FOCUSED REMEDIAL INVESTIGATION/FEASIBILITY STUDY
AWP Code:	SOIL
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	04011993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	FRIFS
Activity Name:	FOCUSED REMEDIAL INVESTIGATION/FEASIBILITY STUDY
AWP Code:	H2O
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10011993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	DES
Activity Name:	DESIGN
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

Comments Date:	04221994
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	DEED
Activity Name:	DEED RESTRICTIONS
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	10271994
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	RMDL
Activity Name:	REMEDIAL ACTION (RAP REQUIRED)
AWP Code:	CAP
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	12301994
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	X

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	N
Activity Comments:	APPROXIMATELY 70,000 TONS OF LEAD AND CHROMIUM CONTAMINATED SOILENCAPSULATED.
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	CERT
Activity Name:	CERTIFICATION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	03071997
Est Person-Yrs to complete:	0
Estimated Size:	M
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	400
Action Included Capping:	X
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	N
Activity Comments:	AN INTERIM REMOVAL ACTION REMOVED 39 DRUMS AND TREATED 400CY OF SOILCONTAMINATED WITH VOCS. A ONE FOOT SOIL CAP WAS PLACED ON THE SITE,GRADED FOR RUNOFF, & A GW MONITORING PROGRAM WAS PUT INTO PLACE.
For Commercial Reuse:	0
For Industrial Reuse:	5.50000
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	COST
Activity Name:	COST RECOVERY
AWP Code:	SETTL
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	06041996
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	ORDER
Activity Name:	I/SE, IORSE, FFA, FFSRA, VCA, EA
AWP Code:	OM
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	02131997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	COST
Activity Name:	COST RECOVERY
AWP Code:	SETTL
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	02191997
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

Comments Date:	05281999
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	05212004
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	RAP
Activity Name:	REMEDIAL ACTION PLAN / RECORD OF DECISION
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	12201993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	CEQA
Activity Name:	CEQA INCLUDING NEGATIVE DECS
AWP Code:	NEGDE
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	12201993
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Facility ID:	07280154
Activity:	RA
Activity Name:	REMOVAL ACTION
AWP Code:	AERAT
Proposed Budget:	0
AWP Completion Date:	Not reported
Revised Due Date:	Not reported
Comments Date:	11101988
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	N
Activity Comments:	39 DRUMS WERE REMOVED. CONTAMINATED SOIL WAS AERATED AND REPLACED.VOLUME OF SOIL IS UNKNOWN.
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

Facility ID:	07280154
Activity:	5YEAR
Activity Name:	FIVE-YEAR REVIEW REQUIRED BY CERCLA
AWP Code:	Not reported
Proposed Budget:	0
AWP Completion Date:	05312009
Revised Due Date:	Not reported
Comments Date:	Not reported
Est Person-Yrs to complete:	0
Estimated Size:	Not reported
Request to Delete Activity:	Not reported
Activity Status:	COM
Definition of Status:	CERTIFIED / OPERATION & MAINTENANCE
Liquids Removed (Gals):	0
Liquids Treated (Gals):	0
Action Included Capping:	Not reported
Well Decommissioned:	Not reported
Action Included Fencing:	Not reported
Removal Action Certification:	Not reported
Activity Comments:	Not reported
For Commercial Reuse:	0
For Industrial Reuse:	0
For Residential Reuse:	0
Unknown Type:	0
Alternate Address:	2801 GIANT ROAD
Alternate City,St,Zip:	RICHMOND, CA 94806
Background Info:	The Cooper Chemical site is named for a resin catalyst manufacturer that briefly used the site. However, other manufacturers have used onsite buildings since the late 1960s, including National Lead subsidiaries, Weigman and Rose, Inc. (WRI) and currently, Richmond Machine and Fabrication. In the early 1970's, the low area in the back of the property (Site R), was filled in with soil, metal, and other miscellaneous debris. In 1987, thirty drums were discovered in this area. These drums contained resins, other wastes and aromatic hydrocarbons. The surrounding soil were found to be contaminated with the aromatic hydrocarbons. The soil still contains elevated levels of lead and chromium. Although metals are found in the groundwater sediments, they have not been detected in filter groundwater samples. Operation and maintenance entails inspection of the site cap and groundwater monitoring to ensure that no contaminant migration occurs.
Comments Date:	02131997
Comments:	ORDER - OM - Operation & Maintenance Agreement between DTSC and
Comments Date:	02131997
Comments:	NL Industries for the Cooper Chemical Site. Ongoing O&M consist
Comments Date:	02131997
Comments:	of cap maintenance and groundwater monitoring.
Comments Date:	03071997
Comments:	CERT - Site Certified. Operation and Maintenance of the cap and
Comments Date:	03071997
Comments:	groundwater monitoring are required to continue.
Comments Date:	04011980
Comments:	DISC - Facility identified. Site was Cooper Chemical prior to
Comments Date:	04011980
Comments:	1969.
Comments Date:	05281999

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

Comments:	5YEAR - Five Year Review approved. Groundwater monitoring will
Comments Date:	05281999
Comments:	continue on an annual basis. Site inspection will continue
Comments Date:	05281999
Comments:	quarterly due to continued problems with ground squirrels.
Comments Date:	06041996
Comments:	COST - SDETTL - Cost Recovery Settlement with Esselte was
Comments Date:	06041996
Comments:	entered into the federal district court. Settlement required
Comments Date:	06041996
Comments:	the payment of $75,000 to DTSC. This settled past costs through
Comments Date:	06041996
Comments:	December 31, 1991.
Comments Date:	06301989
Comments:	RIFS - Approved the Remedial Investigation/Feasibility Study.
Comments Date:	06301989
Comments:	Remedial investigation results showed elevated metals
Comments Date:	06301989
Comments:	concentrations in soil and groundwater. The feasibility study
Comments Date:	06301989
Comments:	focuses on the heavy metals contamination in soil at Site R and
Comments Date:	06301989
Comments:	recommends capping as the remedy for the site.
Comments Date:	10271994
Comments:	DEED - Deed restriction recorded limiting future uses to
Comments Date:	10271994
Comments:	commercial/industrial.
Comments Date:	11101988
Comments:	RA - AERAT - Removal Action: Drum & Soil removal. Soil aerated.
Comments Date:	12201993
Comments:	RAP - The RAP requires capping the site with a minimum one foot
Comments Date:	12201993
Comments:	compacted soil, grading for drainage, and consolidation of ditch
Comments Date:	12201993
Comments:	soils onto Site R.
Comments Date:	12301994
Comments:	RDML: Completion of the installation of a one foot cap over
Comments Date:	12301994
Comments:	a 5.5 acre site. Prior to constructing the cap the drainage
Comments Date:	12301994
Comments:	ditch was excavated and the contaminated soil was spread
Comments Date:	12301994
Comments:	over the area. Approximately 70,000 tons of lead and
Comments Date:	12301994
Comments:	chromium contaminated soil was enscapsulated under the cap.
ID Name:	CALSTARS CODE
ID Value:	200023
ID Name:	BEP DATABASE PCODE
ID Value:	P21015
ID Name:	EPA IDENTIFICATION NUMBER
ID Value:	CAD980498448
Alternate Name:	COOPER CHEMICAL
Alternate Name:	Not reported
Special Programs Code:	Not reported
Special Programs Name:	Not reported

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Not reported
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Not reported
Project Revenue Source Desc:	Weigmann and Rose, the current site owner, is the designated responsible party and have taken all actions to date. DHS will be issuing a remedial action order or entering into an enforceable agreement with the responsible parties. DHS has budgeted $30,000 for oversight/monitoring of cleanup efforts. DHS will recover 100 percent of direct costs plus staff costs and overhead related to the project. The responsible party will pay for all costs associated with remedial investigations and cleanup activities.
Site Description:	Cooper Chemical formerly manufactured catalyst for fiberglass resins. A chemical manufacturing facility operated adjacent to the vacant site area.
Hazardous Waste Desc:	Heavy metals (lead, zinc and copper) have been detected in the soil.
Threat To Public Health & Env:	The primary route of potential exposure is through direct contact.
Site Activity Status:	The responsible party is continuing with RI/FS activities. Buried drums, discovered in September, 1988, have been removed from the site.

EMI:

Year:	1990
County Code:	7
Air Basin:	SF
Facility ID:	4052
Air District Name:	BA
SIC Code:	3731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1996
County Code:	7
Air Basin:	SF
Facility ID:	4052
Air District Name:	BA
SIC Code:	3731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1997
County Code:	7

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

Air Basin:	SF
Facility ID:	4052
Air District Name:	BA
SIC Code:	3731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2002
County Code:	7
Air Basin:	SF
Facility ID:	4052
Air District Name:	BA
SIC Code:	6531
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2003
County Code:	7
Air Basin:	SF
Facility ID:	4052
Air District Name:	BA
SIC Code:	6531
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2005
County Code:	7
Air Basin:	SF
Facility ID:	4052
Air District Name:	BA
SIC Code:	6531
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported

TRIPLE A MACHINE SHOP, INC (Continued) **S100833259**

Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.015
Reactive Organic Gases Tons/Yr:	.0149445
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

K57 **COOPER CHEMICAL** **RESPONSE** **S103993885**
SSW **2801 GIANT ROAD** **ENVIROSTOR** **N/A**
1/2-1 **RICHMOND, CA 94806** **AST**
0.667 mi. **DEED**
3522 ft. **Site 2 of 2 in cluster K** **Cortese**
HIST CORTESE
Relative: **CERS**
Lower

Actual: **22 ft.**

RESPONSE:

Facility ID:	7280154
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	5.5
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Claude Jemison
Supervisor:	Mark Piros
Division Branch:	Cleanup Berkeley
Site Code:	200023
Site Mgmt. Req.:	DAY, ELD, HOS, NOWN, NUSE, NDEV, NSUB, FOOD, RES
Assembly:	15
Senate:	09
Special Program Status:	Not reported
Status:	Certified / Operation & Maintenance
Status Date:	03/07/1997
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	37.97481
Longitude:	-122.3557
APN:	408-070-011, 408070012, 408070013, 408070014
Past Use:	EQUIPMENT/INSTRUMENT REPAIR, MANUFACTURING - OTHER
Potential COC :	Lead Chromium VI
Confirmed COC:	Chromium VI Lead
Potential Description:	SOIL
Alias Name:	Not reported
Alias Type:	Not reported

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported

COOPER CHEMICAL (Continued) **S103993885**

Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 7280154
Status: Certified / Operation & Maintenance
Status Date: 03/07/1997
Site Code: 200023
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 5.5
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Claude Jemison
Supervisor: Mark Piros
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: YES
Site Mgmt Req: DAY, ELD, HOS, NOWN, NUSE, NDEV, NSUB, FOOD, RES
Funding: Responsible Party
Latitude: 37.97481
Longitude: -122.3557
APN: 408-070-011, 408070012, 408070013, 408070014
Past Use: EQUIPMENT/INSTRUMENT REPAIR, MANUFACTURING - OTHER
Potential COC: Lead Chromium VI
Confirmed COC: Chromium VI Lead
Potential Description: SOIL
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

AST:
Certified Unified Program Agencies: Not reported
Owner: NORTH RICHMOND PROPERTIES INC
Total Gallons: Not reported

COOPER CHEMICAL (Continued) **S103993885**

CERSID:	10009915
Facility ID:	07-000-770615
Business Name:	NORTH RICHMOND PROPERTIES INC
Phone:	5102330458
Fax:	Not reported
Mailing Address:	32 Washington Ave
Mailing Address City:	PT Richmond
Mailing Address State:	CA
Mailing Address Zip Code:	94801
Operator Name:	Stacy Engel-Boyum
Operator Phone:	5102330458
Owner Phone:	5102330458
Owner Mail Address:	32 Washington Ave
Owner State:	CA
Owner Zip Code:	94801
Owner Country:	United States
Property Owner Name:	Not reported
Property Owner Phone:	5102330444
Property Owner Mailing Address:	2801 Giant Rd
Property Owner City:	Richmond
Property Owner Stat :	CA
Property Owner Zip Code:	94806
Property Owner Country:	United States
EPAID:	Not reported

Certified Unified Program Agencies:	Contra Costa
Owner:	Not reported
Total Gallons:	2,000
CERSID:	Not reported
Facility ID:	Not reported
Business Name:	Not reported
Phone:	Not reported
Fax:	Not reported
Mailing Address:	Not reported
Mailing Address City:	Not reported
Mailing Address State:	Not reported
Mailing Address Zip Code:	Not reported
Operator Name:	Not reported
Operator Phone:	Not reported
Owner Phone:	Not reported
Owner Mail Address:	Not reported
Owner State:	Not reported
Owner Zip Code:	Not reported
Owner Country:	Not reported
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	Not reported

DEED:

Envirostor ID:	7280154
Area:	PROJECT WIDE
Sub Area:	Not reported

COOPER CHEMICAL (Continued) **S103993885**

Site Type: STATE RESPONSE
Status: CERTIFIED / OPERATION & MAINTENANCE
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): Not reported
File Name: Envirostor Land Use Restrictions

CORTESE:
Region: CORTESE
Envirostor Id: 7280154
Site/Facility Type: STATE RESPONSE
Cleanup Status: CERTIFIED / OPERATION & MAINTENANCE - LAND USE RESTRICTIONS
Status Date: 03/07/1997
Site Code: 200023
Latitude: 37.974819
Longitude: -122.35572
Owner: Not reported
Enf Type: Not reported
Swat R: Not reported
Flag: envirostor
Order No: Not reported
Waste Discharge System No: Not reported
Effective Date: Not reported
Region 2: Not reported
WID Id: Not reported
Solid Waste Id No: Not reported
Waste Management Uit Name: Not reported
File Name: Haz Waste & Substances Sites

HIST CORTESE:
Region: CORTESE
Facility County Code: 7
Reg By: CALSI
Reg Id: 07280154

CERS TANKS:
Site ID: 336373
CERS ID: 07280154
CERS Description: State Response

Affiliation:
Affiliation Type Desc: Lead Project Manager
Entity Name: CLAUDE JEMISON
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: BERKELEY
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Supervisor
Entity Name: MARK PIROS
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported

COOPER CHEMICAL (Continued) **S103993885**

Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

58
SSW
1/2-1
0.702 mi.
3709 ft.

Relative:
Lower

Actual:
28 ft.

ACME TRANSPORTATION COMPANY
2832 GIANT RD.
SAN PABLO, CA 94806

ENVIROSTOR **U001599869**
LUST **N/A**
HIST UST
DEED
HIST CORTESE
CONTRA COSTA CO. SITE LIST
CERS
CIWQS

ENVIROSTOR:
Facility ID: 7750002
Status: Refer: RWQCB
Status Date: 12/28/1994
Site Code: 200222
Site Type: Historical
Site Type Detailed: * Historical
Acres: 7
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.97387
Longitude: -122.3538
APN: 412-060-002, 412-060-003, 412060005
Past Use: NONE SPECIFIED
Potential COC: * UNSPECIFIED ACID SOLUTION * UNSPECIFIED ALKALINE SOLUTIONS Cyanide (free
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported

ACME TRANSPORTATION COMPANY (Continued) **U001599869**

Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

LUST:
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601300112
Global Id: T0601300112
Latitude: 37.9915
Longitude: -122.3537
Status: Completed - Case Closed
Status Date: 06/14/1995
Case Worker: UUU
RB Case Number: 07-0121
Local Agency: CONTRA COSTA COUNTY
File Location: All Files are on GeoTracker or in the Local Agency Database
Local Case Number: 54785
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

LUST:
Global Id: T0601300112
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

Global Id: T0601300112
Contact Type: Local Agency Caseworker
Contact Name: SUE LOYD
Organization Name: CONTRA COSTA COUNTY
Address: 4333 PACHECO BLVD.
City: MARTINEZ
Email: sloyd@hsd.co.contra-costa.ca.us
Phone Number: Not reported

LUST:
Global Id: T0601300112
Action Type: Other
Date: 10/22/1987
Action: Leak Discovery

Global Id: T0601300112
Action Type: ENFORCEMENT
Date: 03/08/2006
Action: Deed Restriction / Land Use Restriction / Covenant

Global Id: T0601300112
Action Type: Other
Date: 10/22/1987
Action: Leak Stopped

ACME TRANSPORTATION COMPANY (Continued) **U001599869**

Global Id: T0601300112
Action Type: ENFORCEMENT
Date: 02/16/2006
Action: Deed Restriction / Land Use Restriction / Covenant

Global Id: T0601300112
Action Type: ENFORCEMENT
Date: 01/18/2006
Action: Deed Restriction / Land Use Restriction / Covenant

Global Id: T0601300112
Action Type: ENFORCEMENT
Date: 06/14/1995
Action: Closure/No Further Action Letter

Global Id: T0601300112
Action Type: RESPONSE
Date: 01/01/2004
Action: Conceptual Site Model

Global Id: T0601300112
Action Type: Other
Date: 10/22/1987
Action: Leak Reported

LUST:
Global Id: T0601300112
Status: Completed - Case Closed
Status Date: 06/14/1995

Global Id: T0601300112
Status: Open - Case Begin Date
Status Date: 10/22/1987

Global Id: T0601300112
Status: Open - Site Assessment
Status Date: 09/27/1994

HIST UST:
File Number: 00022777
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00022777.pdf
Region: STATE
Facility ID: 00000023553
Facility Type: Other
Other Type: TRUCKING
Contact Name: JERRY J. MOREAU
Telephone: 4152352822
Owner Name: ACME TRANSPORTATION INC.
Owner Address: 2832 GIANT RD.
Owner City,St,Zip: SAN PABLO, CA 94806
Total Tanks: 0002

Tank Num: 001
Container Num: 1
Year Installed: Not reported

ACME TRANSPORTATION COMPANY (Continued) **U001599869**

Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported
Leak Detection: Visual, Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00003000
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Container Construction Thickness: Not reported
Leak Detection: Visual, Stock Inventor

Click here for Geo Tracker PDF:

DEED:
Envirostor ID: T0601300112
Area: Not reported
Sub Area: Not reported
Site Type: LUFT
Status: COMPLETED - CASE CLOSED
Agency: SWRCB
Covenant Uploaded: Y
Deed Date(s): 01/18/2006
File Name: Geotracker Land Use/Deed Restrictions

Envirostor ID: T0601300112
Area: Not reported
Sub Area: Not reported
Site Type: LUFT
Status: COMPLETED - CASE CLOSED
Agency: SWRCB
Covenant Uploaded: Y
Deed Date(s): 02/16/2006
File Name: Geotracker Land Use/Deed Restrictions

Envirostor ID: T0601300112
Area: Not reported
Sub Area: Not reported
Site Type: LUFT
Status: COMPLETED - CASE CLOSED
Agency: SWRCB
Covenant Uploaded: Y
Deed Date(s): 03/08/2006
File Name: Geotracker Land Use/Deed Restrictions

HIST CORTESE:
Region: CORTESE
Facility County Code: 7
Reg By: LTNKA
Reg Id: 07-0121

CONTRA COSTA CO. SITE LIST:
Facility ID: FA0032411

ACME TRANSPORTATION COMPANY (Continued) **U001599869**

Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: HMBP: >10K-100K LBS, 0-19 EMPLOYEES
Region: CONTRA COSTA
Cupa Number: 754785

Facility ID: FA0032411
Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: HWG: LESS THAN 5 TONS/YEAR
Region: CONTRA COSTA
Cupa Number: 754785

Facility ID: FA0032411
Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: UNDERGROUND STORAGE TANK SITE
Region: CONTRA COSTA
Cupa Number: 754785

CERS TANKS:
Site ID: 245505
CERS ID: T0601300112
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: Regional Water Board - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title: Not reported
Affiliation Address: 1515 CLAY ST SUITE 1400
Affiliation City: OAKLAND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Local Agency Caseworker
Entity Name: SUE LOYD - CONTRA COSTA COUNTY
Entity Title: Not reported
Affiliation Address: 4333 PACHECO BLVD.
Affiliation City: MARTINEZ
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

CIWQS:
Agency: Parker, Jack E
Agency Address: 2666 Giant Rd, San Pablo, CA 94806
Place/Project Type: Industrial - Trucking, Except Local
SIC/NAICS: 4213
Region: 2
Program: INDSTW
Regulatory Measure Status: Terminated
Regulatory Measure Type: Storm water industrial
Order Number: 2014-0057-DWQ

ACME TRANSPORTATION COMPANY (Continued) **U001599869**

WDID:	2 07I011659
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	06/13/1995
Termination Date:	08/11/2005
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	37.97405
Longitude:	-122.35442

59
SSW
1/2-1
0.786 mi.
4148 ft.

HILDRETH HOLDINGS
2812 GIANT ROAD
SAN PABLO, CA 94804

RESPONSE **S103065376**
ENVIROSTOR **N/A**
CPS-SLIC
DEED
HIST CORTESE
CERS

Relative:
Lower

Actual:
28 ft.

RESPONSE:

Facility ID:	7410002
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	3
National Priorities List:	NO
Cleanup Oversight Agencies:	CONTRA COSTA COUNTY
Lead Agency Description:	CONTRA COSTA COUNTY
Project Manager:	Not reported
Supervisor:	Karen Toth
Division Branch:	Cleanup Berkeley
Site Code:	200214
Site Mgmt. Req.:	NONE SPECIFIED
Assembly:	15
Senate:	09
Special Program Status:	Not reported
Status:	Refer: Other Agency
Status Date:	06/03/1994
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	37.97222
Longitude:	-122.355
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC :	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	Not reported
Alias Type:	Not reported

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported

HILDRETH HOLDINGS (Continued) **S103065376**

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 7410002
Status: Refer: Other Agency
Status Date: 06/03/1994
Site Code: 200214
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 3
NPL: NO
Regulatory Agencies: CONTRA COSTA COUNTY
Lead Agency: CONTRA COSTA COUNTY
Program Manager: Not reported
Supervisor: Karen Toth
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Responsible Party
Latitude: 37.97222
Longitude: -122.355
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

HILDRETH HOLDINGS (Continued) **S103065376**

CPS-SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	11/23/2005
Global Id:	SL0601308926
Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number:	Not reported
Latitude:	37.972567
Longitude:	-122.354801
Case Type:	Cleanup Program Site
Case Worker:	UUU
Local Agency:	CONTRA COSTA COUNTY
RB Case Number:	07S0033
File Location:	Not reported
Potential Media Affected:	Soil
Potential Contaminants of Concern:	Lead, Gasoline, Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

DEED:

Envirostor ID:	SL0601308926
Area:	Not reported
Sub Area:	Not reported
Site Type:	SLIC
Status:	COMPLETED - CASE CLOSED
Agency:	SWRCB
Covenant Uploaded:	Y
Deed Date(s):	03/08/2006
File Name:	Geotracker Land Use/Deed Restrictions

HIST CORTESE:

Region:	CORTESE
Facility County Code:	7
Reg By:	CALSI
Reg Id:	07410002

CERS TANKS:

Site ID:	243849
CERS ID:	SL0601308926
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	Regional Water Board - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title:	Not reported
Affiliation Address:	1515 CLAY ST SUITE 1400
Affiliation City:	OAKLAND
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	SUE LOYD - CONTRA COSTA COUNTY
Entity Title:	Not reported

HILDRETH HOLDINGS (Continued) **S103065376**

Affiliation Address: 4333 PACHECO BLVD.
Affiliation City: MARTINEZ
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Site ID: 338320
CERS ID: 07410002
CERS Description: State Response

Affiliation:
Affiliation Type Desc: Supervisor
Entity Name: Karen Toth
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

60
NW
1/2-1
0.862 mi.
4553 ft.

PT. PINOLE REGIONAL PARK **Notify 65** **S100179664**
N/A

RICHMOND, CA 92677

Relative:
Higher

Actual:
96 ft.

NOTIFY 65:
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Issue Date: Not reported
Incident Description: Not reported

61
SSW
1/2-1
0.910 mi.
4807 ft.

RADIANT COLOR **RCRA-SQG** **1000840766**
2800 RADIANT AVE **ENVIROSTOR** **CAD009129479**
RICHMOND, CA 94804 **CHMIRS**
FTTS
HIST FTTS
WDS

Relative:
Lower

Actual:
15 ft.

RCRA-SQG:
Date form received by agency: 02/25/2002
Facility name: RADIANT COLOR
Facility address: 2800 RADIANT AVENUE
RICHMOND, CA 94804
EPA ID: CAD009129479
Contact: FREDERICK L MULLER
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: 510-970-7786

RADIANT COLOR (Continued) **1000840766**

Contact email:	Not reported
EPA Region:	09
Land type:	Private
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	MAGRUDER COLOR COMPANY
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	12/30/1985
Owner/Op end date:	Not reported

Owner/operator name:	NEON ASSOCIATES
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	12/30/1985
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	Yes
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

. Waste code:	D001
. Waste name:	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF

RADIANT COLOR (Continued) **1000840766**

LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D003
. Waste name: A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.

. Waste code: D009
. Waste name: MERCURY

. Waste code: D011
. Waste name: SILVER

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Historical Generators:

Date form received by agency: 02/25/2002
Site name: RADIANT COLOR
Classification: Small Quantity Generator

Date form received by agency: 10/12/2000
Site name: RADIANT COLOR
Classification: Large Quantity Generator

Date form received by agency: 03/04/1999
Site name: RADIANT COLOR
Classification: Large Quantity Generator

Date form received by agency: 03/19/1998
Site name: RADIANT COLOR
Classification: Large Quantity Generator

RADIANT COLOR (Continued) **1000840766**

Date form received by agency: 09/01/1996
Site name: RADIANT COLOR
Classification: Large Quantity Generator

Date form received by agency: 02/28/1996
Site name: RADIANT COLOR DIV.,MAGRUDER COLOR INC.
Classification: Large Quantity Generator

Date form received by agency: 03/10/1994
Site name: RADIANT COLOR
Classification: Large Quantity Generator

Date form received by agency: 10/09/1992
Site name: RADIANT COLOR
Classification: Large Quantity Generator

Date form received by agency: 02/28/1992
Site name: RADIANT COLOR
Classification: Large Quantity Generator

Date form received by agency: 03/23/1990
Site name: RADIANT COLOR/CIBA-GEIGY CORP
Classification: Large Quantity Generator

Facility Has Received Notices of Violations:
Regulation violated: F - 262.30-34.C
Area of violation: Generators - General
Date violation determined: 01/18/2000
Date achieved compliance: 11/16/2000
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: 07/19/2000
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: F - 262.30-34.C
Area of violation: Generators - General
Date violation determined: 01/18/2000
Date achieved compliance: 11/16/2000
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/22/2000
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 11/02/1994
Date achieved compliance: 01/18/2000

RADIANT COLOR (Continued) **1000840766**

Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 09/14/1992
Date achieved compliance: 10/07/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.30-34.C
Area of violation: Generators - General
Date violation determined: 06/26/1992
Date achieved compliance: 09/23/1992
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/10/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.50-60
Area of violation: Generators - General
Date violation determined: 06/26/1992
Date achieved compliance: 09/23/1992
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/10/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 06/26/1992
Date achieved compliance: 09/23/1992
Violation lead agency: EPA

RADIANT COLOR (Continued) **1000840766**

Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/10/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 06/26/1991
Date achieved compliance: 05/27/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 12/12/1984
Date achieved compliance: 06/26/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/12/1984
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 03/23/2005
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 12/02/2004
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 01/18/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 11/16/2000
Evaluation lead agency: EPA

Evaluation date: 11/02/1994

RADIANT COLOR (Continued) **1000840766**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/18/2000
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 10/07/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 09/14/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/07/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 05/27/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/23/1992
Evaluation lead agency: EPA

Evaluation date: 05/27/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 09/23/1992
Evaluation lead agency: EPA

Evaluation date: 06/26/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/27/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 12/12/1984
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/26/1991
Evaluation lead agency: State Contractor/Grantee

ENVIROSTOR:
Facility ID: 7320038
Status: Inactive - Needs Evaluation
Status Date: 06/29/1999
Site Code: Not reported
Site Type: Evaluation
Site Type Detailed: Evaluation
Acres: 7.3
NPL: NO
Regulatory Agencies: SMBRP, US EPA
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Daniel Murphy
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported

RADIANT COLOR (Continued) **1000840766**

Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.97243
Longitude: -122.3614
APN: 408-082-008-9, 408082029
Past Use: NONE SPECIFIED
Potential COC: Benzene Acetone Xylenes
Confirmed COC: 30032-NO 30003-NO 30593-NO
Potential Description: NONE SPECIFIED
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

CHMIRS:
OES Incident Number: 1-5468
OES notification: 09/26/2001
OES Date: Not reported
OES Time: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA DOT PUC/ICC Number: Not reported
Company Name: Not reported

RADIANT COLOR (Continued) **1000840766**

Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2001
Agency:	Radiant Color
Incident Date:	9/25/200112:00:00 AM
Admin Agency:	Contra Costa County Health Services Dept.
Amount:	Not reported
Contained:	Yes
Site Type:	Industrial Plant
E Date:	Not reported
Substance:	Formaldehyde
Pounds:	1
Unknown:	0.000000
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	Per caller, an over temp sensor activated water cooling system causing the system to be shut down which resulted in the release of the substance.

FTTS INSP:

Inspection Number:	19881104NEIC 1
Region:	11
Inspection Date:	11/04/88
Inspector:	NEIC
Violation occurred:	No
Investigation Type:	Section 5 Premanufacture Notice
Investigation Reason:	Neutral Scheme, Headquarters
Legislation Code:	TSCA
Facility Function:	Manufacturer

HIST FTTS INSP:

RADIANT COLOR (Continued) **1000840766**

Inspection Number:	19881104NEIC 1
Region:	11
Inspection Date:	Not reported
Inspector:	NEIC
Violation occurred:	No
Investigation Type:	Section 5 Premanufacture Notice
Investigation Reason:	Neutral Scheme, Headquarters
Legislation Code:	TSCA
Facility Function:	Manufacturer

WDS:

Facility ID:	San Francisco Bay 07I003289
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	2
Facility Telephone:	5102339119
Facility Contact:	PETER MARKER
Agency Name:	RADIANT COLOR DIV MAGRUDER CO
Agency Address:	PO Box 4019
Agency City,St,Zip:	Richmond 948040019
Agency Contact:	PETER MARKER
Agency Telephone:	5102339119
Agency Type:	Private
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

62
SW
1/2-1
0.964 mi.
5090 ft.

Relative:
Lower

Actual:
9 ft.

STAUFFER CHEM CO RICHMOND PHOSPATE PLT
525 MAAS AVE
RICHMOND, CA 94801

Database(s):
SEMS-ARCHIVE
RCRA-LQG
ENVIROSTOR
CPS-SLIC
SWEEPS UST
HIST UST
CA FID UST
DEED
FINDS
ECHO
NPDES
CONTRA COSTA CO. SITE LIST
CERS
CIWQS

EDR ID Number: **1000424837**
EPA ID Number: **CAD009123407**

SEMS Archive:

Site ID:	901150
EPA ID:	CAD009123407
Cong District:	7
FIPS Code:	6013
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:

Region:	9
Site ID:	901150
EPA ID:	CAD009123407
Site Name:	STAUFFER CHEM CO RICHMOND PHOSPATE PLT
NPL:	N
FF:	N
OU:	0
Action Code:	VS
Action Name:	ARCH SITE
SEQ:	1
Start Date:	Not reported
Finish Date:	1988-04-01 00:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf In-Hse

Region:	9
Site ID:	901150
EPA ID:	CAD009123407
Site Name:	STAUFFER CHEM CO RICHMOND PHOSPATE PLT
NPL:	N
FF:	N
OU:	0
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	Not reported
Finish Date:	1987-06-01 00:00:00
Qual:	H
Current Action Lead:	EPA Perf

Region:	9
Site ID:	901150
EPA ID:	CAD009123407
Site Name:	STAUFFER CHEM CO RICHMOND PHOSPATE PLT
NPL:	N

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

FF:	N
OU:	0
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	1979-11-01 00:00:00
Finish Date:	1979-11-01 00:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	9
Site ID:	901150
EPA ID:	CAD009123407
Site Name:	STAUFFER CHEM CO RICHMOND PHOSPATE PLT
NPL:	N
FF:	N
OU:	0
Action Code:	PA
Action Name:	PA
SEQ:	2
Start Date:	Not reported
Finish Date:	1988-04-01 00:00:00
Qual:	N
Current Action Lead:	EPA Perf

RCRA-LQG:

Date form received by agency:	02/21/2013
Facility name:	FORMER STAUFFER CHEMICAL FACILITY
Facility address:	525 MAAS AVENUE RICHMOND, CA 94801
EPA ID:	CAD009123407
Mailing address:	RHODIA INC., CN-7500 RHODIA INC., CN-7500 CRANBURY, NJ 08512-7500
Contact:	PAUL NEMANIC
Contact address:	RHODIA INC., CN-7500 CRANBURY, NJ 08512-7500
Contact country:	US
Contact telephone:	609-860-4337
Contact email:	PAUL.NEMANIC@US.RHODIA.COM
EPA Region:	09
Land type:	Private
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Owner/Operator Summary:

Owner/operator name:	MURRAY PARKWAY PROPERTIES INC.
Owner/operator address:	P.O. BOX 285
	BELVEDERE, CA 94920
Owner/operator country:	Not reported
Owner/operator telephone:	415-435-3433
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	04/15/1998
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	STAUFFER CHEMICAL COMPANY
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	PAUL NEMANIC
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	04/15/1998
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: D004
. Waste name: ARSENIC

Historical Generators:
Date form received by agency: 05/31/2011
Site name: RHODIA INC
Classification: Large Quantity Generator

. Waste code: 261
. Waste name: Polychlorinated biphenyls and material containing PCB's

. Waste code: 611
. Waste name: Contaminated soil from site clean-ups

. Waste code: D004
. Waste name: ARSENIC

Date form received by agency: 04/26/2011
Site name: FORMER STAUFFER CHEMICAL FACILITY
Classification: Large Quantity Generator

. Waste code: 261
. Waste name: Polychlorinated biphenyls and material containing PCB's

. Waste code: 611
. Waste name: Contaminated soil from site clean-ups

. Waste code: D004
. Waste name: ARSENIC

Date form received by agency: 09/01/1996
Site name: STAUFFER CHEM CO INDUSTRIAL CHEM DIV
Classification: Small Quantity Generator

Date form received by agency: 08/14/1980
Site name: STAUFFER CHEM CO INDUSTRIAL CHEM DIV
Classification: Large Quantity Generator

Facility Has Received Notices of Violations:

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/05/1985
Date achieved compliance: 03/05/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/05/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 03/05/1985
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/05/1990
Evaluation lead agency: State Contractor/Grantee

ENVIROSTOR:
Facility ID: 7280072
Status: Refer: RWQCB
Status Date: 02/25/1998
Site Code: Not reported
Site Type: Evaluation
Site Type Detailed: Evaluation
Acres: 0
NPL: NO
Regulatory Agencies: RWQCB 2 - San Francisco Bay
Lead Agency: RWQCB 2 - San Francisco Bay
Program Manager: Not reported
Supervisor: Barbara Cook
Division Branch: Cleanup Berkeley
Assembly: 15
Senate: 09
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.97583
Longitude: -122.3641
APN: NONE SPECIFIED
Past Use: MANUFACTURING - CHEMICALS
Potential COC: Arsenic Phosphoric acid
Confirmed COC: NONE SPECIFIED
Potential Description: OTH, SOIL
Alias Name: Not reported
Alias Type: Not reported

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

CPS-SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	12/05/2011
Global Id:	SLT2O366256
Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number:	Not reported
Latitude:	37.9747053223607
Longitude:	-122.359872206299
Case Type:	Cleanup Program Site
Case Worker:	MEJ
Local Agency:	Not reported
RB Case Number:	07S0114
File Location:	Regional Board
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Polychlorinated biphenyls (PCBs), Arsenic, Other Metal
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

SWEEPS UST:

Status:	Not reported
Comp Number:	16011
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	07-000-016011-000001
Tank Status:	Not reported
Capacity:	500
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	1

HIST UST:

File Number:	00022F9B
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00022F9B.pdf
Region:	STATE
Facility ID:	00000016011
Facility Type:	Not reported
Other Type:	CHEMICAL MFG.
Contact Name:	J.M. ODRZYWOLSKI

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Telephone:	4152326460
Owner Name:	STAUFFER CHEMICAL COMPANY
Owner Address:	525 MAAS AVENUE
Owner City,St,Zip:	RICHMOND, CA 94801
Total Tanks:	0003
Tank Num:	001
Container Num:	2
Year Installed:	1971
Tank Capacity:	00140000
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	30
Leak Detection:	None
Tank Num:	002
Container Num:	3
Year Installed:	1960
Tank Capacity:	00000300
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	4
Leak Detection:	None
Tank Num:	003
Container Num:	1
Year Installed:	1964
Tank Capacity:	00000500
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	1/2
Leak Detection:	Stock Inventor

Click here for Geo Tracker PDF:

CA FID UST:

Facility ID:	07000528
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	4152326460
Mail To:	Not reported
Mailing Address:	NYALA FARM RD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	RICHMOND 94801
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

DEED:

Envirostor ID:	SLT2O366256

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Area: Not reported
Sub Area: Not reported
Site Type: SLIC
Status: COMPLETED - CASE CLOSED
Agency: SWRCB
Covenant Uploaded: Y
Deed Date(s): 11/21/2003
File Name: Geotracker Land Use/Deed Restrictions

FINDS:

Registry ID: 110055161079

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1000424837
Registry ID: 110055161079
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110055161079

NPDES:

Facility Status: Terminated
NPDES Number: CAS000002
Region: 2
Agency Number: 0
Regulatory Measure ID: 425690
Place ID: Not reported
Order Number: 2009-0009-DWQ
WDID: 2 07C363418
Regulatory Measure Type: Enrollee
Program Type: Construction
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 04/12/2012
Termination Date Of Regulatory Measure: 07/03/2018
Expiration Date Of Regulatory Measure: Not reported
Discharge Address: 555 DuBois St
Discharge Name: Maggiora and Ghilotti Incorporated
Discharge City: San Rafael
Discharge State: California
Discharge Zip: 94901
Status: Not reported
Status Date: Not reported
Operator Name: Not reported
Operator Address: Not reported

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	2
Regulatory Measure ID:	425690
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	2 07C363418
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	04/05/2012
Processed Date:	04/12/2012
Status:	Active
Status Date:	04/12/2012
Place Size:	11
Place Size Unit:	Acres
Contact:	Kevin Bechtel
Contact Title:	Estimator
Contact Phone:	415-459-8640
Contact Phone Ext:	Not reported
Contact Email:	kevin@maggiora-ghilotti.com
Operator Name:	Maggiora and Ghilotti Incorporated
Operator Address:	555 DuBois St
Operator City:	San Rafael
Operator State:	California
Operator Zip:	94901
Operator Contact:	Kevin Bechtel
Operator Contact Title:	Estimator
Operator Contact Phone:	415-459-8640
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	kevin@maggiora-ghilotti.com
Operator Type:	Private Business
Developer:	Maggiora and Ghilotti Incorporated
Developer Address:	555 DuBois St
Developer City:	San Rafael
Developer State:	California
Developer Zip:	94901
Developer Contact:	Kevin Bechtel
Developer Contact Title:	Estimator
Constype Linear Utility Ind:	N
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Contractor's storage yard
Constype Other Ind:	Y
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	San Francisco Bay
Certifier:	Kevin Bechtel
Certifier Title:	Not reported
Certification Date:	05-APR-12
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

NPDES Number:	CAS000002
Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	425690
Order Number:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 07C363418
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/12/2012
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Maggiora and Ghilotti Incorporated
Discharge Address:	555 DuBois St
Discharge City:	San Rafael
Discharge State:	California
Discharge Zip:	94901
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	2 07W000336
Regulatory Measure Type:	Construction
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Expired
Status Date:	09/30/2011
Operator Name:	Murray Parkway Properties
Operator Address:	PO Box 285
Operator City:	Belvedere
Operator State:	California
Operator Zip:	94920
Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	2 07C363418
Regulatory Measure Type:	Construction
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Terminated
Status Date:	07/09/2018
Operator Name:	Maggiora and Ghilotti Incorporated
Operator Address:	555 DuBois St
Operator City:	San Rafael
Operator State:	California
Operator Zip:	94901

NPDES as of 03/2018:

NPDES Number:	Not reported
Status:	Not reported
Agency Number:	Not reported
Region:	2
Regulatory Measure ID:	425690
Order Number:	Not reported
Regulatory Measure Type:	Construction
Place ID:	Not reported
WDID:	2 07C363418
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Discharge State:	Not reported
Discharge Zip:	Not reported
Received Date:	04/05/2012
Processed Date:	04/12/2012
Status:	Active
Status Date:	04/12/2012
Place Size:	11
Place Size Unit:	Acres
Contact:	Kevin Bechtel
Contact Title:	Estimator
Contact Phone:	415-459-8640
Contact Phone Ext:	Not reported
Contact Email:	kevin@maggiora-ghilotti.com
Operator Name:	Maggiora and Ghilotti Incorporated
Operator Address:	555 DuBois St
Operator City:	San Rafael
Operator State:	California
Operator Zip:	94901
Operator Contact:	Kevin Bechtel
Operator Contact Title:	Estimator
Operator Contact Phone:	415-459-8640
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	kevin@maggiora-ghilotti.com
Operator Type:	Private Business
Developer:	Maggiora and Ghilotti Incorporated
Developer Address:	555 DuBois St
Developer City:	San Rafael
Developer State:	California
Developer Zip:	94901
Developer Contact:	Kevin Bechtel
Developer Contact Title:	Estimator
Constype Linear Utility Ind:	N
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported
Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Contractor’s storage yard
Constype Other Ind:	Y
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	N
Receiving Water Name:	San Francisco Bay
Certifier:	Kevin Bechtel
Certifier Title:	Not reported
Certification Date:	05-APR-12
Primary Sic:	Not reported
Secondary Sic:	Not reported

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Tertiary Sic:	Not reported
NPDES Number:	CAS000002
Status:	Active
Agency Number:	0
Region:	2
Regulatory Measure ID:	425690
Order Number:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place ID:	Not reported
WDID:	2 07C363418
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/12/2012
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Maggiora and Ghilotti Incorporated
Discharge Address:	555 DuBois St
Discharge City:	San Rafael
Discharge State:	California
Discharge Zip:	94901
Received Date:	Not reported
Processed Date:	Not reported
Status:	Not reported
Status Date:	Not reported
Place Size:	Not reported
Place Size Unit:	Not reported
Contact:	Not reported
Contact Title:	Not reported
Contact Phone:	Not reported
Contact Phone Ext:	Not reported
Contact Email:	Not reported
Operator Name:	Not reported
Operator Address:	Not reported
Operator City:	Not reported
Operator State:	Not reported
Operator Zip:	Not reported
Operator Contact:	Not reported
Operator Contact Title:	Not reported
Operator Contact Phone:	Not reported
Operator Contact Phone Ext:	Not reported
Operator Contact Email:	Not reported
Operator Type:	Not reported
Developer:	Not reported
Developer Address:	Not reported
Developer City:	Not reported
Developer State:	Not reported
Developer Zip:	Not reported
Developer Contact:	Not reported
Developer Contact Title:	Not reported
Constype Linear Utility Ind:	Not reported
Emergency Phone:	Not reported
Emergency Phone Ext:	Not reported
Constype Above Ground Ind:	Not reported
Constype Below Ground Ind:	Not reported
Constype Cable Line Ind:	Not reported
Constype Comm Line Ind:	Not reported

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Constype Commertial Ind:	Not reported
Constype Electrical Line Ind:	Not reported
Constype Gas Line Ind:	Not reported
Constype Industrial Ind:	Not reported
Constype Other Description:	Not reported
Constype Other Ind:	Not reported
Constype Recons Ind:	Not reported
Constype Residential Ind:	Not reported
Constype Transport Ind:	Not reported
Constype Utility Description:	Not reported
Constype Utility Ind:	Not reported
Constype Water Sewer Ind:	Not reported
Dir Discharge Uswater Ind:	Not reported
Receiving Water Name:	Not reported
Certifier:	Not reported
Certifier Title:	Not reported
Certification Date:	Not reported
Primary Sic:	Not reported
Secondary Sic:	Not reported
Tertiary Sic:	Not reported

Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	2 07W000586
Regulatory Measure Type:	Construction
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Expired
Status Date:	12/02/2011
Operator Name:	Maggiora and Ghilotti Incorporated
Operator Address:	555 DuBois St
Operator City:	San Rafael
Operator State:	California
Operator Zip:	94901

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0031803
Billing Status:	INACTIVE, NON-BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG GENERAL
Region:	CONTRA COSTA
Cupa Number:	716011

STAUFFER CHEM CO RICHMOND PHOSPATE PLT (Continued) **1000424837**

Facility ID: FA0031803
Billing Status: INACTIVE, NON-BILLABLE
Program Status: CONTRA COSTA CO. SITE LIST
Program/Elements: UNDERGROUND STORAGE TANK SITE
Region: CONTRA COSTA
Cupa Number: 716011

CERS TANKS:
Site ID: 256684
CERS ID: SLT2O366256
CERS Description: Cleanup Program Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: MARK JOHNSON - SAN FRANCISCO BAY RWQCB (REGION 2)
Entity Title: Not reported
Affiliation Address: 1515 CLAY STREET, SUITE 1400
Affiliation City: OAKLAND
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

CIWQS:
Agency: Maggiora and Ghilotti Incorporated
Agency Address: 555 DuBois St, San Rafael, CA 94901
Place/Project Type: Construction - Other: Contractor’s storage yard
SIC/NAICS: Not reported
Region: 2
Program: CONSTW
Regulatory Measure Status: Terminated
Regulatory Measure Type: Storm water construction
Order Number: 2009-0009-DWQ
WDID: 2 07C363418
NPDES Number: CAS000002
Adoption Date: Not reported
Effective Date: 04/12/2012
Termination Date: 07/03/2018
Expiration/Review Date: Not reported
Design Flow: Not reported
Major/Minor: Not reported
Complexity: Not reported
TTWQ: Not reported
Enforcement Actions within 5 years: 0
Violations within 5 years: 0
Latitude: 37.975949
Longitude: -122.366567

Count: 11 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
POINT RICHMOND	1003878953	SAN PABLO BAY SPORTSMENS CLUB	POINT SAN PABLO YACHT HARBOR	94801	SEMS-ARCHIVE
RICHMOND	S116165405	CHEVRON LAND AND DEVELOPMENT	BORDERED BY SAN PABLO AVENUE &	94806	ENVIROSTOR
RICHMOND	S106235222	POINT ISABEL PARK TRAIL	WEST END CENTRAL AVE POINT ISA		CPS-SLIC
RICHMOND	S106235152	CATELLUS DEVELOPMENT CORP	WEST END CENTRAL AVE POINT ISA		CPS-SLIC
RICHMOND	S123100443	GOLDEN STATE FC LLC - DSF6	6015 GIANT RD	94806	CERS HAZ WASTE, CERS
RICHMOND	S106117814	CHEVRON SERVICE STATION 9-0222	2900 HILLTOP MALL ROAD		LUST
RICHMOND	S121631545	COUNTRY CLUB VISTA	RICHMOND PKWY AT GIANT HWY	94806	CIWQS
RICHMOND	1005440844	BLUE SKY SPORTS	1736 SAN PABLO AVE.		SEMS
RICHMOND	S106235110	TERMINAL ONE RICHMOND	TERMINAL ONE PORT OF RICHMOND		CPS-SLIC
RICHMOND	S106234918	SEACLIFF VILLAS	UNKNOWN POINT RICHMOND		CPS-SLIC
RICHMOND	S106234911	SANTA FE POINT ISABEL FORMER	UNKNOWN WEST OF I 80 I 580		CPS-SLIC

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/06/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/28/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/31/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/28/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/31/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/28/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 45

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/08/2018
Date Data Arrived at EDR: 08/10/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 14

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/08/2018
Number of Days to Update: 26

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/10/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 21
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 20

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/18/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/18/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 33

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 09/28/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 34

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/07/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 11/02/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 07/30/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 03/28/2018
Date Data Arrived at EDR: 05/25/2018
Date Made Active in Reports: 07/10/2018
Number of Days to Update: 46

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/11/2018
Number of Days to Update: 29

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 08/30/2018
Date Made Active in Reports: 10/01/2018
Number of Days to Update: 32

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/02/2018
Number of Days to Update: 27

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 51

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/27/2018
Next Scheduled EDR Contact: 11/05/2018
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)
Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/08/2018
Number of Days to Update: 26

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)
Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/12/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/12/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 08/31/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/09/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/21/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/24/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 10/04/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/11/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 10/09/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/11/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 10/26/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/03/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/03/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 10/30/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/17/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 80
Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218
Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546
Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/09/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3
Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23
Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 43
Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 11/27/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/29/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 37

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 08/07/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 30

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 06/19/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 87

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/02/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 12/31/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/22/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 44

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 21

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 7

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 08/28/2018
Date Data Arrived at EDR: 08/30/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 63

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/30/2018
Date Data Arrived at EDR: 09/27/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 35

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Annually

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 27

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/21/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/02/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 36

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 10/19/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/14/2018
Date Data Arrived at EDR: 08/16/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 25

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 11/07/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/10/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 20

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/09/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/10/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 08/28/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 28

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 08/09/2018
Date Data Arrived at EDR: 08/10/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 31

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 28

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 33

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/19/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/19/2018
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/13/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region’s active disposal pits are operating without permission.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 10/12/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/23/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/25/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)

Underground control injection sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 10/02/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 12/04/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)

Projects sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/09/2018
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 10/05/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 22

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/05/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 23

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List

Cupa Facility List

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 27

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

BUTTE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 08/02/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 14

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 05/23/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 50

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/11/2018
Number of Days to Update: 21

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 10/29/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 08/16/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 8

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 09/18/2018
Number of Days to Update: 13

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 10/18/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 27

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/11/2018
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/22/2018
Number of Days to Update: 40

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 20

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

INYO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/20/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/12/2018
Number of Days to Update: 49

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/23/2018
Date Data Arrived at EDR: 08/24/2018
Date Made Active in Reports: 09/18/2018
Number of Days to Update: 25

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 11/08/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 6

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 22

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

LOS ANGELES COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AOCONCERN: San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206
Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/20/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 35
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31
Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/16/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 05/14/2018
Number of Days to Update: 13
Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/16/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Semi-Annually

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Annually

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/05/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/30/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 15

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 08/31/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 19

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 07/18/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 15

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 11/01/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 15

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 08/27/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 36

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/06/2018
Date Data Arrived at EDR: 11/08/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 6

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 07/13/2018
Date Data Arrived at EDR: 08/08/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 33

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/13/2018
Date Data Arrived at EDR: 08/08/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 33

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 07/13/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 09/12/2018
Number of Days to Update: 37

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/06/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/06/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 27

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 07/19/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 4

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 11/05/2018
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/03/2018
Date Data Arrived at EDR: 10/02/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 30

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/02/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/23/2018
Date Data Arrived at EDR: 10/02/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 31

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/02/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List

Cupa facility list

Date of Government Version: 08/07/2018
Date Data Arrived at EDR: 08/09/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 27

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 07/27/2018
Date Data Arrived at EDR: 07/31/2018
Date Made Active in Reports: 09/10/2018
Number of Days to Update: 41

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/05/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/04/2018
Date Data Arrived at EDR: 06/06/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 41

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56
Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38
Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

SAN DIEGO CO. SAM: Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 09/17/2018
Date Data Arrived at EDR: 09/18/2018
Date Made Active in Reports: 10/03/2018
Number of Days to Update: 15
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/17/2018
Next Scheduled EDR Contact: 12/31/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/20/2018
Date Data Arrived at EDR: 08/21/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 17

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 42

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/17/2018
Number of Days to Update: 27

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 08/17/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 16

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Annually

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/06/2018
Date Made Active in Reports: 09/11/2018
Number of Days to Update: 36
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 11/01/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90
Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51
Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 10/17/2018
Number of Days to Update: 43
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 09/04/2018
Date Made Active in Reports: 10/18/2018
Number of Days to Update: 44
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 21

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 10/25/2018
Number of Days to Update: 21

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/24/2018
Next Scheduled EDR Contact: 01/07/2019
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 08/14/2018
Date Data Arrived at EDR: 08/16/2018
Date Made Active in Reports: 08/24/2018
Number of Days to Update: 8

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/25/2018
Number of Days to Update: 35

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 07/17/2018
Date Data Arrived at EDR: 08/02/2018
Date Made Active in Reports: 09/07/2018
Number of Days to Update: 36

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 09/13/2018
Date Data Arrived at EDR: 09/14/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 5

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 02/18/2019
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 36

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/01/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Annually

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/07/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: Quarterly

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 09/25/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 36
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/22/2018
Next Scheduled EDR Contact: 02/04/2019
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 09/04/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/04/2018
Number of Days to Update: 22
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/12/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/19/2018
Date Made Active in Reports: 11/05/2018
Number of Days to Update: 17
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/14/2019
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 11/07/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 7
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 10/25/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/12/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/04/2018
Number of Days to Update: 20
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/14/2018
Next Scheduled EDR Contact: 02/25/2019
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 19

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/09/2018
Next Scheduled EDR Contact: 01/21/2019
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 08/01/2018
Date Made Active in Reports: 08/31/2018
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 10/31/2018
Next Scheduled EDR Contact: 02/11/2019
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/27/2018
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/15/2018
Next Scheduled EDR Contact: 01/28/2019
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/06/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

RICHMOND COUNTRY CLUB
1 MARKOVICH LANE
SAN PABLO, CA 94806

TARGET PROPERTY COORDINATES

Latitude (North):	37.986067 - 37° 59' 9.84''
Longitude (West):	122.350701 - 122° 21' 2.52''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	557019.2
UTM Y (Meters):	4204262.5
Elevation:	90 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5640624 RICHMOND, CA
Version Date:	2012
North Map:	5602140 MARE ISLAND, CA
Version Date:	2012
Southwest Map:	5641122 SAN QUENTIN, CA
Version Date:	2012
Northwest Map:	5602430 PETALUMA POINT, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

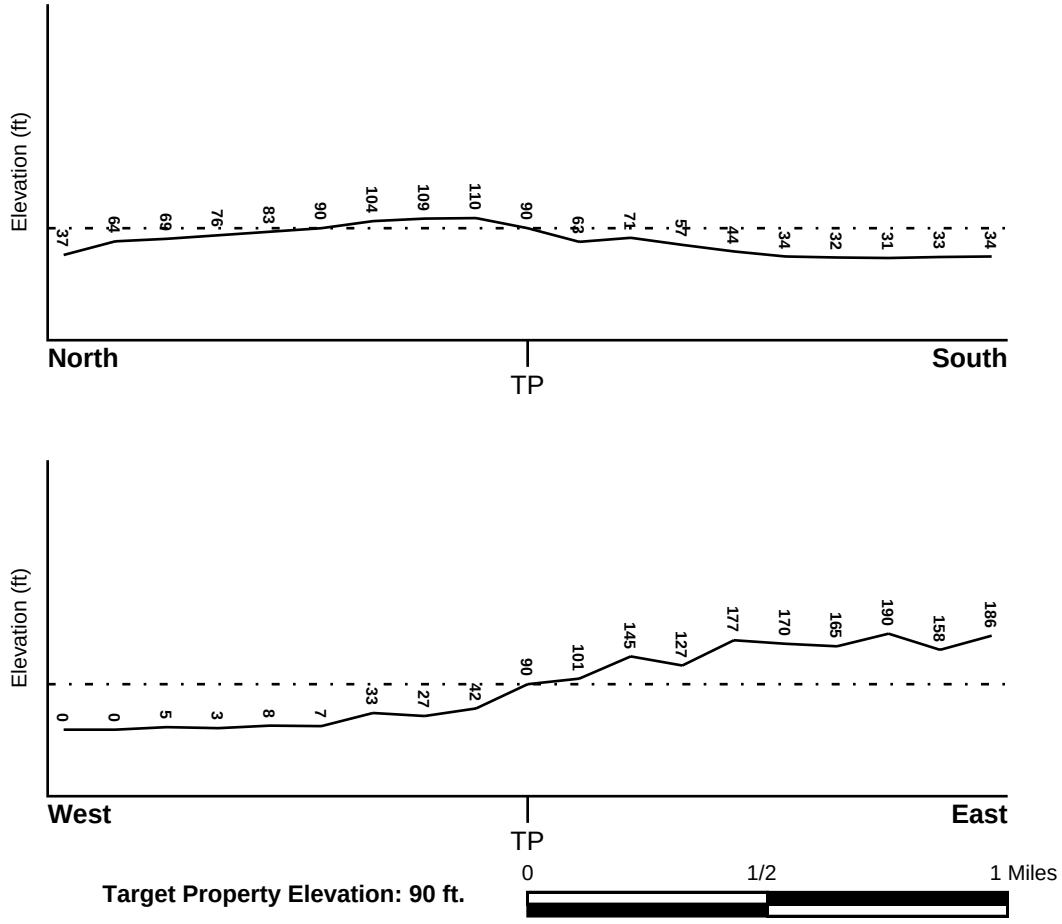
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06013C0226G	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06013C0038G	FEMA FIRM Flood data
06013C0227F	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
RICHMOND	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
1	1/2 - 1 Mile South	W
1G	1/2 - 1 Mile South	W

For additional site information, refer to Physical Setting Source Map Findings.

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

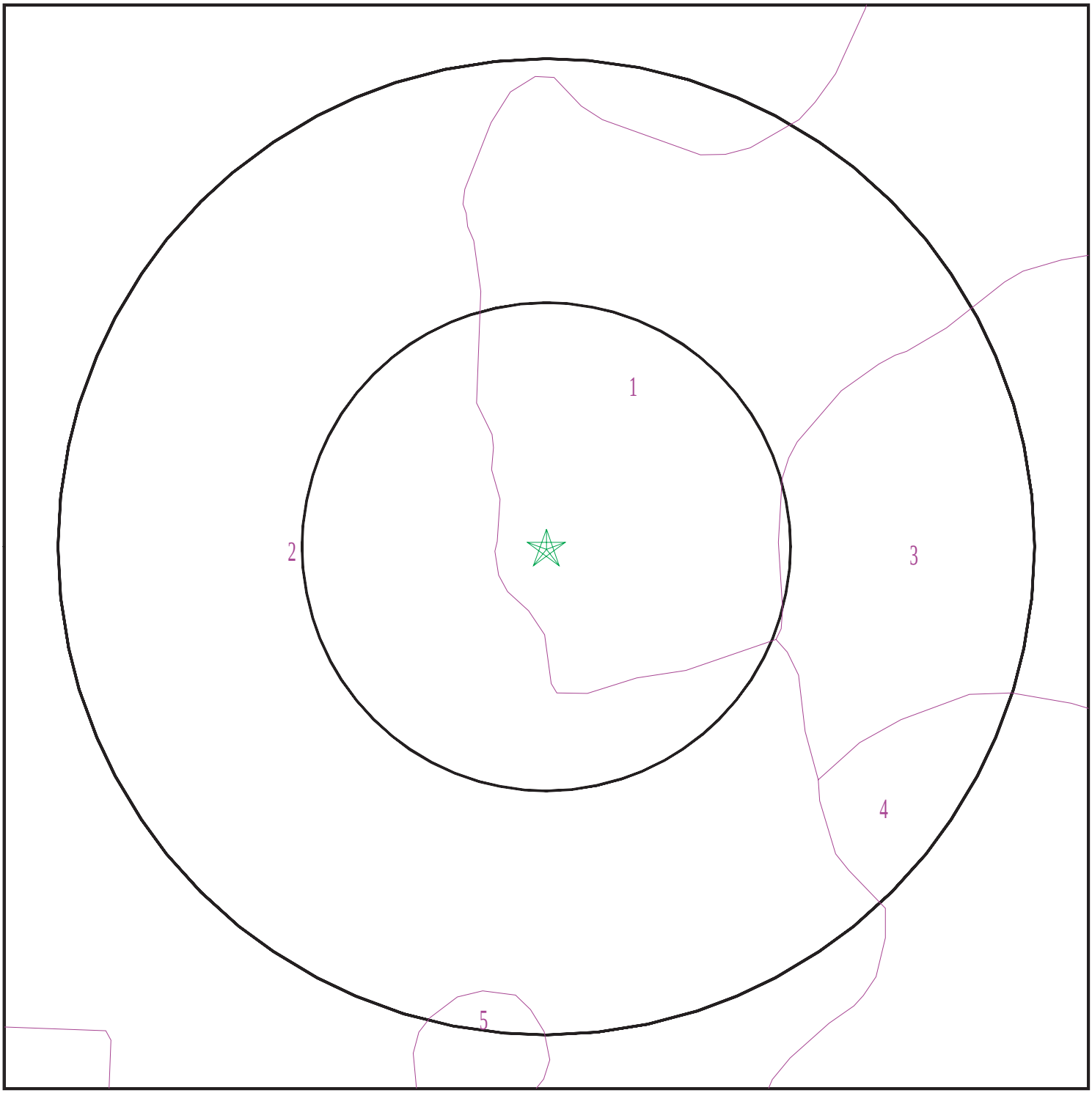
Era:	Cenozoic
System:	Tertiary
Series:	Pliocene
Code:	Tpc *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Continental Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 05504753.2r



SITE NAME:	Richmond Country Club	CLIENT:	Engeo Inc.
ADDRESS:	1 Markovich Lane San Pablo CA 94806	CONTACT:	Taunee Werts
		INQUIRY #:	05504753.2r
LAT/LONG:	37.986067 / 122.350701	DATE:	December 06, 2018 2:42 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: TIERRA

Soil Surface Texture: loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
2	25 inches	59 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
3	59 inches	70 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9

Soil Map ID: 2

Soil Component Name: TIERRA

Soil Surface Texture: loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
2	25 inches	59 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
3	59 inches	70 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: TIERRA

Soil Surface Texture: loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
2	25 inches	59 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
3	59 inches	70 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9

Soil Map ID: 4

Soil Component Name: CUT AND FILL LAND (fill part)

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	59 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1

Soil Map ID: 5

Soil Component Name: Water

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

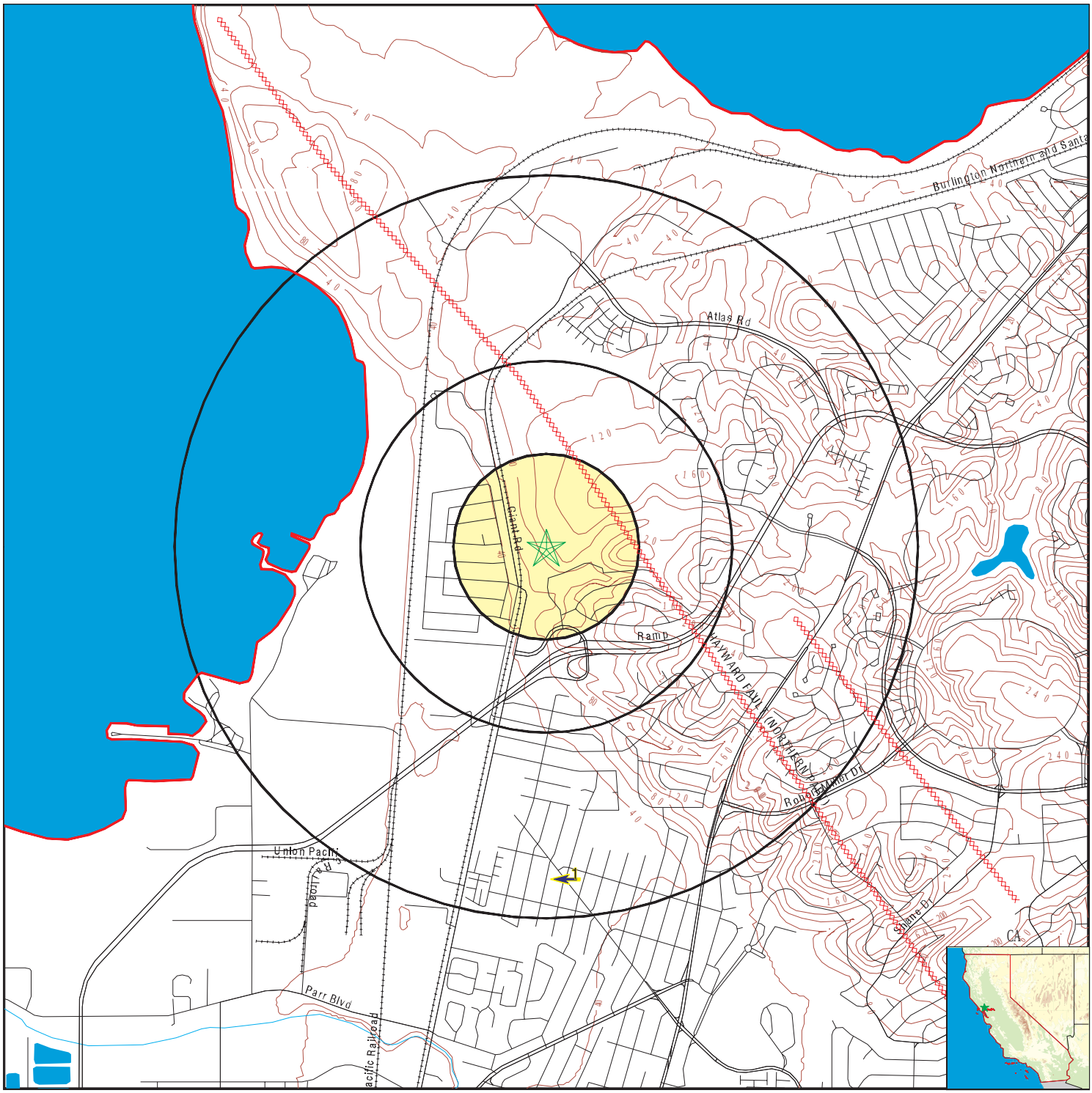
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 05504753.2r



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Richmond Country Club	CLIENT:	Engeo Inc.
ADDRESS:	1 Markovich Lane San Pablo CA 94806	CONTACT:	Taunee Werts
LAT/LONG:	37.986067 / 122.350701	INQUIRY #:	05504753.2r
		DATE:	December 06, 2018 2:41 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
1 **South** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	07-0127 W 8 12 Not Reported 06/05/1997	**AQUIFLOW**	**38525**
1G **South** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	07-0127 W 8 12 Not Reported 06/05/1997	**AQUIFLOW**	**38525**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
94806	28	0

Federal EPA Radon Zone for CONTRA COSTA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 94806

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.100 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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DRAFT

APPENDIX B

ENVIRONMENTAL DATA RESOURCES, INC.

Sanborn Map Report

Richmond Country Club

1 Markovich Lane

San Pablo, CA 94806

Inquiry Number: 5504753.3

December 07, 2018

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

12/07/18

Site Name:

Richmond Country Club
1 Markovich Lane
San Pablo, CA 94806
EDR Inquiry # 5504753.3

Client Name:

Engeo Inc.
2010 Crow Canyon Place
San Ramon, CA 94583
Contact: Taunee Werts

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Engeo Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # F865-400B-92C6

PO # 15693.000.000

Project Richmond Country Club

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: F865-400B-92C6

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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APPENDIX C

ENVIRONMENTAL DATA RESOURCES, INC.

Historical Topographic Map Report

Richmond Country Club

1 Markovich Lane

San Pablo, CA 94806

Inquiry Number: 5504753.4

December 06, 2018

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

12/06/18

Site Name:

Richmond Country Club
1 Markovich Lane
San Pablo, CA 94806
EDR Inquiry # 5504753.4

Client Name:

Engeo Inc.
2010 Crow Canyon Place
San Ramon, CA 94583
Contact: Taunee Werts

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Engeo Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 15693.000.000

Project: Richmond Country Club

Coordinates:

Latitude:	37.986067 37° 59' 10" North
Longitude:	-122.350701 -122° 21' 3" West
UTM Zone:	Zone 10 North
UTM X Meters:	557017.80
UTM Y Meters:	4204467.97
Elevation:	89.81' above sea level

Maps Provided:

2012	1947, 1948
1996	1914, 1915
1995	1899
1980	1895
1973	
1968	
1959	
1949	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Mare Island
2012
7.5-minute, 24000



Petaluma Point
2012
7.5-minute, 24000

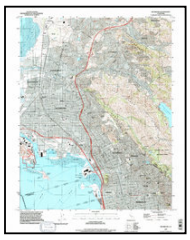


San Quentin
2012
7.5-minute, 24000

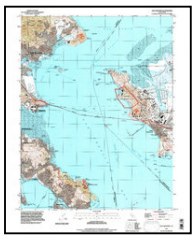


Richmond
2012
7.5-minute, 24000

1996 Source Sheets

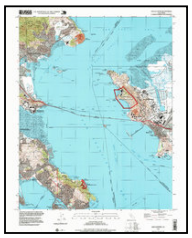


Richmond
1996
7.5-minute, 24000
Aerial Photo Revised 1993

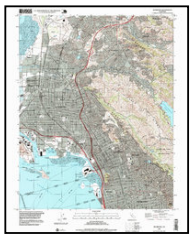


San Quentin
1996
7.5-minute, 24000
Aerial Photo Revised 1993

1995 Source Sheets



San Quentin
1995
7.5-minute, 24000
Aerial Photo Revised 1993



Richmond
1995
7.5-minute, 24000
Aerial Photo Revised 1993

1980 Source Sheets



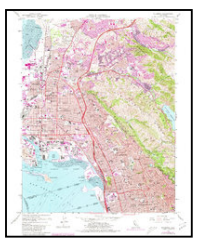
Mare Island
1980
7.5-minute, 24000
Aerial Photo Revised 1959



Petaluma Point
1980
7.5-minute, 24000
Aerial Photo Revised 1979



San Quentin
1980
7.5-minute, 24000
Aerial Photo Revised 1979



Richmond
1980
7.5-minute, 24000
Aerial Photo Revised 1979

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

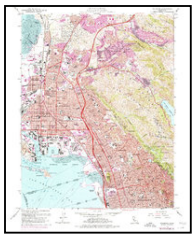
1973 Source Sheets



Petaluma Point
1973
7.5-minute, 24000
Aerial Photo Revised 1968



San Quentin
1973
7.5-minute, 24000
Aerial Photo Revised 1973



Richmond
1973
7.5-minute, 24000
Aerial Photo Revised 1973

1968 Source Sheets



Mare Island
1968
7.5-minute, 24000
Aerial Photo Revised 1968



Petaluma Point
1968
7.5-minute, 24000
Aerial Photo Revised 1968

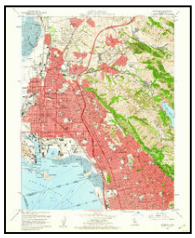


Richmond
1968
7.5-minute, 24000
Aerial Photo Revised 1968

1959 Source Sheets



Mare Island
1959
7.5-minute, 24000
Aerial Photo Revised 1958



Richmond
1959
7.5-minute, 24000
Aerial Photo Revised 1958

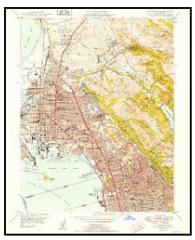


Petaluma Point
1959
7.5-minute, 24000
Aerial Photo Revised 1958



San Quentin
1959
7.5-minute, 24000
Aerial Photo Revised 1958

1949 Source Sheets



Richmond
1949
7.5-minute, 24000
Aerial Photo Revised 1946

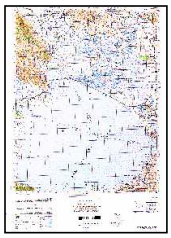


Mare Island
1949
7.5-minute, 24000
Aerial Photo Revised 1948

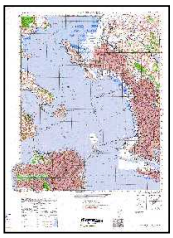
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1947, 1948 Source Sheets



MARE ISLAND
1947
15-minute, 50000



SAN FRANCISCO
1948
15-minute, 50000

1914, 1915 Source Sheets



MARE ISLAND
1914
15-minute, 62500



San Francisco
1915
15-minute, 62500

1899 Source Sheets



San Francisco
1899
15-minute, 62500

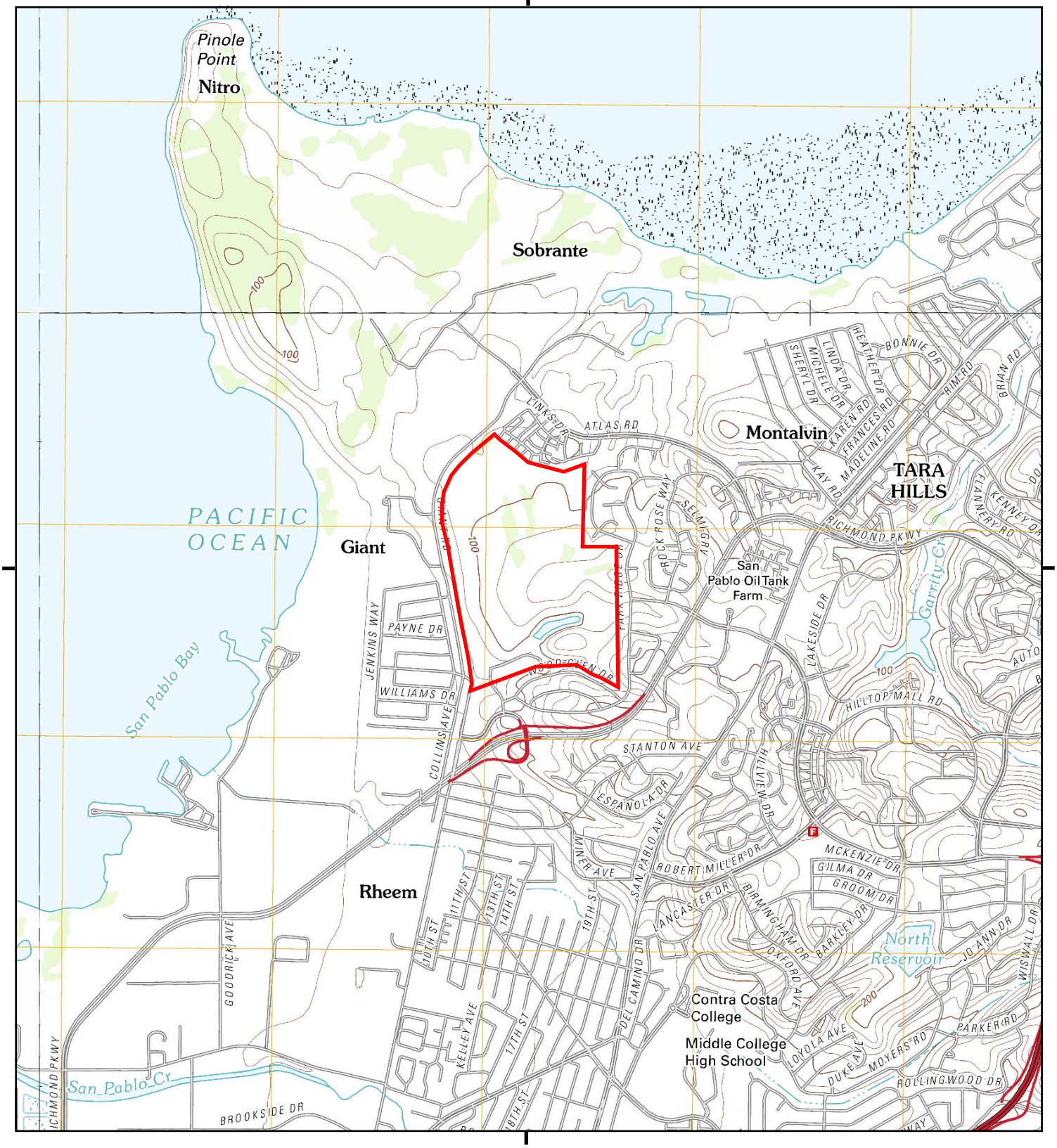
1895 Source Sheets



San Francisco
1895
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

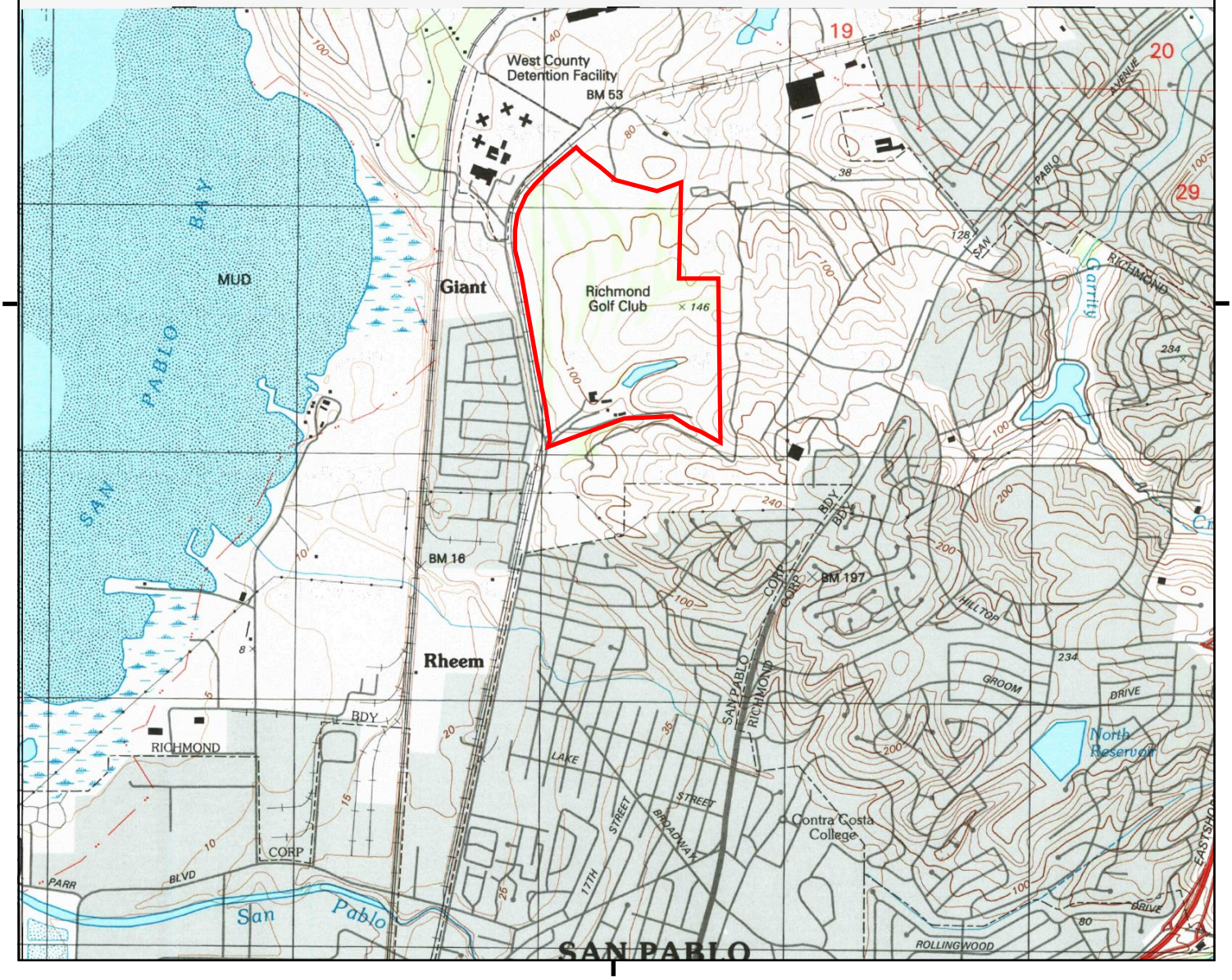
TP, Richmond, 2012, 7.5-minute
N, Mare Island, 2012, 7.5-minute
SW, San Quentin, 2012, 7.5-minute
NW, Petaluma Point, 2012, 7.5-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

N

Historical Topo Map

1996



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

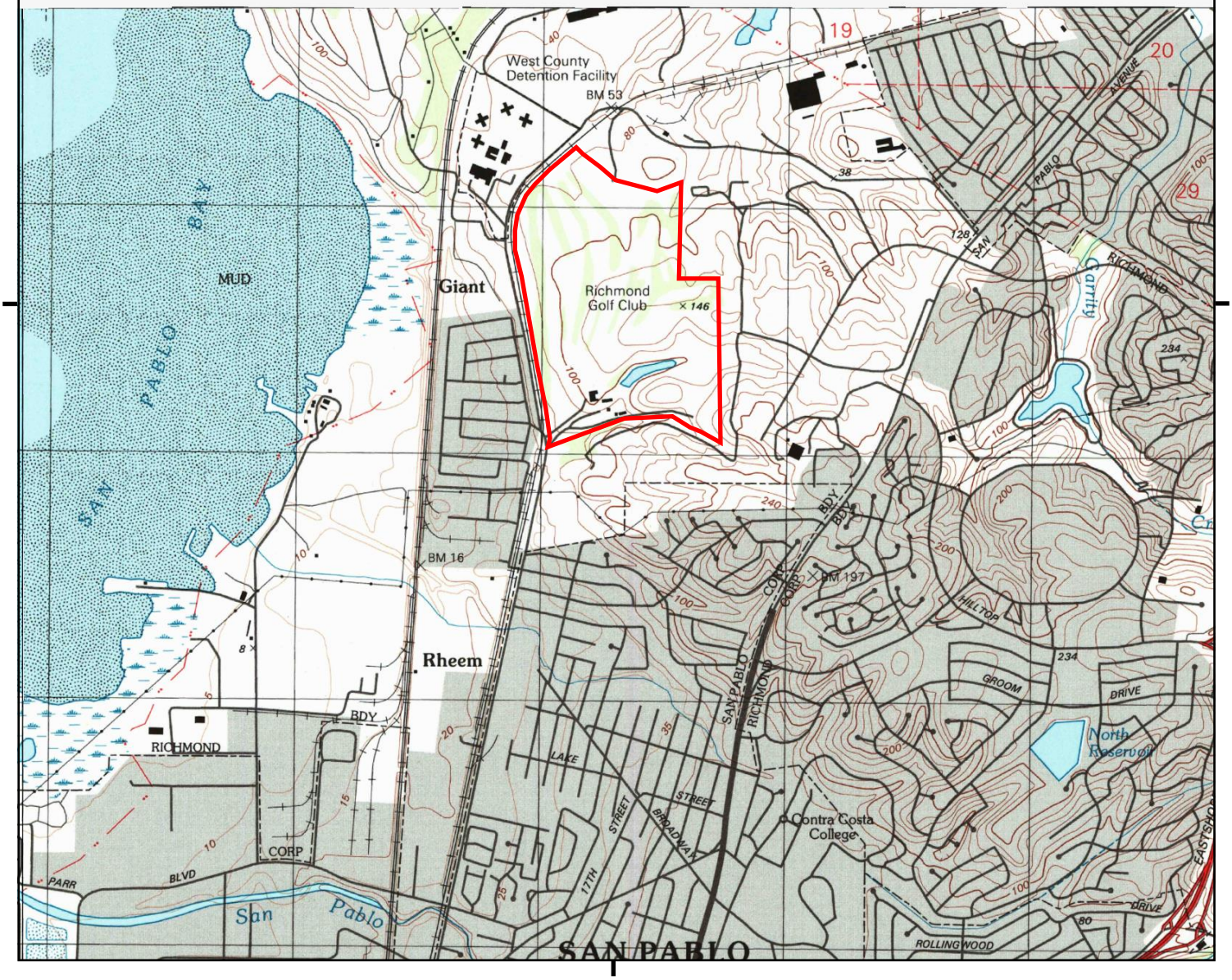
NW N NE
W E
SW S SE

TP, Richmond, 1996, 7.5-minute
SW, San Quentin, 1996, 7.5-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

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This report includes information from the following map sheet(s).

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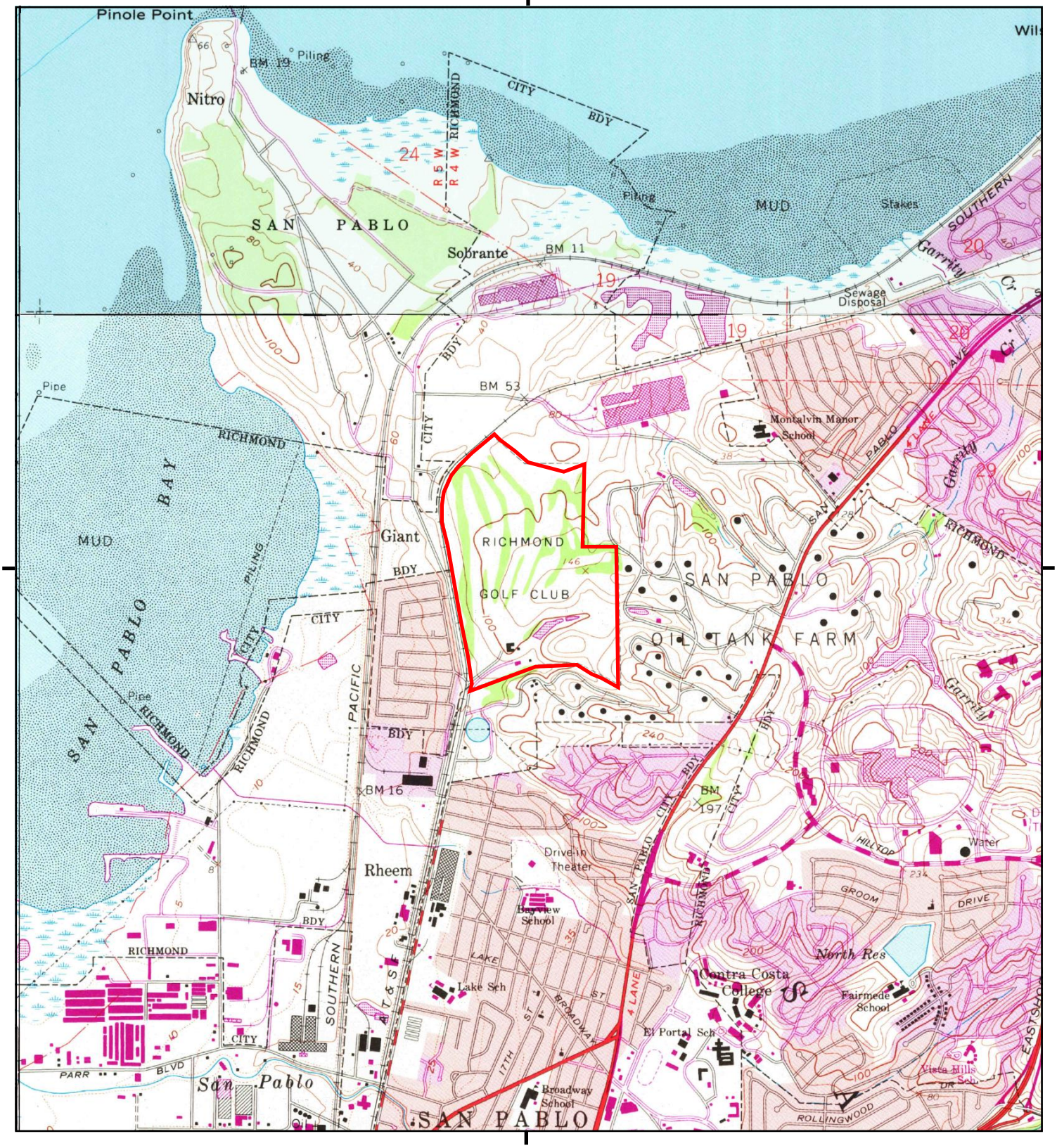
TP, Richmond, 1995, 7.5-minute
SW, San Quentin, 1995, 7.5-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

N

Historical Topo Map

1980



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

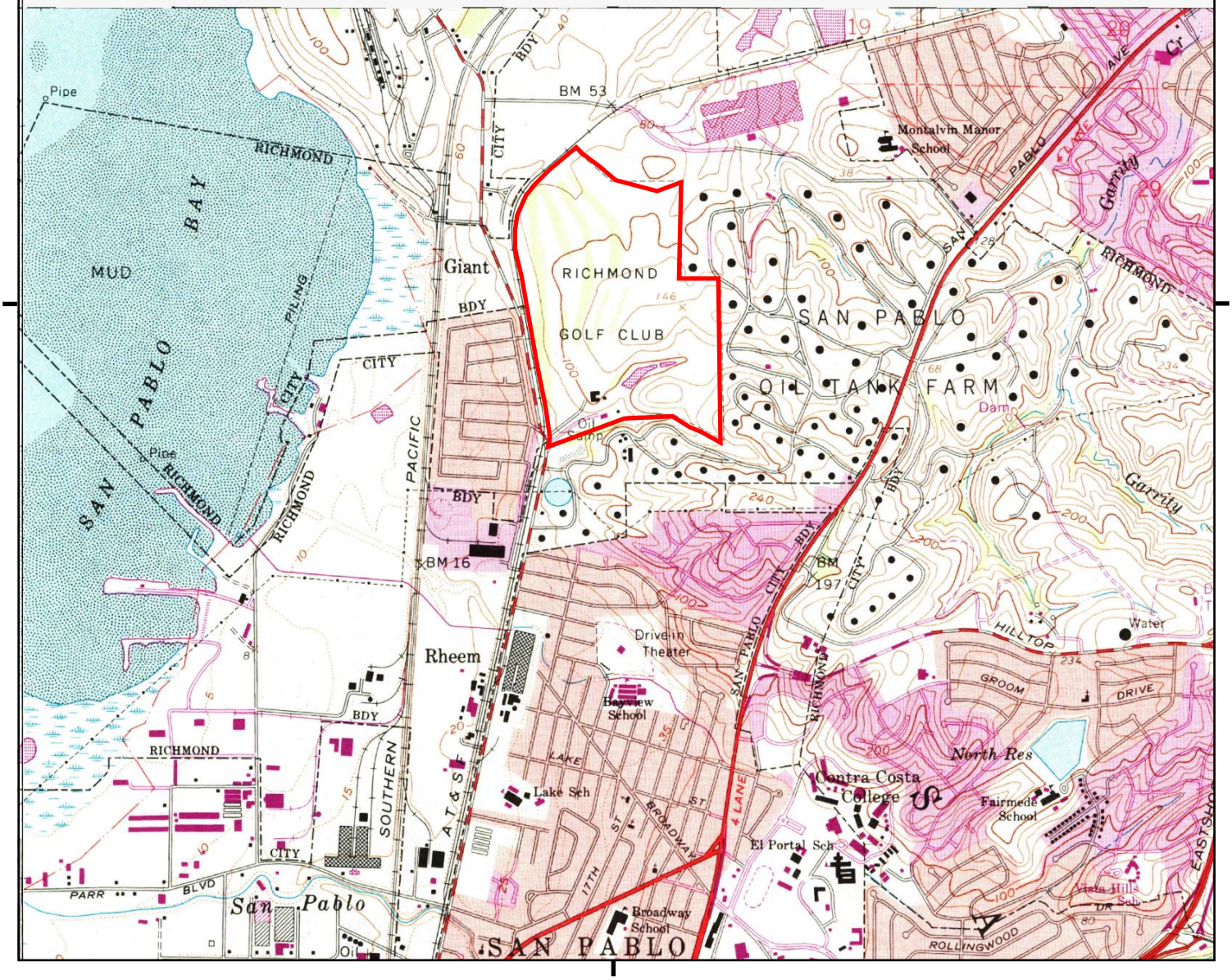
NW N NE
W E
SW S SE

TP, Richmond, 1980, 7.5-minute
N, Mare Island, 1980, 7.5-minute
SW, San Quentin, 1980, 7.5-minute
NW, Petaluma Point, 1980, 7.5-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

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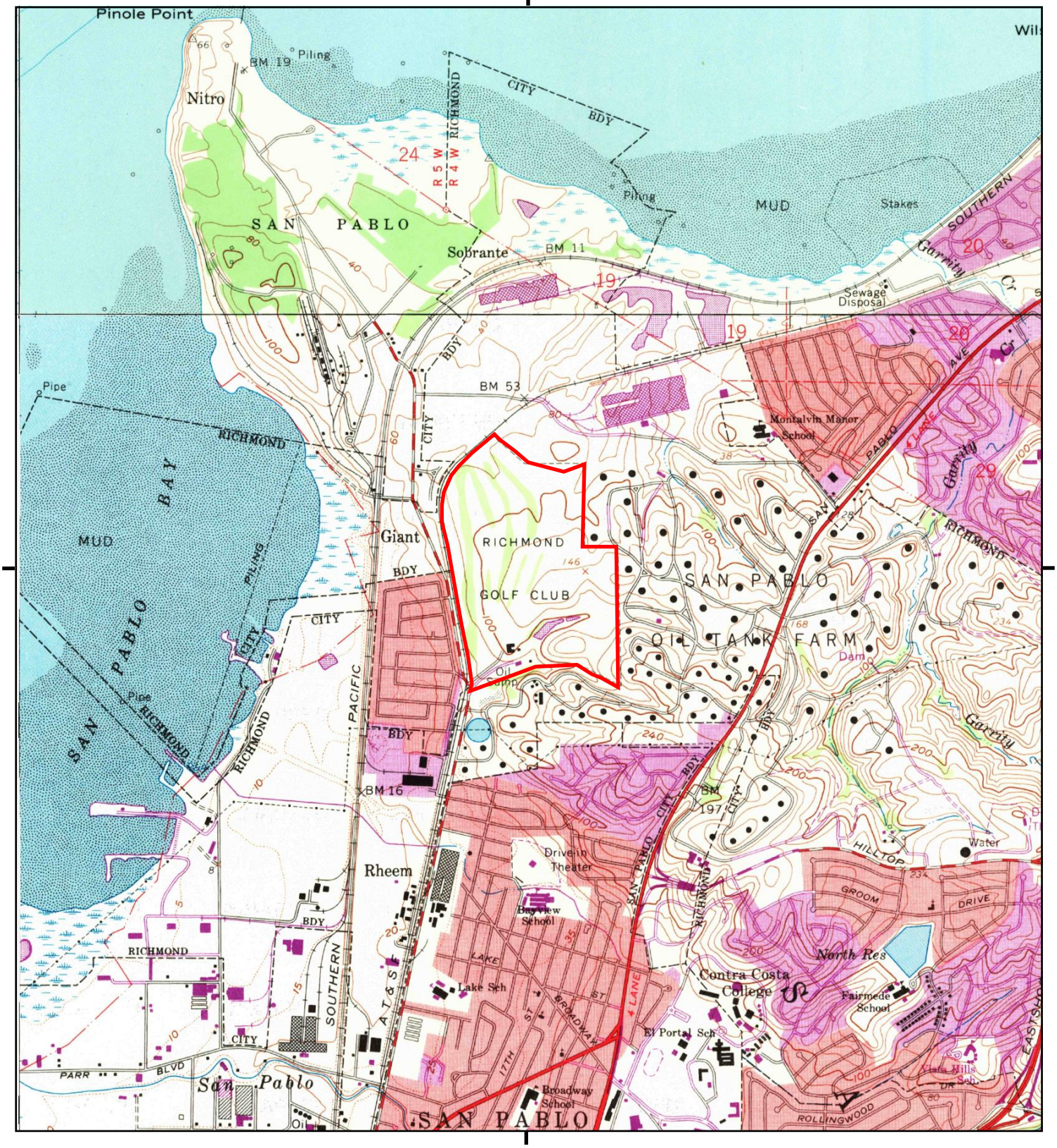
TP, Richmond, 1973, 7.5-minute
SW, San Quentin, 1973, 7.5-minute
NW, Petaluma Point, 1973, 7.5-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

N

Historical Topo Map

1968



This report includes information from the following map sheet(s).

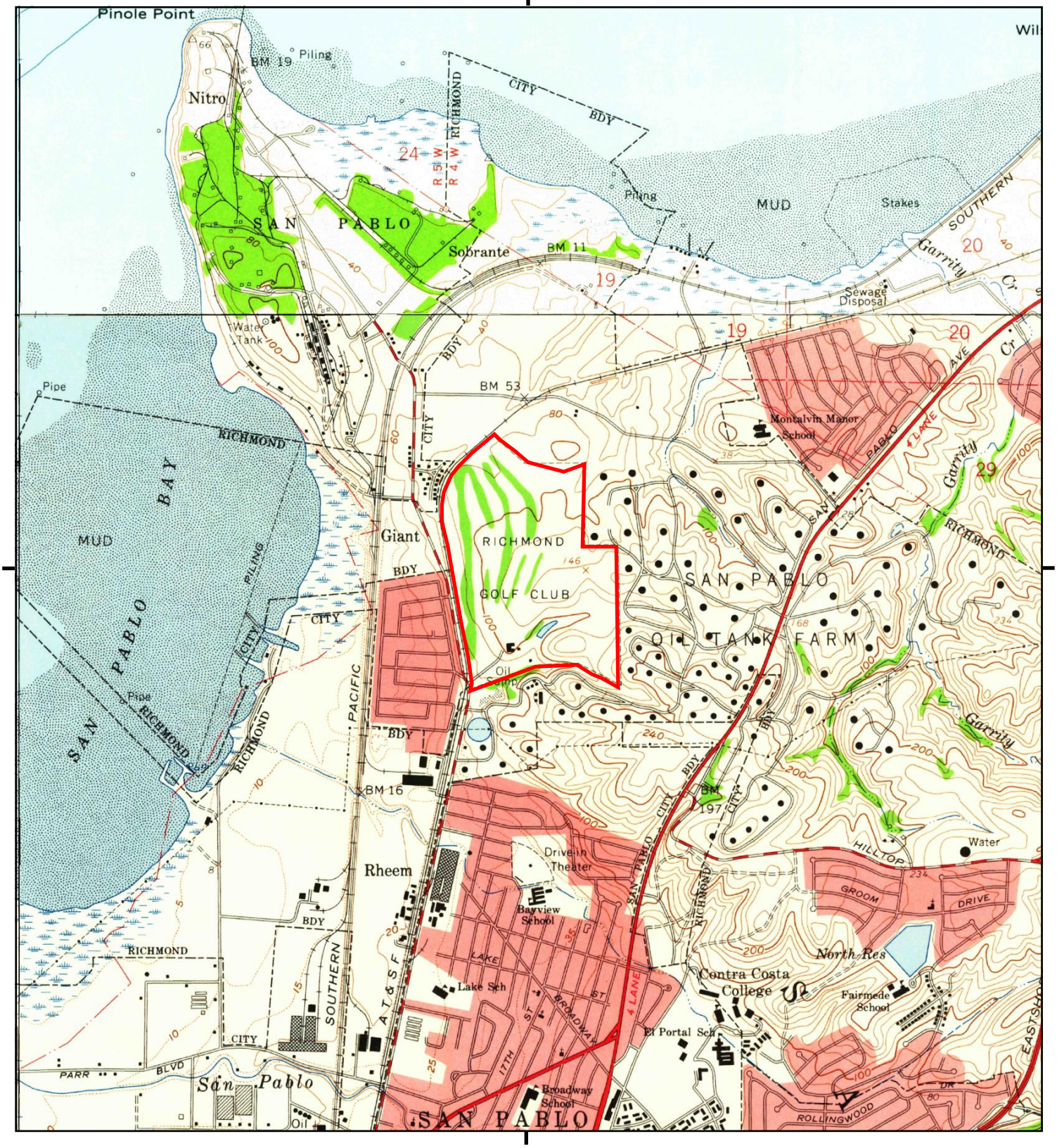
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Richmond, 1968, 7.5-minute
N, Mare Island, 1968, 7.5-minute
NW, Petaluma Point, 1968, 7.5-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

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SW S SE

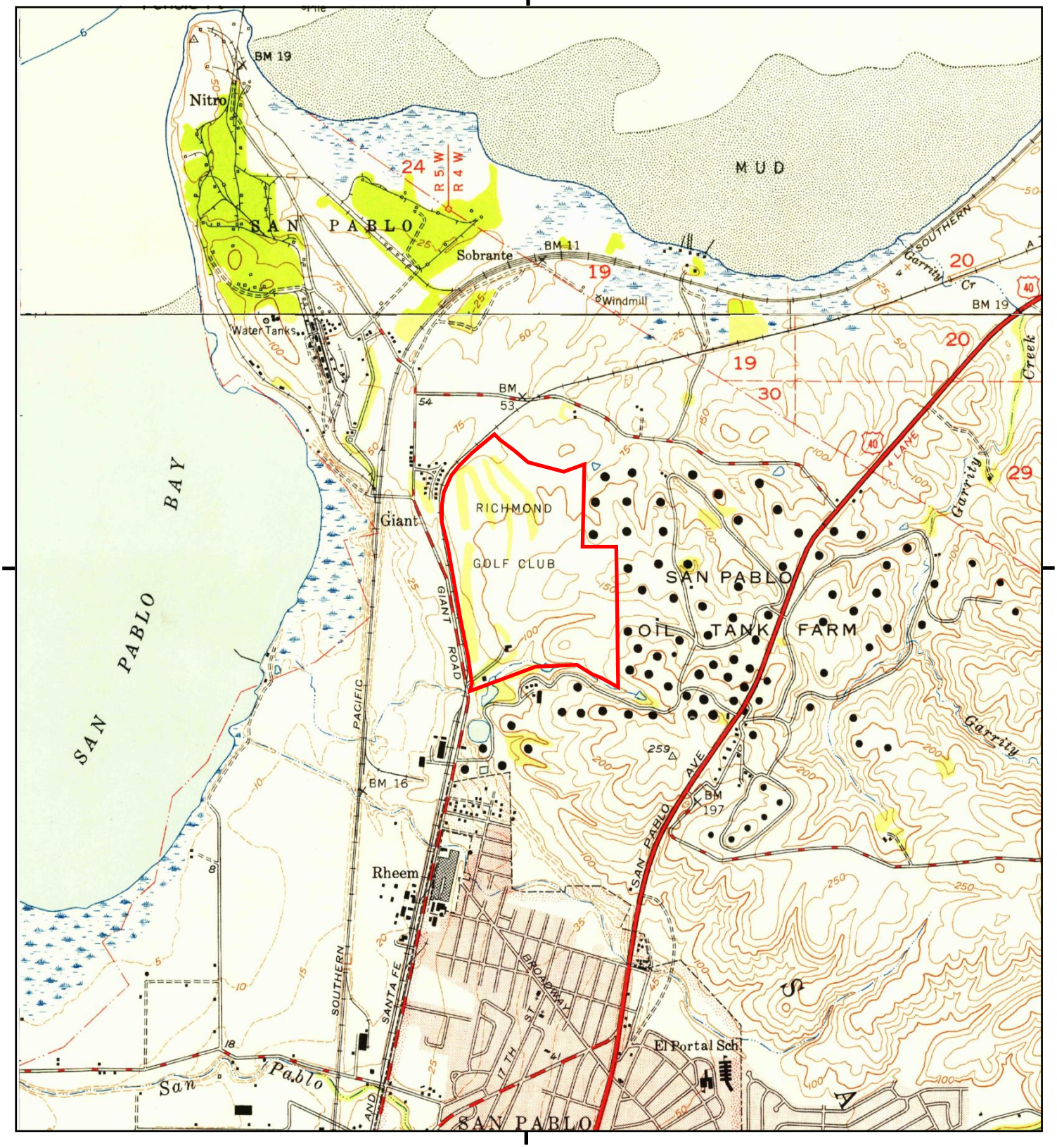
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N, Mare Island, 1959, 7.5-minute
SW, San Quentin, 1959, 7.5-minute
NW, Petaluma Point, 1959, 7.5-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

N

Historical Topo Map

1949



This report includes information from the following map sheet(s).

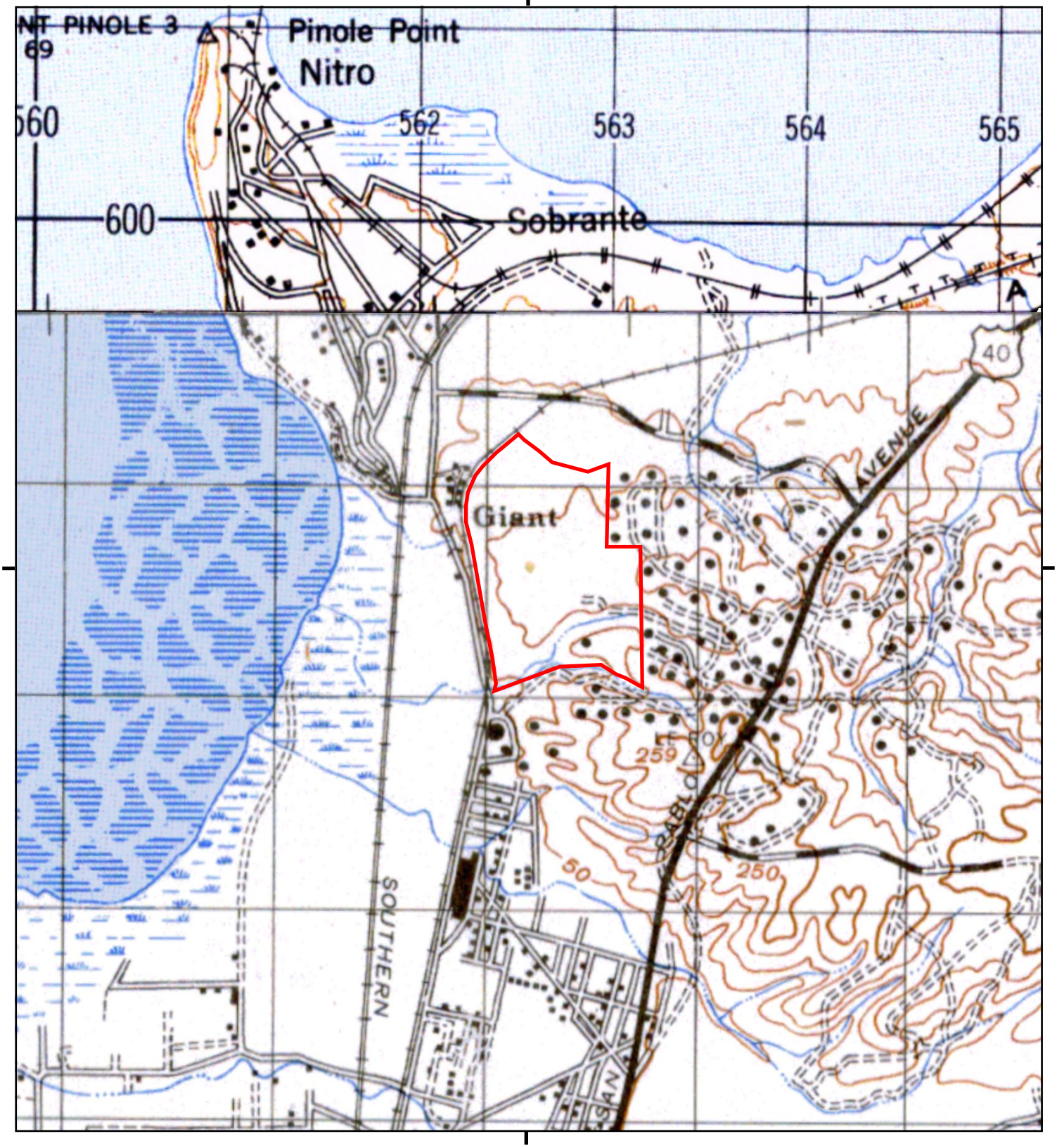
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Richmond, 1949, 7.5-minute
N, Mare Island, 1949, 7.5-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

N



This report includes information from the following map sheet(s).

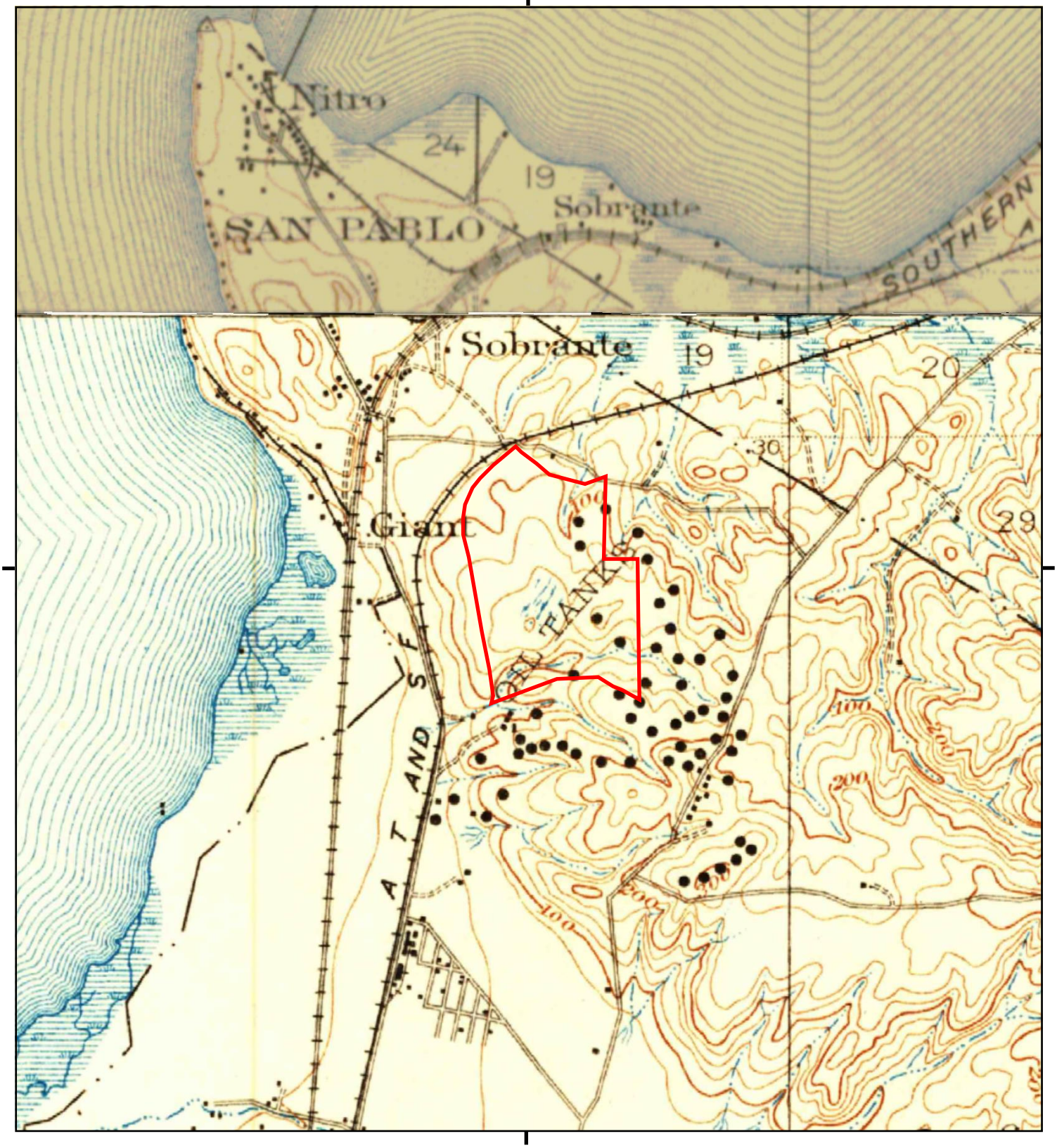
0 Miles 0.25 0.5 1 1.5

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SW S SE

TP, SAN FRANCISCO, 1948, 15-minute
N, MARE ISLAND, 1947, 15-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

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This report includes information from the following map sheet(s).

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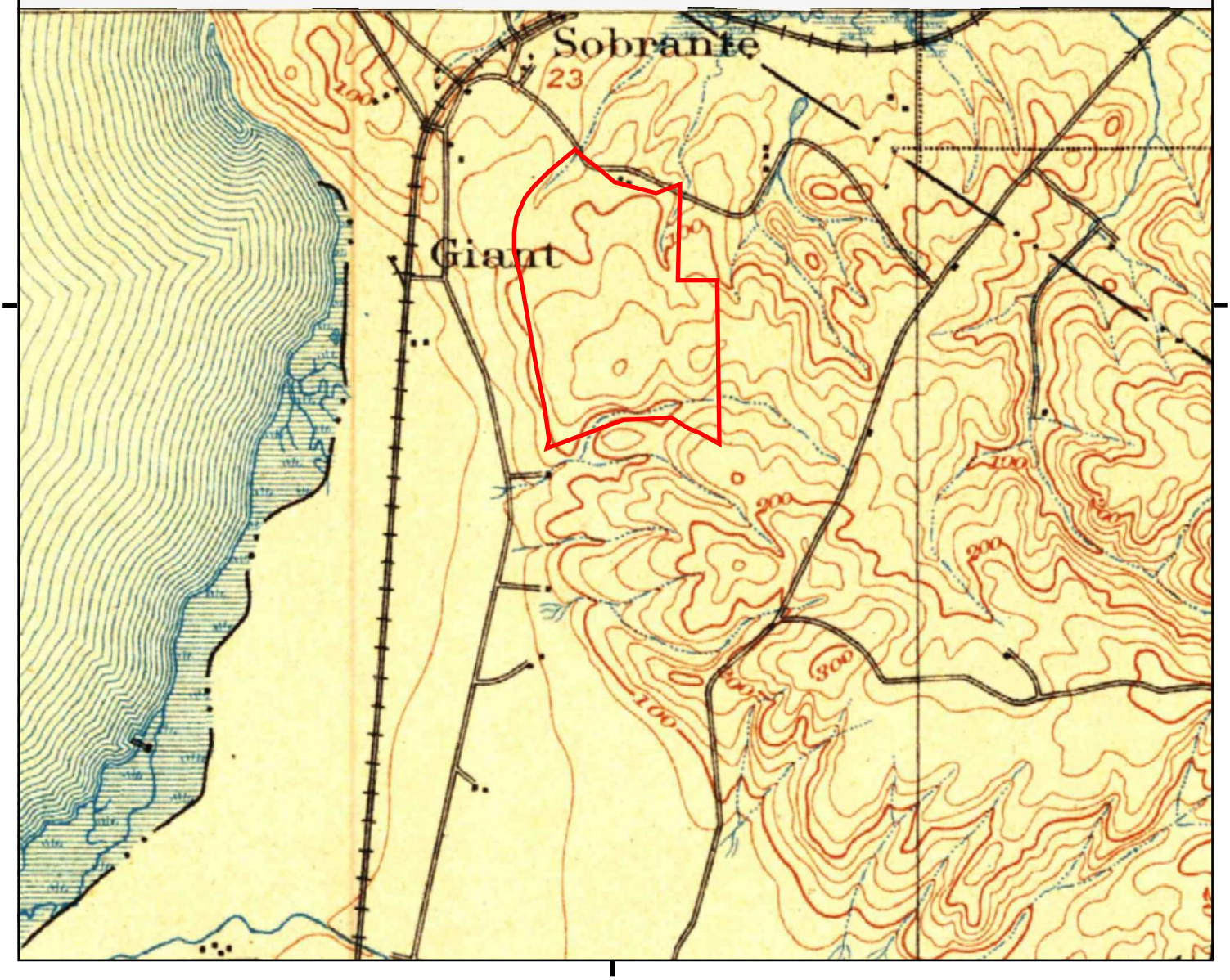
NW N NE
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SW S SE

TP, San Francisco, 1915, 15-minute
N, MARE ISLAND, 1914, 15-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

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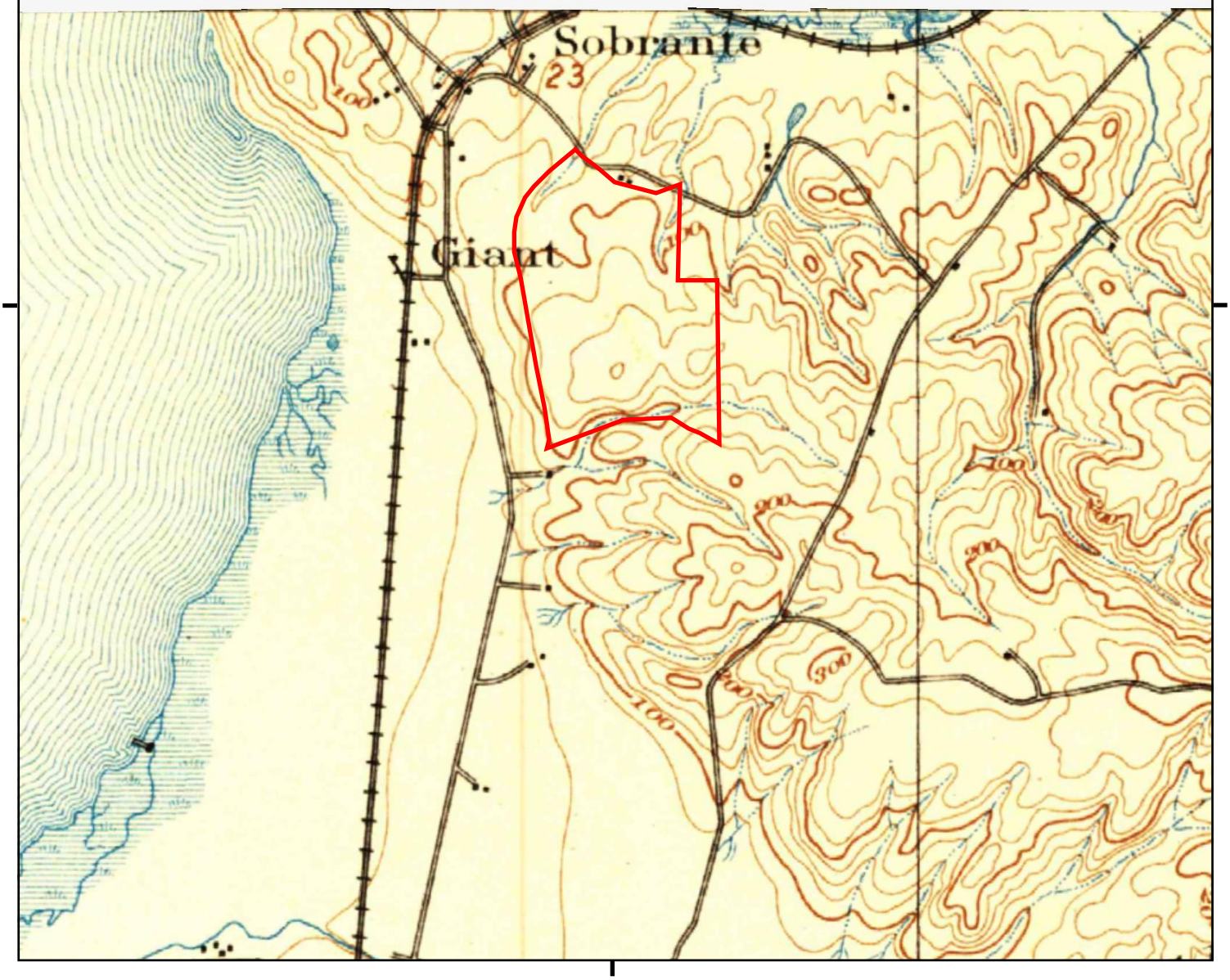
NW N NE
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TP, San Francisco, 1899, 15-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

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This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, San Francisco, 1895, 15-minute

SITE NAME: Richmond Country Club
ADDRESS: 1 Markovich Lane
San Pablo, CA 94806
CLIENT: Engeo Inc.

N



DRAFT

APPENDIX D

FIRST AMERICAN TITLE COMPANY

Preliminary Title Report

First American Title

First American Title Company

4750 Willow Road, Suite 100
Pleasanton, CA 94588

Escrow Officer: Michelle Chan
Phone: (925)738-4050
Fax No.: (866)648-7806
E-Mail: mlchan@firstam.com

Title Officer: Kimberly Speer
Phone: (925)356-7195
Fax No.: (714)689-4257
E-Mail: kspeer@firstam.com

E-Mail Loan Documents to: Lenders please contact the Escrow Officer for email address for sending loan documents.

Buyer: MLC Holdings, Inc.

PRELIMINARY REPORT

In response to the above referenced application for a policy of title insurance, this company hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a Policy or Policies of Title Insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an Exception below or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations of said Policy forms.

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said policy or policies are set forth in Exhibit A attached. *The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties*. Limitations on Covered Risks applicable to the CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Exhibit A. Copies of the policy forms should be read. They are available from the office which issued this report.

Please read the exceptions shown or referred to below and the exceptions and exclusions set forth in Exhibit A of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects, and encumbrances affecting title to the land.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

Dated as of October 23, 2018 at 7:30 A.M.

The form of Policy of title insurance contemplated by this report is:

ALTA Extended Loan Policy - 2006

ALTA Extended Owner Policy - 2006

A specific request should be made if another form or additional coverage is desired.

Title to said estate or interest at the date hereof is vested in:

RICHMOND GOLF & COUNTRY CLUB, A CALIFORNIA NON-PROFIT CORPORATION, AS TO PARCEL ONE AND RICHMOND COUNTRY CLUB, A CALIFORNIA CORPORATION, AS TO PARCEL TWO

The estate or interest in the land hereinafter described or referred to covered by this Report is:

A fee.

The Land referred to herein is described as follows:

(See attached Legal Description)

At the date hereof exceptions to coverage in addition to the printed Exceptions and Exclusions in said policy form would be as follows:

1. General and special taxes and assessments for the fiscal year 2018-2019.

First Installment:	$21,701.94, OPEN
Penalty:	$0.00
Second Installment:	$21,701.94, OPEN
Penalty:	$0.00
Tax Rate Area:	08-003
A. P. No.:	405-050-006-7

Affects: PORTION OF PARCEL ONE

2. General and special taxes and assessments for the fiscal year 2018-2019.

First Installment:	$11,855.78, OPEN
Penalty:	$0.00
Second Installment:	$11,855.78, OPEN
Penalty:	$0.00
Tax Rate Area:	08-008
A. P. No.:	405-050-019-0

Affects: PORTION OF PARCEL ONE

3. General and special taxes and assessments for the fiscal year 2018-2019.

First Installment:	$1,866.22, OPEN
Penalty:	$0.00
Second Installment:	$1,866.22, OPEN
Penalty:	$0.00
Tax Rate Area:	08-003
A. P. No.:	405-050-056-2

Affects: PARCEL TWO

4. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

5. THE INTEREST, CONVEYED TO THE SAN FRANCISCO AND SAN JOAQUIN VALLEY RAILWAY COMPANY, NOW THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY, BY THE FOLLOWING GRANTORS AND GRANTS, AS SUCH RIGHTS HAVE BEEN LOCATED AS THE RIGHT-OF-WAY ON THE RECORD OF SURVEY REFERRED TO HEREIN.

   A. LOUISE BARROILHET, RECORDED SEPTEMBER 17, 1898, IN BOOK 79 OF DEEDS, PAGE 305.

   B. MILFORD R. JOHNSTON, RECORDED MARCH 29, 1898, IN BOOK 78 OF DEEDS, PAGE 376.

   C. I.J. TRUMAN, RECORDED MARCH 29, 1898, IN BOOK 78 OF DEEDS, PAGE 382.

   D. GALETSA F. JOHNSTON, RECORDED MARCH 29, 1898, IN BOOK 78 OF DEEDS, PAGE 385.

   E. I.J. TRUMAN, RECORDED MARCH 29, 1898, IN BOOK 78 OF DEEDS, PAGE 379.

   F. EMMA S. MCPHERSON STEELE, ET AL., RECORDED NOVEMBER 19, 1898, IN BOOK 79 OF DEEDS, PAGE 637.

6. An easement for PIPE LINE(S) and incidental purposes, recorded FEBRUARY 06, 1968 as BOOK 5552, PAGE 219 of Official Records.

In Favor of:	STANDARD OIL COMPANY OF CALIFORNIA, A DELAWARE CORPORATION, ET AL
Affects:	STANDARD OIL COMPANY OF CALIFORNIA, A DELAWARE CORPORATION, ET AL

7. An easement for SANITARY SEWER and incidental purposes, recorded MAY 13, 1971 as BOOK 6380, PAGE 700 of Official Records.

In Favor of:	SAN PABLO SANITARY DISTRICT
Affects:	NORTHERLY AND WESTERLY PORTIONS OF SAID LAND

The location of the easement cannot be determined from record information.

SUBJECT TO THE TERMS, CONDITIONS AND PROVISIONS CONTAINED THEREIN.

Document(s) declaring modifications thereof recorded OCTOBER 03, 1972 as BOOK 6765, PAGE 539 of Official Records.

8. An easement for SANITARY SEWER and incidental purposes, recorded SEPTEMBER 15, 1977 as BOOK 8505, PAGE 167 of Official Records.
   In Favor of: SAN PABLO SANITARY DISTRICT
   Affects: A SOUTHERLY PORTION OF SAID LAND

9. MATTERS IN A DOCUMENT ENTITLED "SLOPE EASEMENT AGREEMENT", EXECUTED BY AND BETWEEN CHEVRON LAND AND DEVELOPMENT, A DELAWARE CORPORATION AND RICHMOND COUNTRY CLUB, A CALIFORNIA CORPORATION, RECORDED JULY 7, 1994 AS INSTRUMENT NO. 94-176135 OF OFFICIAL RECORDS, INCLUDING BUT NOT LIMITED TO COVENANTS, CONDITIONS, RESTRICTIONS, EASEMENTS, ASSESSMENTS, LIENS AND CHARGES.

10. An easement for INGRESS, EGRESS and incidental purposes, recorded JULY 07, 1994 as INSTRUMENT NO. 94-176136 of Official Records.
    In Favor of: CHEVRON LAND AND DEVELOPMENT COMPANY, A DELAWARE CORPORATION
    Affects: A SOUTHERLY PORTION OF SAID LAND

    The location of the easement cannot be determined from record information.

    SUBJECT TO THE TERMS, CONDITIONS AND PROVISIONS CONTAINED THEREIN.

    Document re-recorded JULY 08, 1994 as INSTRUMENT NO. 94-177271 of Official Records.

11. An easement for HIGHWAY and incidental purposes, recorded AUGUST 22, 1996 as INSTRUMENT NO. 96-157170 of Official Records.
    In Favor of: THE CITY OF RICHMOND
    Affects: A SOUTHWESTERLY PORTION OF SAID LAND

12. MATTERS IN A DOCUMENT ENTITLED "EASEMENT AGREEMENT", EXECUTED BY AND BETWEEN RICHMOND COUNTRY CLUB, A CALIFORNIA CORPORATION WHICH ACQUIRED TITLE AS RICHMOND GOLF AND COUNTRY CLUB, A CALIFORNIA NON-PROFIT CORPORATION AND SCS DEVELOPMENT COMPANY, A CALIFORNIA CORPORATION, RECORDED JULY 26, 1999 AS INSTRUMENT NO. 99-196413 OF OFFICIAL RECORDS, INCLUDING BUT NOT LIMITED TO COVENANTS, CONDITIONS, RESTRICTIONS, EASEMENTS, ASSESSMENTS, LIENS AND CHARGES.

13. An easement for STORM DRAINAGE FACILITIES and incidental purposes, recorded JULY 26, 1999 as INSTRUMENT NO. 99-196413 of Official Records.
    In Favor of: SCS DEVELOPMENT COMPANY, A CALIFORNIA CORPORATION
    Affects: A SOUTHERLY PORTION OF SAID LAND

14. MATTERS IN A DOCUMENT ENTITLED "NEGATIVE PLEDGE AGREEMENT", EXECUTED BY AND BETWEEN RICHMOND COUNTRY CLUB, A CALIFORNIA CORPORATION AND THE MECHANICS BANK, A CALIFORNIA BANKING CORPORATION, RECORDED JULY 11, 2003 AS INSTRUMENT NO. 2003-332053 OF OFFICIAL RECORDS, INCLUDING BUT NOT LIMITED TO COVENANTS, CONDITIONS, RESTRICTIONS, EASEMENTS, ASSESSMENTS, LIENS AND CHARGES.

AN EXTENSIVE SEARCH OF THE PUBLIC RECORD DISCLOSED THAT NO DEEDS OF TRUST OR MORTGAGES WERE RECORDED PRIOR TO, CONCURRENTLY OR AT ANY TIME FOLLOWING THE RECORDATION OF THE ABOVE "NEGATIVE PLEDGE AGREEMENT".

15. The terms and provisions contained in the document entitled "NEGATIVE PLEDGE AGREEMENT" recorded FEBRUARY 28, 2005 as INSTRUMENT NO. 2005-0067413 of Official Records.

    Affects: PARCEL TWO

16. The terms and provisions contained in the document entitled "RESOLUTION NO. 74-12" recorded NOVEMBER 01, 2012 as INSTRUMENT NO. 2012-0277957 of Official Records.

    Affects: PARCEL TWO

17. The terms and provisions contained in the document entitled "RESOLUTION NO. 49-13(A)" recorded JULY 18, 2013 as INSTRUMENT NO. 2013-0180173 of Official Records.

    Affects: PARCEL TWO

18. The terms and provisions contained in the document entitled "RESOLUTION NO. 55-14" recorded AUGUST 14, 2014 as INSTRUMENT NO. 2014-0136275 of Official Records.

    Affects: PARCEL TWO

19. The terms and provisions contained in the document entitled "RESOLUTION NO. 79-15" recorded NOVEMBER 12, 2015 as INSTRUMENT NO. 2015-0237394 of Official Records.

    Affects: PARCEL TWO

20. The terms and provisions contained in the document entitled "CITY COUNCIL RESOLUTION NO. 39-16" recorded JULY 26, 2016 as INSTRUMENT NO. 2016-0147870 of Official Records.

    Affects: PARCEL TWO

21. The terms and provisions contained in the document entitled "RESOLUTION NO. 69-17" recorded JULY 28, 2017 as INSTRUMENT NO. 2017-0136068 of Official Records.

    Affects: PARCEL TWO

22. A deed of trust to secure an original indebtedness of $1,375,000.00 recorded JUNE 15, 2018 as INSTRUMENT NO. 2018-0095552 OF OFFICIAL RECORDS.

Dated:	JUNE 14, 2018
Trustor:	RICHMOND COUNTRY CLUB
Trustee:	DAVID M. BOTT
Beneficiary:	RCC FINANCE, LLC

Notes:
a. If this deed of trust is to be eliminated in the policy or policies contemplated by this report/commitment, we will require all of the following prior to the recordation of any documents or the issuance of any policy of title insurance:
i. Original note and deed of trust.
ii. Payoff demand statement signed by all present beneficiaries.
iii. Request for reconveyance signed by all present beneficiaries.
b. If the payoff demand statement or the request for reconveyance is to be signed by a servicer, we will also require a full copy of the loan servicing agreement executed by all present beneficiaries.
c. If any of the beneficial interest is presently held by trustees under a trust agreement, we will require a certification pursuant to Section 18100.5 of the California Probate Code in a form satisfactory to the Company

23. The terms and provisions contained in the document entitled "RESOLUTION NO. 45-18" recorded July 20, 2018 as INSTRUMENT NO. 2018-0116443 of Official Records.

Affects: PARCEL TWO

24. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

25. Rights of the public in and to that portion of the land lying within any Road, Street, Alley or Highway.

26. Water rights, claims or title to water, whether or not shown by the public records.

27. Rights of parties in possession.

28. Any facts, rights, interests or claims which would be disclosed by a correct ALTA/NSPS survey.

Prior to the issuance of any policy of title insurance, the Company will require:

29. With respect to RICHMOND GOLF & COUNTRY CLUB, A CALIFORNIA NON-PROFIT CORPORATION AND RICHMOND COUNTRY CLUB, a California corporation:
a. A certificate of good standing of recent date issued by the Secretary of State of the corporation's state of domicile.
b. A certified copy of a resolution of the Board of Directors authorizing the contemplated transaction and designating which corporate officers shall have the power to execute on behalf of the corporation.
c. Other requirements which the Company may impose following its review of the material required herein and other information which the Company may require.

30. An ALTA/NSPS survey of recent date which complies with the current minimum standard detail requirements for ALTA/NSPS land title surveys.

INFORMATIONAL NOTES

Note: The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than the certain dollar amount set forth in any applicable arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. If you desire to review the terms of the policy, including any arbitration clause that may be included, contact the office that issued this Commitment or Report to obtain a sample of the policy jacket for the policy that is to be issued in connection with your transaction.

1. According to the latest available equalized assessment roll in the office of the county tax assessor, there is located on the land a(n) COMMERCIAL STRUCTURE known as 3900 GIANT ROAD, RICHMOND, CALIFORNIA.

   Affects: PORTION OF PARCEL ONE (APN: 405-050-006-7)

2. The property covered by this report is vacant land.

   Affects: PORTION OF PARCEL ONE (APN: 405-050-019-0) AND PARCEL TWO

3. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

The map attached, if any, may or may not be a survey of the land depicted hereon. First American expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

LEGAL DESCRIPTION

Real property in the City of Richmond , County of Contra Costa, State of California, described as follows:

PARCEL ONE:

A PORTION OF THAT CERTAIN PARCEL OF LAND IN THE CITY OF RICHMOND, COUNTY OF CONTRA COSTA, SHOWN AS PARCEL 2 (TWO) ON THE RECORD OF SURVEY FILED DECEMBER 30, 1968, IN MAP BOOK 51 OF LICENSED SURVEYORS MAPS, PAGES 31 THROUGH 34, IN THE OFFICE OF THE COUNTY RECORDER OF CONTRA COSTA COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE MOST SOUTHERLY CORNER OF SAID PARCEL AS SHOWN ON SAID RECORD OF SURVEY, SAID POINT ALSO BEING THE ANGLE POINT MADE BY THE TWO COURSES AND DISTANCES SHOWN ON SAID SURVEY AS SOUTH 00° 19' 00" WEST 1,251.99 FEET AND NORTH 61° 19' 41" WEST 735.43 FEET; RUNNING THENCE ALONG THE SOUTHERLY LINE OF SAID SURVEY THE FOLLOWING THREE COURSES; NORTH 61° 19' 41" WEST 735.43 FEET; SOUTH 89° 14' 09" WEST 633.25 FEET; SOUTH 71° 05' 26" WEST 1,137.34 FEET TO THE SOUTHWEST CORNER OF SAID SURVEY; THENCE ALONG THE GENERAL WESTERN LINE OF SAID SURVEY NORTH 9° 20' 29" WEST 7.04 FEET; THENCE LEAVING SAID GENERAL WESTERN LINE, AND ALONG THE EASTERLY LINE OF THE RIGHT OF WAY OF THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY, THE FOLLOWING THIRTY-FOUR COURSES: NORTHERLY ALONG THE ARC OF A CURVE TO THE LEFT WITH A RADIUS OF 1,551.38 FEET, THROUGH A CENTRAL ANGLE OF 12° 24' 12", AN ARC LENGTH OF 335.84 FEET; NORTH 3° 07' 16" WEST 37.13 FEET; NORTH 4° 22' 14" WEST 37.02 FEET; NORTH 5° 28' 21" WEST 36.90 FEET; NORTH 6° 26' 00" WEST 36.78 FEET; NORTH 7° 15' 26" WEST 36.66 FEET; NORTH 7° 56' 39" WEST 36.54 FEET; NORTH 8° 29' 42" WEST 36.42 FEET; NORTH 8° 54' 29" WEST 36.30 FEET; NORTH 9° 10' 47" WEST 36.18 FEET; NORTH 9° 19' 07" WEST 36.06 FEET; NORTH 9° 20' 29" WEST 1,802.42 FEET; NORTH 9° 18' 31" WEST 35.91 FEET; NORTH 9° 06' 33" WEST 35.74 FEET; NORTH 8° 42' 37" WEST 35.56 FEET; NORTH 8° 06' 42" WEST 35.39 FEET; NORTH 7° 19' 05" WEST 35.22 FEET; NORTH 6° 19' 14" WEST 35.04 FEET; NORTH 5° 07' 36" WEST 34.87 FEET; NORTH 3° 43' 47" WEST 34.69 FEET; NORTH 2° 08' 17" WEST 34.52 FEET; NORTH 0° 20' 01" WEST 34.34 FEET; NORTHEASTERLY ON THE ARC OF A CURVE TO THE RIGHT WITH A RADIUS OF 985.81 FEET THROUGH A CENTRAL ANGLE OF 39° 26' 03", AN ARC LENGTH OF 678.49 FEET; NORTH 41° 00' 09" EAST 34.34 FEET; NORTH 42° 48' 30" EAST 34.52 FEET; NORTH 44° 24' 12" EAST 34.69 FEET; NORTH 45° 47' 54" EAST 34.87 FEET; NORTH 46° 59' 28" EAST 35.04 FEET; NORTH 47° 59' 20" EAST 35.22 FEET; NORTH 48° 47' 06" EAST 35.39 FEET; NORTH 49° 22' 56" EAST 35.56 FEET; NORTH 49° 46' 53" EAST 35.74 FEET; NORTH 49° 58' 44" EAST 35.91 FEET; NORTH 50° 00' 46" EAST 450.37 FEET; THENCE LEAVING SAID EASTERLY LINE OF SAID RIGHT OF WAY SOUTH 51° 43' 00" EAST 393.69 FEET; THENCE SOUTH 47° 05' 00" EAST 285.63 FEET; THENCE SOUTH 75° 47' 30" EAST 584.45 FEET; THENCE NORTH 70° 43' 00" EAST 344.83 FEET TO THE GENERAL EASTERLY LINE OF SAID SURVEY; THENCE ALONG SAID GENERAL EASTERLY LINE THE FOLLOWING FOUR COURSES: SOUTH 2° 30' 28" WEST 1,303.85 FEET; SOUTH 88° 35' 20" EAST 534.77 FEET; SOUTH 00° 16' 35" WEST 925.48 FEET; SOUTH 00° 19' 00" WEST 1,251.99 FEET, TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM:

THE RIGHTS RESERVED IN THE DEED FROM BETHLEHEM STEEL CORPORATION, RECORDED JULY 17, 1974 IN BOOK 7275, OFFICIAL RECORDS, PAGE 112, AS FOLLOWS:

"EXCEPTING AND RESERVING FROM TO THE GRANTOR, ITS SUCCESSORS AND ASSIGNS, ALL OIL, ASPHALTUM, PETROLEUM, NATURAL GAS, AND OTHER HYDROCARBON SUBSTANCES IN OR UNDER THE ABOVE-DESCRIBED LANDS AND BEING AT A VERTICAL DEPTH OF FIVE HUNDRED (500) OR MORE FEET BELOW THE PRESENT NATURAL SURFACE OF THE GROUND, BUT WITHOUT RIGHT OF ENTRY ON THE SURFACE OF THE ABOVE-DESCRIBED LANDS OR WITHIN FIVE HUNDRED (500) FEET BELOW SAID

SURFACE EXCEPT AS PROVIDED HEREINBELOW.

FURTHER EXCEPTING AND RESERVING FROM TO THE GRANTOR, ITS SUCCESSORS AND ASSIGNS, THE RIGHT, AND THE RIGHT TO PERMIT OTHERS, TO INJECT WITHIN THE ABOVE-DESCRIBED LANDS FOR THE PURPOSE OF STORAGE WITHIN THE ABOVE-DESCRIBED LANDS AND OTHER LANDS ANY QUANTITY OF NATURAL GAS BY PUMPING OR OTHERWISE, AND TO STORE SUCH NATURAL GAS WITHIN ANY OR ALL FORMATIONS IN OR UNDER THE ABOVE-DESCRIBED LANDS, AND TO WITHDRAW THE SAME FROM THE ABOVE-DESCRIBED LANDS BY PUMPING OR OTHERWISE; PROVIDED, HOWEVER, THAT SUCH INJECTIONS AND WITHDRAWAL SHALL NOT TAKE PLACE FROM THE PRESENT NATURAL SURFACE OF THE ABOVE-DESCRIBED LANDS OR WITHIN FIVE HUNDRED (500) FEET BELOW SAID SURFACE EXCEPT AS PROVIDED HEREINBELOW.

FURTHER EXCEPTING AND RESERVING FROM TO THE GRANTOR, ITS SUCCESSORS AND ASSIGNS, THE RIGHT, AND THE RIGHT TO PERMIT OTHERS TO PROSPECT, EXPLORE, DRILL AND OPERATE FOR OIL, ASPHALTUM, PETROLEUM, NATURAL GAS AND OTHER HYDROCARBON SUBSTANCES AND TO PRODUCE, TAKE, TREAT, STORE, REMOVE AND TO DISPOSE OF SAID SUBSTANCES AND TO INJECT INTO THE ABOVE-DESCRIBED LANDS GAS, WATER, AND OTHER SUBSTANCES FOR THE PURPOSE OF PRESSURE MAINTENANCE OR SECONDARY RECOVERY OF OIL, ASPHALTUM, PETROLEUM, NATURAL GAS, AND OTHER HYDROCARBON SUBSTANCES, AND THE RIGHT TO CONDUCT SUCH SECONDARY RECOVERY OPERATIONS; PROVIDED, HOWEVER, THAT NONE OF SUCH RIGHTS SHALL BE EXERCISED FROM THE PRESENT NATURAL SURFACE OF THE ABOVE-DESCRIBED LANDS OR WITHIN FIVE HUNDRED (500) FEET BELOW SAID SURFACE".

PARCEL TWO:

A PORTION OF PARCEL 1, AS SHOWN ON THAT CERTAIN PARCEL MAP FILED IN THE OFFICE OF THE RECORDER OF THE COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA ON JUNE 15, 1992 IN BOOK 158 OF PARCEL MAPS AT PAGE 30, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT AT THE NORTHERLY TERMINUS AT THAT COURSE DESCRIBED AS "NORTH 71º05’33" EAST 349.96 FEET" IN THE STREETS AND HIGHWAY EASEMENT GRANTED BY CHEVRON LAND AND DEVELOPMENT TO THE CITY OF RICHMOND. RECORDED SEPTEMBER 21, 1993 IN BOOK 18963, OF THE OFFICIAL RECORDS OF CONTRA COSTA COUNTY AT PAGE 434; THENCE SOUTHEASTERLY ALONG THE BOUNDARY OF SAID CITY OF RICHMOND PARCEL ALONG THE ARC OF A CURVE WHOSE CENTER BEARS NORTH 71º07’00" EAST, HAVING A RADIUS OF 539.96 FEET, THROUGH A CENTRAL ANGLE OF 33º08'16", AN ARC LENGTH OF 312.29 FEET TO A POINT OF REVERSE CURVE;

THENCE ALONG SAID REVERSE CURVE, HAVING A RADIUS OF 185.00 FEET, THROUGH A CENTRAL ANGLE OF 04º25'27", AN ARC DISTANCE OF 14.29 FEET;

THENCE LEAVING SAID EASEMENT BOUNDARY NORTH 60º31'03" EAST 34.55 FEET;

THENCE ALONG THE ARC OF A CURVE WHOSE CENTER BEARS SOUTH 62º40'54" WEST, HAVING A RADIUS OF 420 FEET, THROUGH A CENTRAL ANGLE OF 21º13'30", AN ARC DISTANCE OF 155.59 FEET TO A POINT OF REVERSE CURVE;

THENCE ALONG SAID REVERSE CURVE, HAVING A RADIUS OF 348.85', THROUGH A CENTRAL ANGLE OF 22º48'34" AN ARC DISTANCE 138.88' TO A POINT HEREINAFTER KNOWN AS POINT "A";

THENCE NORTH 71º05'33" EAST 35.79 FEET;

THENCE NORTH 18º54'27" WEST 22.00 FEET TO THE NORTHERLY BOUNDARY OF PARCEL 1 AS SHOWN ON PARCEL MAP MS753-92, FILED JUNE 15, 1992, IN BOOK 158 OF PARCEL MAPS, CONTRA COSTA COUNTY AT PAGE 30;

THENCE ALONG SAID BOUNDARY, SOUTH 71º05'33" WEST 81.03 FEET TO THE POINT OF BEGINNING.

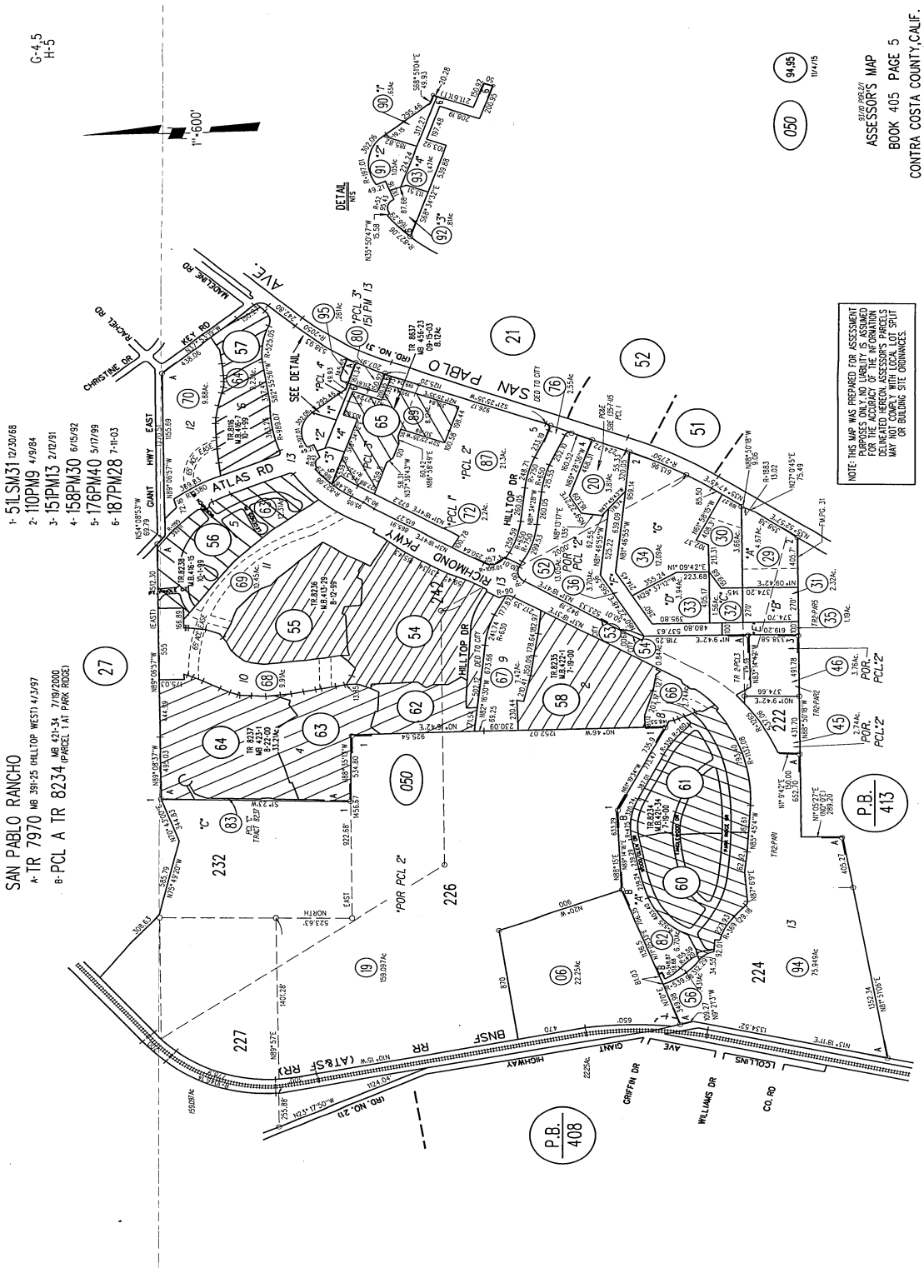
EXCEPTING THEREFROM, THE RIGHTS RESERVED BY CHEVRON LAND AND DEVELOPMENT COMPANY, A DELAWARE CORPORATION IN DEED RECORDED JULY 7, 1994 AS INSTRUMENT NO. 94-176136, AND RE-RECORDED JULY 8, 1994 AS INSTRUMENT NO. 94-177271 OF OFFICIAL RECORDS, AS FOLLOWS:

"EXCEPTING THEREFROM ALL OIL, GAS AND OTHER HYDROCARBONS, GEOTHERMAL RESOURCES, AND ALL OTHER MINERALS, WHETHER SIMILAR TO THOSE HEREIN SPECIFIED OR NOT, WITHIN OR THAT MAY BE PRODUCED FROM SAID PROPERTY.

FURTHER EXCEPTING AND RESERVING THEREFROM THE SOLE AND EXCLUSIVE RIGHT FROM TIME TO TIME TO DRILL AND MAINTAIN WELLS OR OTHER WORKS INTO OR THROUGH SAID PROPERTY AND THE ADJOINING STREETS, ROADS AND HIGHWAYS BELOW A DEPTH OF 500
FEET AND TO PRODUCE, INJECT, STORE AND REMOVE FROM AND THROUGH SUCH WELLS OR WORKS OIL, GAS, WATER AND OTHER SUBSTANCES OF WHATEVER NATURE, INCLUDING THE RIGHT TO PERFORM BELOW SAID DEPTH ANY AND ALL OPERATIONS DEEMED NECESSARY OR CONVENIENT FOR THE EXERCISE OF SUCH RIGHTS.

THE RIGHTS HEREIN ABOVE EXCEPTED AND RESERVED DO NOT INCLUDE AND DO NOT EXCEPT OR RESERVE ANY RIGHT TO USE THE SURFACE OF THE PROPERTY OR THE FIRST 500 FEET BELOW THE SURFACE OF THE PROPERTY OR TO CONDUCT ANY OPERATIONS THEREON OR THEREIN. UNLESS HEREINAFTER SPECIFICALLY EXCEPTED AND RESERVED, ALL RIGHTS AND INTERESTS IN THE SURFACE OF THE PROPERTY ARE HEREBY CONVEYED TO GRANTEE."

APN: 405-050-006-7 (Affects portion of Parcel One), 405-050-019-0 (Affects portion of Parcel One) and 405-050-056-2 (Affects Parcel Two)


ASSESSOR'S MAP
BOOK 405 PAGE 5
CONTRA COSTA COUNTY, CALIF.
SAN PABLO RANCHO
A- TR 7970 MB 391-25 (HILLTOP WEST) 4/13/97
B- PCL A TR 8234 MB 421-34 7/19/2000 (PARCEL 1 AT PARK RIDGE)
1- 51LSM31 12/30/68
2- 110PM9 4/9/84
3- 151PM13 2/12/91
4- 158PM30 6/15/92
5- 176PM40 5/17/99
6- 187PM28 7-11-03
NOTE: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY; NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE INFORMATION DELINEATED HEREON. ASSESSOR'S PARCELS MAY NOT CONFORM WITH LEGAL LOT SPLIT OR BUILDING SITE ORDINANCES.
SAN PABLO AVE.
ATLAS RD
HILLTOP DR
RICHMOND PKWY
KEY RD
MARLINE RD
RACHEL RD
CHRISTINE DR
GIANT HWY
BNSF RR
GIANT AVE
GRIFFIN DR
WILLIAMS DR
CO. RD
COLLINS
SEE DETAIL
DETAIL
1"=600'
P.B. 413
P.B. 408

NOTICE

Section 12413.1 of the California Insurance Code, effective January 1, 1990, requires that any title insurance company, underwritten title company, or controlled escrow company handling funds in an escrow or sub-escrow capacity, wait a specified number of days after depositing funds, before recording any documents in connection with the transaction or disbursing funds. This statute allows for funds deposited by wire transfer to be disbursed the same day as deposit. In the case of cashier's checks or certified checks, funds may be disbursed the next day after deposit. In order to avoid unnecessary delays of three to seven days, or more, please use wire transfer, cashier's checks, or certified checks whenever possible.

EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

CLTA STANDARD COVERAGE POLICY – 1990

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
   Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public, records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.

CLTA/ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE (12-02-13)

EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of those portions of any law or government regulation concerning:
   a. building;
   b. zoning;
   c. land use;

d. improvements on the Land;
e. land division; and
f. environmental protection.
This Exclusion does not limit the coverage described in Covered Risk 8.a., 14, 15, 16, 18, 19, 20, 23 or 27.

2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not limit the coverage described in Covered Risk 14 or 15.
3. The right to take the Land by condemning it. This Exclusion does not limit the coverage described in Covered Risk 17.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they are recorded in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they are recorded in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.e., 25, 26, 27 or 28.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This Exclusion does not limit the coverage described in Covered Risk 11 or 21.
7. The transfer of the Title to You is invalid as a preferential transfer or as a fraudulent transfer or conveyance under federal bankruptcy, state insolvency, or similar creditors' rights laws.
8. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
9. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

LIMITATIONS ON COVERED RISKS

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:
For Covered Risk 16, 18, 19, and 21 Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A.
The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

	Your Deductible Amount	Our Maximum Dollar Limit of Liability
Covered Risk 16:	1% of Policy Amount Shown in Schedule A or $2,500 (whichever is less)	$10,000
Covered Risk 18:	1% of Policy Amount Shown in Schedule A or $5,000 (whichever is less)	$25,000
Covered Risk 19:	1% of Policy Amount Shown in Schedule A or $5,000 (whichever is less)	$25,000
Covered Risk 21:	1% of Policy Amount Shown in Schedule A or $2,500 (whichever is less)	$5,000

2006 ALTA LOAN POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;
(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

[Except as provided in Schedule B - Part II,[t[or T]his policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

[PART I

[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.

PART II

In addition to the matters set forth in Part I of this Schedule, the Title is subject to the following matters, and the Company insures against loss or damage sustained in the event that they are not subordinate to the lien of the Insured Mortgage:]

2006 ALTA OWNER'S POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;
(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 or 10); or
(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
(a) a fraudulent conveyance or fraudulent transfer, or
(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:
[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.
7. [Variable exceptions such as taxes, easements, CC&R's, etc. shown here.]

ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (07-26-10)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

    (i) the occupancy, use, or enjoyment of the Land;
    (ii) the character, dimensions, or location of any improvement erected on the Land;
    (iii) the subdivision of land; or
    (iv) environmental protection;

    or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
    (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
(a) created, suffered, assumed, or agreed to by the Insured Claimant;
(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
(c) resulting in no loss or damage to the Insured Claimant;
(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the

Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.
9. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 27(b) of this policy.
10. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
11. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.



Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.
In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.
There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.
FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.
Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.
Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.
Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.
Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.
Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.



DRAFT

APPENDIX E

ENVIRONMENTAL DATA RESOURCES, INC.

Aerial Photo Decade Package

Richmond Country Club

1 Markovich Lane

San Pablo, CA 94806

Inquiry Number: 5504753.8

December 11, 2018

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

12/11/18

Site Name:

Richmond Country Club
1 Markovich Lane
San Pablo, CA 94806
EDR Inquiry # 5504753.8

Client Name:

Engeo Inc.
2010 Crow Canyon Place
San Ramon, CA 94583
Contact: Taunee Werts

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1998	1"=500'	Flight Date: August 29, 1998	USDA
1993	1"=500'	Acquisition Date: July 10, 1993	USGS/DOQQ
1982	1"=500'	Flight Date: July 08, 1982	USDA
1972	1"=500'	Flight Date: January 01, 1972	USGS
1968	1"=500'	Flight Date: April 20, 1968	USGS
1963	1"=500'	Flight Date: July 18, 1963	EDR Proprietary Aerial Viewpoint
1958	1"=500'	Flight Date: July 22, 1958	USGS
1950	1"=500'	Flight Date: May 10, 1950	USDA
1946	1"=500'	Flight Date: September 06, 1946	USGS
1939	1"=500'	Flight Date: August 04, 1939	USDA

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

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INQUIRY #: 5504753.8
YEAR: 2016
= 500'
N
EDR


INQUIRY #: 5504753.8
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 5504753.8
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 5504753.8
YEAR: 2005
= 500'
N
EDR


INQUIRY #: 5504753.8
YEAR: 1998
= 500'
N
EDR


INQUIRY #: 5504753.8
YEAR: 1993
= 500'
N
EDR


INQUIRY #: 5504753.8
YEAR: 1982
= 500'
N
EDR



INQUIRY #: 5504753.8

YEAR: 1972

= 500'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.


INQUIRY #: 5504753.8
YEAR: 1968
= 500'
N
EDR


INQUIRY #: 5504753.8
YEAR: 1963
= 500'
N
EDR


INQUIRY #: 5504753.8
YEAR: 1958
= 500'
N
EDR


INQUIRY #: 5504753.8
YEAR: 1950
= 500'
N
EDR



INQUIRY #: 5504753.8

YEAR: 1946

= 500'

N

EDR


INQUIRY #: 5504753.8
YEAR: 1939
= 500'
N
EDR



DRAFT

APPENDIX F

ENVIRONMENTAL DATA RESOURCES, INC.

City Directory

Richmond Country Club
1 Markovich Lane
San Pablo, CA 94806

Inquiry Number: 5504753.5
December 10, 2018

The EDR-City Directory Image Report

Environmental Data Resources Inc
6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

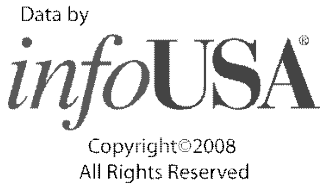
DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☑	EDR Digital Archive
2010	☑	☑	EDR Digital Archive
2005	☑	☑	EDR Digital Archive
2000	☐	☑	EDR Digital Archive
1995	☑	☑	EDR Digital Archive
1992	☐	☑	EDR Digital Archive
1985	☐	☐	Haines Criss-Cross Directory
1980	☐	☐	Haines Criss-Cross Directory
1975	☐	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

1 Markovich Lane
San Pablo, CA 94806

Year	*CD Image*	*Source*	
MARKOVICH LN			
2014	pg A2	EDR Digital Archive	
2010	pg A4	EDR Digital Archive	
2005	pg A6	EDR Digital Archive	
2000	-	EDR Digital Archive	Target and Adjoining not listed in Source
1995	pg A9	EDR Digital Archive	
1992	-	EDR Digital Archive	Target and Adjoining not listed in Source
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
GIANT HWY			
2014	pg. A1	EDR Digital Archive	
2010	pg. A3	EDR Digital Archive	
2005	pg. A5	EDR Digital Archive	
2000	pg. A7	EDR Digital Archive	
1995	pg. A8	EDR Digital Archive	
1992	pg. A10	EDR Digital Archive	
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

GIANT HWY 2014

5551 EAST BAY REGIONAL PARK DST
5555 CONTRA COSTA COUNTY OF
TCG PAYPHONE INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

MARKOVICH LN 2014

1	RICHMOND COUNTRY CLUB
2	LINARES, RAUL C

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

GIANT HWY 2010

5535 CVB ELECTRONICS INC
5551 EAST BAY REGIONAL PARK DST
5555 CONTRA COSTA COUNTY OF

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

MARKOVICH LN 2010

1	RICHMOND COUNTRY CLUB
2	LINARES, RAUL C

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

GIANT HWY 2005

5551 EAST BAY REGIONAL PARK DST
5555 CONTRA COSTA COUNTY

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

MARKOVICH LN 2005

1 RICHMOND COUNTRY CLUB

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

GIANT HWY 2000

5555 WEST COUNTY DETENTION

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

GIANT HWY 1995

5555 WEST CNTY DETENTION CNTR
WEST COUNTY DETENTION

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

MARKOVICH LN 1995

1	RICHMOND COUNTRY CLUB

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

GIANT HWY 1992

5555 WEST CNTY DETENTION CNTR



DRAFT

APPENDIX G

ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRES (2)

Project Name: Richmond Country Club
Project No. P2018.002.022

■ 2010 Crow Canyon Place • Suite 250 • San Ramon, CA 94583	(925) 866-9000 • Fax (888) 279-2698
☐ 2213 Plaza Drive • Rocklin, CA 95765	(916) 786-8883 • Fax (888) 279-2698
☐ 101 California Street • Suite 875 • San Francisco, CA 94104	(415) 284-9900 • Fax (888) 279-2698
☐ 6399 San Ignacio Avenue • Suite 150 • San Jose, CA 95119	(408) 574-4900 • Fax (888) 279-2698
☐ 17278 Golden Valley Parkway • Lathrop, CA 95330	(209) 835-0610 • Fax (888) 279-2698
☐ 17675 Sierra Highway • Santa Clarita, CA 91351	(661) 257-4004 • Fax (888) 279-2698
☐ 6 Morgan • Suite 162 • Irvine, CA 92618	(949) 529-3479 • Fax (888) 279-2698
☐ 1630 San Pablo Avenue • Suite 200 • Oakland, CA 94612	(510) 451-1255 • Fax (888) 279-2698

ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE FOR CLIENT

To evaluate the potential for possible environmentally related impacts and site contamination the following information is requested. This questionnaire is to be completed by the user of the phase one environmental site assessment, or their authorized representative.

PART I

1. Property address and Assessor's Parcel Number (APN):

   1 MARINA CAR LANE
   405-050-006 ; 405-050-019 ; 405-050-056

2. Current property owner (name, address, voice/fax number):

   RICHMOND COUNTRY CLUB
   1 MARINA CAR LANE RICHMOND CA 94806
   510-439-8522

3. Date current property owner assumed title of property:

   1924

4. Current property development/improvements:

   GOLF COURSE

5. Past property use, development/improvements:

   UNKNOWN

6. Neighboring property uses:

   - SINGLE FAMILY RESIDENCES ON 3 SIDES (N, S, E)
   - OPEN SPACE & GOVERNMENT FACILITY TO WEST

PART II

		Yes	No	N/A
1.	Are you aware of any environmental cleanup liens against the *property* that are filed under federal, tribal, local or state law?	☐	☑	
2.	Are you aware of any activity and land use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law?	☐	☑	
3.	Do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the *property* or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?	☐	☑	
4.	If a property transaction is occurring in conjunction with this environmental assessment, does the purchase price of this *property* reasonably reflect the fair market value of the *property*?	☑	☐	
5.	If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*?	☐	☐	☑
6.	Are you aware of any commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, (a) do you know of specific chemicals that are present or once were present at the *property*? (b) do you know of spills or other chemical releases that have taken place at the *property*? (c) do you know of any environmental cleanups that have taken place at the *property*?	☑	☐	
7.	Based on your knowledge and experience related to the *property* are there any obvious indicators that point to the presence or likely presence of contamination at the *property*?	☐	☑	

If a "Yes" response was provided to any of the above questions, please provide details below:

- VSP CLOSURE COMPLETED. THIS AREA NOT READY OR PLANNED TO BE DEVELOPED.

I certify that the information herein is true and correct to the best of my knowledge as of the date signed below.

Name (Printed/Typed): CHRIS ZABALDOS / MLC HOLDINGS, INC.

Signature: [signature] Date: 12-21-18

Project Name: Richmond Country Club
Project No. P2018.002.022

ENGEO

☒ 2010 Crow Canyon Place • Suite 250 • San Ramon, CA 94583	(925) 866-9000 • Fax (888) 279-2698
☐ 2213 Plaza Drive • Rocklin, CA 95765	(916) 786-8883 • Fax (888) 279-2698
☐ 101 California Street • Suite 875 • San Francisco, CA 94104	(415) 284-9900 • Fax (888) 279-2698
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☐ 17278 Golden Valley Parkway • Lathrop, CA 95330	(209) 835-0610 • Fax (888) 279-2698
☐ 17675 Sierra Highway • Santa Clarita, CA 91351	(661) 257-4004 • Fax (888) 279-2698
☐ 6 Morgan • Suite 162 • Irvine, CA 92618	(949) 529-3479 • Fax (888) 279-2698
☐ 1630 San Pablo Avenue • Suite 200 • Oakland, CA 94612	(510) 451-1255 • Fax (888) 279-2698

ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE
FOR KEY SITE MANAGER

To evaluate the potential for possible environmentally related impacts and site contamination the following information is requested. This questionnaire is to be preferably completed by the current property owner, or owner representative, leasing agent, or other person having good knowledge of the uses and physical characteristics of the property (Key Site Manager).

PART I

1. Property Address/Location and Assessor's Parcel Number (APN):
   1 MARKDALE LANE RICHMOND CA. 94806 3 - PARCELS
   1) 403-050-019 = HERITAGE PROPERTY SITS ON THIS PARCEL
   2) 403-050-006 = " " " " " "
   3) 403-050-056
2. Current property owner (name, address, voice/fax number):
   210 EQUITY OWNERS
   MEMBER OWNED PROPERTY
3. Date current property owner assumed title of property:
   SEPT - 1974
4. Current property development/improvements:
   N/A
5. Past property use, development/improvements:
   NONE
6. Neighboring property uses:
   RCC GOLF COURSE TO THE EAST
   RAILROAD TO THE WEST

PART II - The following questions should be answered to the best of your knowledge.

		Yes	No
1.	Is/has the *property* or any adjoining property used/been used for industrial purposes?	☐	☒
2.	Has the *property* or any adjoining property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	☒	☐
3.	Are there currently, or have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of greater than 5 gal in volume or 50 gal in the aggregate, stored on or used at the *property* or at the facility?	☐	☐ UNKNOWN
4.	Has undocumented soil been brought onto the property at any time? If yes, estimated quantity is _____ cubic yards.	☐	☒
5.	Has soil been brought onto the property that originated from a contaminated site or that is of an unknown origin?	☐	☒
6.	Are there currently, or have there been previously, any pits, ponds, or lagoons located on the *property* in connection with waste treatment or waste disposal?	☒	☐
7.	Is there currently, or has there been previously, any stained soil on the *property*?	☐	☒
8.	Are there currently, or have there been previously, any registered or unregistered storage tanks (above or underground) located on the *property*?	☐	☒
9.	Are there currently, or have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	☐	☒
10.	Are there currently, or have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?	☐	☒
11.	Are there any domestic, irrigation or monitoring wells on the property?	☒	☒
12.	If the *property* is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?	☐	☒
13.	Have you been informed of the past or current existence of *hazardous substances* or *petroleum products* or environmental violations with respect to the *property* or any facility located on the *property*?	☐	☒
14.	Have there been any *environmental site assessments* of the *property* or facility that indicated the presence of *hazardous substances* or *petroleum products* on, or contamination of, the *property* or recommended further assessment of the *property*?	☐	☒
15.	Have there been any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any *hazardous substance* or *petroleum products* involving the *property*?	☐	☒
16.	Has there been any past agricultural use of the *property*, such as orchards or seed crop cultivation?	☐	☒
17.	Have any *hazardous substances* or *petroleum products*, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the *property*?	☐	☐ UNKNOWN
18.	Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	☐	☒

If a "Yes" response was provided to any of the above questions, please provide details below:

#2. IT HAS BEEN USED AS AN ORGANIC DEBRI (GREENWASTE) DUMP AREA.

#6. PITS WERE DUG TO ACCOMODATE FOR GREENWASTE

#11. NO WELLS ON PROPERTY - CHANGED FROM YES TO NO

I certify that the information herein is true and correct to the best of my knowledge as of the date signed below.

Name (Printed/Typed): RALPH FREIGHTMAN - GENERAL MANAGER

Signature: [signature]

Date: 12-7-18



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APPENDIX H

RWQCB Transmittal of the Closure Letter and Site Summary

Terry Tamminen
Secretary for Environmental Protection

California Regional Water Quality Control Board

San Francisco Bay Region

Arnold Schwarzenegger
Governor

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.swrcb.ca.gov/rwqcb2

September 17, 2004
File No. 07-0842 (BGS)
2118.11

Richmond Country Club
Attn: Mr. Michael Souza
#1 Markovich Lane
Richmond, CA 94806

1 10539

Subject: **Transmittal of the Closure Letter and Site Closure Summary – Richmond Country Club, 1 Markovich Lane, Richmond, Contra Costa County**

Dear Mr. Souza:

Attached please find the uniform underground storage tank closure letter and the site closure summary for the subject site. Please contact Barbara Sieminski of my staff at (510) 622-2423 or e-mail bgs@rb2.swrcb.ca.gov if you any questions regarding this matter.

Sincerely,

Bruce H. Wolfe
Executive Officer

Enclosures: Closure Letter
Site Summary Form (3 pages)
Site Plan (Figure 2: Boring Location Map)

cc:
Mr. Paul Andrews
CCCHSD
4333 Pacheco Blvd.
Martinez, CA 94553

Mr. Robert Kitay
Aqua Science Engineers, Inc.
208 West El Pintado
Danville, CA 94526

Ms. Shari Knieriem
SWRCB, Cleanup Fund

Mr. Deanna Flanagin
SWRCB, UST Inf. Sys.

Terry Tamminen
Secretary for Environmental Protection

California Regional Water Quality Control Board

San Francisco Bay Region

Arnold Schwarzenegger
Governor

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.swrcb.ca.gov/rwqcb2

September 17, 2004
File No. 07-0842 (BGS)
2118.11

Richmond Country Club
Attn: Mr. Michael Souza
#1 Markovich Lane
Richmond, CA 94806

Subject: **Closure Letter – Richmond Country Club, 1 Markovich Lane, Richmond, Contra Costa County**

Dear Mr. Souza:

This letter confirms the completion of site investigation and remedial action for the underground storage tanks formerly located at the above described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks are greatly appreciated.

Based upon the available information, including the land use, and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground storage tank release is required.

This notice is issued pursuant to a regulation contained in Title 23, California Water Code of Regulations, Division 3, Chapter 16, Section 2721(e). If change in land use is proposed, the owner must promptly notify this agency.

Please contact our office, if you have any questions regarding this matter.

Sincerely,

for Bruce H. Wolfe
Executive Officer

SITE CLOSURE SUMMARY

I. AGENCY INFORMATION

Date: September 17, 2003

Agency Name: SF Bay Regional Water Quality Control Board	Address: 1515 Clay Street, Suite 1400
City/State/Zip: Oakland, CA 94612	Phone: 510-622-2423
Responsible Staff Person: Barbara Sieminski	Title: Engineering Geologist

II. SITE INFORMATION

Site Facility Name: Richmond County Club		
Site Facility Address: 1 Markovich Lane, Richmond, CA		
RB Case Nos.: 07-0842	Local or LOP Case No.:	Priority:
URF Filing Date: 08/12/02	SWEEPS No.:	
Responsible Parties (include addresses and phone numbers)		
Richmond Country Club (Michael Souza, 510-232-1086), #1 Markovich Lane, Richmond, CA 94806		

Tank No.	Size in Gallons	Contents	Closed In—Place/Removed?	Date
1	Gasoline	2,500 gallons	Removed	7/15/2002
2	Diesel	550 gallons	Removed	7/15/2002

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Unknown		
Site characterization complete? Yes	Date Approved by Oversight Agency: 9/17/04	
Monitoring wells installed? No	Number: N/A	Proper screened interval? N/A
Highest GW Depth Below Ground Surface: 10.5'	Lowest Depth: 30'	Flow Direction: N (inferred)
Most Sensitive Current Use: irrigation		
Most Sensitive Potential Use and Probability of Use	drinking water supply low	
Are drinking water wells affected? No	Aquifer Name: East Bay Plane	
Is surface water affected? No	Nearest surface water name: San Pablo Bay (0.7 mile NW of site)	
Off-Site Beneficial Use Impacts (Addresses/Locations): None		

Report(s) on file? yes	Where is report(s) filed? RB

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tanks	2	Removed (transported to Ecology Control Industries, Inc. in Richmond for disposal)	7/15/2002
Piping			
Free Product			
Soil			
Groundwater			

MAXIMUM DOCUMENTED POLLUTANT CONCENTRATIONS—BEFORE AND AFTER CLEANUP

POLLUTANT	Soil (ppm)		Water (ppb)		POLLUTANT	Soil (ppm)		Water (ppb)	
	Before[1]	After[2]	Before[1]	After[2]		Before[1]	After[2]	Before[1]	After[2]
TPHg	<0.5	<1	1,020	67	Toluene	<0.005	<0.005	423	2.5
TPHd	<1	<1	<50	86	Xylenes	<0.01	<0.005	46	0.79
Benzene	<0.005	<0.005	143	<0.50	MtBE	0.03	<0.005	1,250	<0.50
Ethylbenzene	<0.005	<0.005	112	<0.50					

Comments (Depth of Remediation, etc.):

[1] Results from samples collected during July 2002 tank pull.
[2] Results from samples collected from soil borings drilled within 10' of the former UST pit on 6/24/04.
ND Not detected in any soil sample collected during tank pull (before) or from soil borings (after).
NA Not analyzed.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Yes		
Site Management Requirements: None. Minor residual contamination both in soil and groundwater remains at the site, but the levels of residual contamination are not considered a to pose a significant risk to human health or the environment, and are expected to reduce with time.		
Monitoring Wells Decommissioned: N/A	Number Decommissioned: N/A	Number Retained: N/A
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: None		

V. ADDITIONAL COMMENTS, DATA, ETC.

The subject site is a country club golf course. One 2,500-gasoline and one 550-gallon diesel USTs were located in the common tank pit in the southern portion of the site. These USTs were removed in July 2002, and replaced with the aboveground tanks. Hydrocarbons were not detected in soil samples collected from the tank excavation with the exception of 0.03 ppm of MtBE, but a grab groundwater sample collected from the tank pit contained 1,020 ppb of TPHg, 143 ppb of benzene, and 1,250 ppb of MtBE. One new 8,000-gallon gasoline UST was installed at the site in 1988.

Three soil borings were drilled within 10' of the former UST excavation in June 2004. Groundwater was detected in these borings at depths of 15.5 to 30 ' bgs. Soil samples collected from the borings did not contain hydrocarbons. Grab groundwater samples contained minor concentrations of TPHg (67 ppb) and TPHd (86 ppb), but did not contained benzene or MtBE.

Minor residual contamination both in soil and groundwater remains at the site, but the residual contamination levels are not considered to pose a significant risk to human health or the environment, and are expected to reduce with time. The site qualifies as a low risk case.

VI. TECHNICAL REPORTS, CORRESPONDENCE, ETC., THAT THIS CLOSURE RECOMMENDATION WAS BASED UPON

Title: Removal of Two Underground Storage Tanks Report, Technology, Engineering & Construction, Inc.	Date: 08/08/02
Title: Work Plan for Soil and Groundwater Assessment, Aqua Science Engineers, Inc.	Date: 05/07/04
Title: Report of Soil and Groundwater Assessment, Aqua Science Engineers, Inc.	Date: 07/09/04

This document and the related CASE CLOSURE LETTER shall be retained by the lead agency as part of the official site file.



NORTH

SCALE
1 - INCH = 20 - FEET

Maintenance Building

Roadway

BH-B

BH-C

Former UST Excavation

BH-A

Retaining Wall

Retaining Wall

Hillside
(Slopes to North)

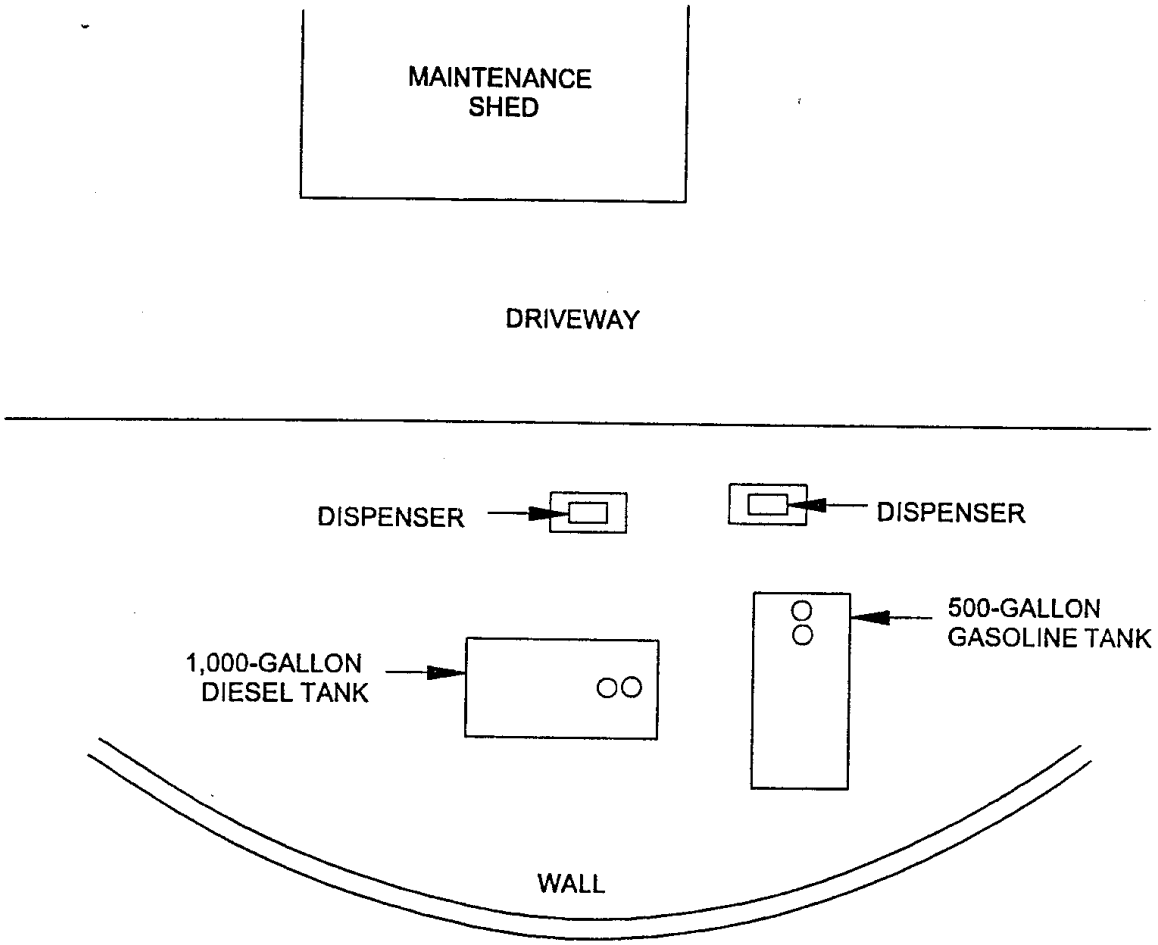
LEGEND

BH-A Boring Location

BORING LOCATION MAP

RICHMOND COUNTRY CLUB
1 MARKOVICH LANE
RICHMOND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | FIGURE 2


MAINTENANCE SHED
DRIVEWAY
DISPENSER
DISPENSER
500-GALLON GASOLINE TANK
1,000-GALLON DIESEL TANK
WALL
PLANTER AREA



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APPENDIX I

QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL

JEFFREY ADAMS, PHD, PE
Principal Engineer

EDUCATION

BS, Civil Engineering, University of Illinois at Chicago, 1994

MS, Civil Engineering, University of Illinois at Chicago, 1996

PhD, Civil Engineering, University of Illinois at Chicago, 1999

MBA, Concentration in Real Estate and Finance, University of Washington, 2004

EXPERIENCE

Years with ENGEO: 17

REGISTRATIONS & CERTIFICATIONS

Professional Engineer, CA, 69633

Environmental Manager, NV, 2150

40 Hour HAZWOPER Training, CA, 12100257636

SPECIALIZATIONS

- Environmental & Stormwater Permitting
- Environmental Assessments and Remediation
- Environmental Restoration
- Geologic Hazard Abatement Districts (GHADs)
- Groundwater Modeling
- MS Project

Jeff joined ENGEO in 1999 and is a Principal Engineer directing environmental assessment, characterization, and remediation projects, geotechnical field reconnaissance and explorations, and engineering design and analyses. Jeff has provided financial analyses on real estate development projects as well as project cost-benefit analyses. He also is heavily involved in our Entitlement and Permitting Support services as well as our programs for Geologic Hazard Abatement Districts.

Jeff has performed numerous Phase I and II Environmental Site Assessments and site characterizations, as well as a number of analyses and studies utilizing federal, state, and local directives. He specializes in Brownfield redevelopment projects requiring integrated solutions for the mitigation of geotechnical and environmental hazards. Jeff is experienced in developing financial models, cash flow projections and budgets for a variety of projects requiring innovative financial solutions.

Select Project Experience

Foster City Civic Center—Foster City, CA
Group Leader, Assistant Project Manager. Jeff provided technical oversight for phase one environmental site assessment for the Foster City Civic Center site and environmental characterization operations for the site, which was suspected of having been affected by unauthorized petroleum hydrocarbon releases within the subsurface. Following the completion of a soil gas survey, Jeff and team demonstrated that vapor intrusion mitigation systems were not necessary for proposed development, providing a significant cost savings to the project. The project consists of a multi-use urban infill development.

Alameda Landing—Alameda, CA
Group Leader, Project Manager. Jeff managed the completion of a phase one environmental site assessment for the Alameda Landing site. He also directed recent environmental characterization operations for the site, which was suspected of having been affected by naturally-occurring methane deposits within the subsurface. Working closely with innovative protocols, Jeff was able to demonstrate to regulatory oversight officials that expensive vapor intrusion mitigation systems were not necessary for proposed residential structures, potentially saving millions of dollars to the site developer. The project consists of a multi-phased single-family and multi-family residential housing development.

1000 Howe Road—Martinez, CA
Project Engineer. Jeff provided a phase-one environmental site assessment for the project. In addition, he provided a preliminary geotechnical report for this property that has been used as a trucking company's storage yard. The project is a residential development that consists of single- and multiple-story detached residential units.

Jefferson Street Development—Oakland, CA
Project Manager. Jeff served as Project Manager. He provided comprehensive environmental and geotechnical consultation services for a Brownfields redevelopment project in downtown Oakland. The project included several challenges, including limited site access due to onsite business activities, environmental impact related to previous site use, and the presence of several adjacent mid-rise structures. Jeff developed cost effective remedial value engineering solutions to mitigate the presence of geotechnically and environmentally-constraining subsurface solutions. Jeff worked with the design team to establish cost-effective retaining wall and foundation systems, designed and observed a subsurface environmental mitigation program, and assisted in the design of a structure wide vapor barrier. The project, serving as a cornerstone of the revitalization of downtown Oakland, is an excellent example of Jeff's proficiency in delivering cost effective solutions to facilitate Brownfields redevelopment. The project consists of a multi-story residential condominium structure.

San Ramon Village Plaza—Dublin, CA
Project Manager. Jeff served as Project Engineer. He contributed to an environmental peer review of previous land uses, which included a former dry cleaner. Further investigation identified impact due to former site operations. Jeff assisted in a remediation program, closely collaborating with other consultants representing differed parties of the property transaction. The site was efficiently remediated, allowing for redevelopment. The project consists of a high-density residential development within the 4.68-acre mixed-use San Ramon Village Plaza site. The project consists of a high-density residential development within the 4.68-acre mixed-use San Ramon Village Plaza site.

Los Banos Airport—Los Banos, CA
Project Engineer. Jeff provided a Phase I Environmental Site Assessment and a Conceptual Soil Remediation Work Plan as part of a multi-phase development. In addition to the Phase I Environmental Site Assessment he provided a soil and groundwater characterization program. The Los Banos Airport project measures approximately 112 acres in area.

Questa @ Neighborhood H - Mountain House—Mountain House, CA
Project Manager. Jeff served as project manager. He assisted in the preparation a phase one environmental site assessment in fall 2010. Under Jeff's leadership, the project team was able to effectively navigate through the complex historic records and ownership legacy associated with the property. The report that satisfied the demands and deadline of both the ownership entity and the financial institutions associated with the property. ENGEO performed a phase I environmental site assessment on the finished lots within Questa @ Neighborhood H of the Mountain House project.

Lockheed Martin Storm Water Pond No 4—Sunnyvale, CA
Project Manager. Jeff provided permitting consultation services, including the federal and state permitting required for the maintenance of a stormwater detention system. Jeff has also provided geotechnical and environmental support to evaluate the geotechnical conditions of the site. He also determined the absence of environmentally impacted materials within the site area. The site consists of a stormwater detention basin measuring approximately 4.5 acres in area and located adjacent to sensitive habitat.



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F.2 - Phase II Environmental Site Assessment

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January 31, 2019

Project No.
15693.000.000

Mr. Chris Zaballos
MLC Holdings, Inc.
2603 Camino Ramon, Suite 140
San Ramon, CA 94583

Subject: Richmond Country Club – 1 Markovich Lane
Richmond, California

PHASE II ENVIRONMENTAL SITE ASSESSMENT

Reference: ENGEO, Phase I Environmental Site Assessment DRAFT, Richmond Country Club, Richmond, California, December 28, 2018. ENGEO Project No. 15693.000.000.

Dear Mr. Zaballos:

We are pleased to submit the findings of our phase II environmental site assessment (ESA) undertaken at the subject property (Property) in Richmond, California. The purpose of this phase II ESA was to perform a preliminary investigation to assess the potential impacts within surface soil, with a focus on soil adjacent to the existing railroad alignment. In addition, select soil samples were also analyzed for undocumented fill placed over the years as part of golf course operations.

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BACKGROUND

The Property is located at 1 Markovich Lane in Richmond, California (Property). The Property is approximately 24 acres in area and is identified as portions of Assessor's Parcel Numbers (APN) 405-050-006 and 405-050-019.

The Property consists of undeveloped vegetated land. Review of historical records indicates that the Property has remained undeveloped land since the late 1930s. A railroad line has been mapped along the western boundary of the study area since at the least the late 1890s. Prior to the golf course development in the 1940s, the San Pablo Oil Tank Farm operated on a portion of the golf course and further east (offsite). The San Pablo Oil Tank Farm is no longer present and has since undergone residential development. Undocumented fill has been present on the central and northern portion of the study area since at least the 1950s.

ENGEO conducted a phase I ESA for the Property in December 2018 (Reference). ENGEO identified features that were not considered a REC; however, features of potential environmental concern were identified and are briefly discussed below.

- Undocumented fill has been placed over the years in the central and northern portion of the Property.
- BNSF railroad tracks are located along the western boundary of the study area.
- The Key Site Manager indicated that the Property has been used to dispose of organic waste, or "green waste." Pits reportedly were excavated to dispose of the green waste. The locations of the pits are unknown.

ENGEO recommended the following:

- The source and contents of the existing undocumented fill placed at the Property has not been identified. It would be prudent to perform preliminary soil sampling with laboratory analysis to assess if the material poses a risk for redevelopment.
- A preliminary soil screening assessment of the western boundary of the Property, near the railroad corridor, should be performed to assess if past railroad activities have impacted near-surface soils.

SCOPE OF FIELD EXPLORATION

Field-sampling activities associated with the phase II ESA were conducted on January 10, 2019. Hand-sampling equipment was utilized for the collection of the 12 surface soil samples. Select soil samples were collected via test pits excavated with a backhoe.

Soil Assessment

Soil sampling was conducted to assess potential surface impacts associated with the adjacent railroad corridor. In addition, select soil samples were also collected and analyzed from within undocumented soil placed over the years as part of golf course operations. Prior to subsurface test pits, an ENGEO representative visited the site to mark/locate the sample locations and contacted USA North Service Alert to notify operators of underground utilities at and near the Property.

ENGEO collected soil samples from 12 soil sample locations to a depth of approximately 3 to 9 inches. Additional soil samples were collected from test pits at six locations from depths of 3, 4, 4.5, and 11 feet below ground surface.

Four composite samples were analyzed for the following: volatile organic compounds with total petroleum hydrocarbons (TPH) as gasoline (EPA Method 8260B), total petroleum hydrocarbons as diesel and as motor oil (EPA Method 8015), with silica gel cleanup, CAM-17 Metals (EPA Methods 6010B and 7471), organochlorine pesticides (OCPs) (EPA Method 8081A), polychlorinated biphenyls (PCBs) (EPA Method 8082), and semi-volatile organic compounds (SVOCs) (EPA Method 8270C). Four samples (SB-2, SB-5, SB-8, and SB-11) were analyzed discretely for VOCs and TPH-gasoline, TPH-diesel/motor oil (with silica gel cleanup), and SVOCs. Two samples collected from test pits were analyzed discretely for TPH-gasoline, VOCs, and CAM-17 metals.

Laboratory analysis were performed on a standard laboratory turnaround time. Soil samples were retrieved with 2- by 6-inch stainless steel liners. The sample sleeves were sealed using Teflon® sheets secured by tight-fitting plastic end caps.

ANALYTICAL RESULTS

Volatile organic compounds, TPH-gasoline, and PCBs were not detected.

The following petroleum hydrocarbons were detected: TPH-diesel was detected at a maximum concentration of 19.9 milligrams per kilograms (mg/kg) and TPH-motor oil at a maximum concentration of 23.8 mg/kg.

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The following metals were detected (at maximum concentrations of): arsenic (3.84 mg/kg), barium (289 mg/kg), chromium (28.6 mg/kg), cobalt (10.8 mg/kg), copper (16.1 mg/kg), lead (20.2 mg/kg), nickel (33.7 mg/kg), vanadium (28.8 mg/kg), and nickel (45.1 mg/kg). While arsenic was reported above the Tier 1 ESLs, which is common, the concentrations are within the typical San Francisco Bay Area natural occurring background concentrations.

SVOCs were not detected above laboratory reporting limits with the exception of Phenanthrene at a concentration of 0.729 mg/kg.

Three OCPs were detected above laboratory reporting limits (with maximum concentrations of): 4,4-DDE (0.00834 mg/kg), heptachlor (0.0403 mg/kg), and dieldrin (0.0058 mg/kg).

The laboratory results are presented in their entirety in Appendix A.

DISCUSSION AND CONCLUSION

Review of the laboratory test results found low- to non-detectable concentrations for the analyzed samples as mentioned in the Analytical Results section above. The reported concentrations are below the current DTSC SL's[1] and RWQCB ESLs[2&3] for residential screening levels, or within typical background concentrations for metals. Based on the soil samples analyzed, the soils at the Property are below applicable residential screening levels and do not appear to have been significantly impacted by past uses.

It is understood that supplemental assessment of undocumented material may be required in the future.

No further studies are recommended at this time. If you have any questions regarding this report, please contact us.

Sincerely,

ENGEO Incorporated

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Taunee Werts Shawn Munger, CHG

Scott Johns, PE
tw/sm/sj/jf
Attachments: Figures
Appendix A – Laboratory Analytical Reports

[1] Department of Toxic Substances Control (DTSC) HERO HHRA Note 3 (June 2018)

[2] San Francisco Regional Water Quality Control Board (RWQCB) Environmental Screening Levels for residential soil; January 2019

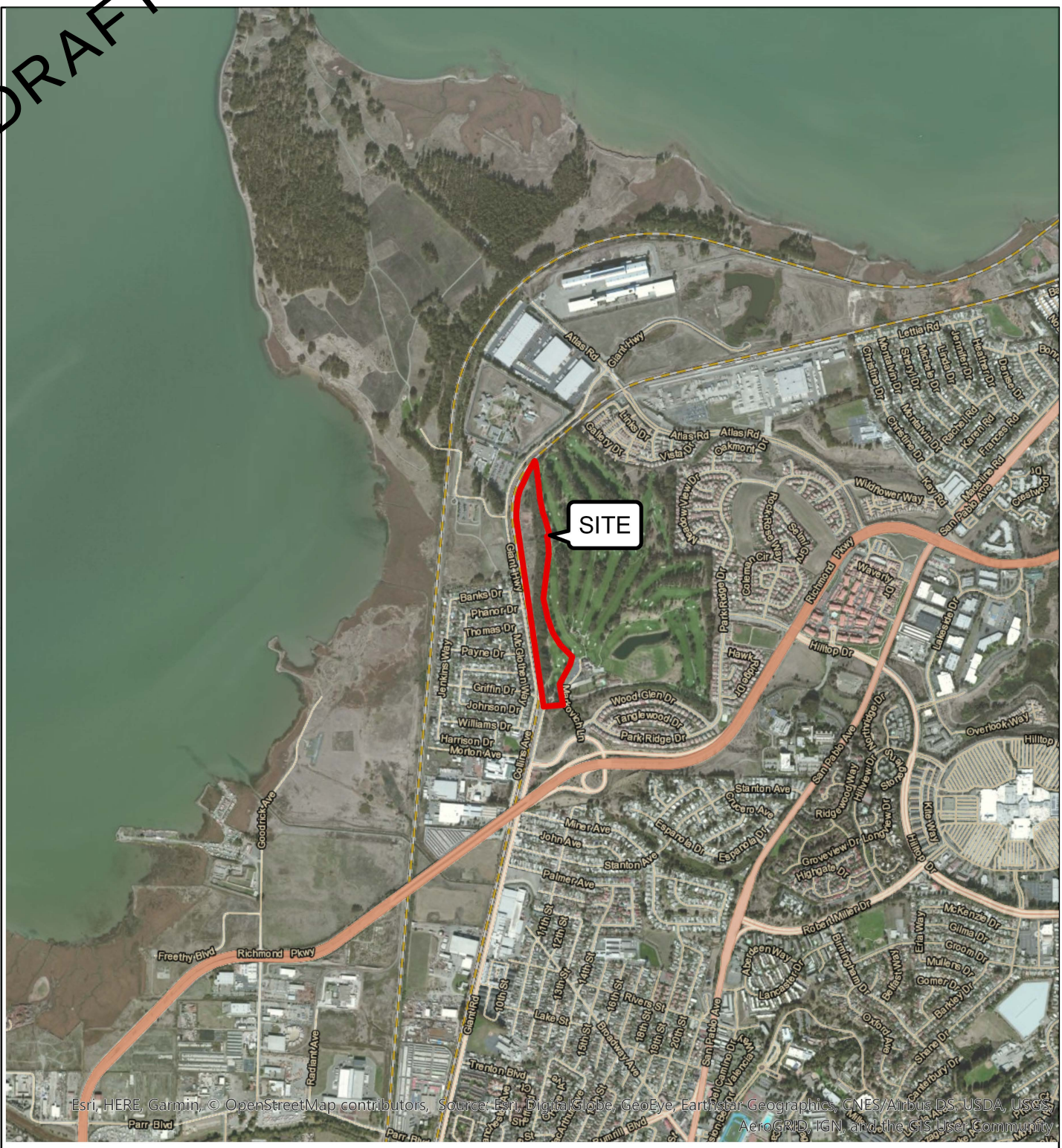
[3] San Francisco Regional Water Quality Control Board (RWQCB) Environmental Screening Levels, Tier 1 Screening Levels; January 2019.

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FIGURES

FIGURE 1 – Vicinity Map
FIGURE 2 – Soil Sample Locations

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ENGEO Expect Excellence

VICINITY MAP

RICHMOND COUNTRY CLUB

RICHMOND, CALIFORNIA

PROJECT NO. :	15693.000.000
SCALE:	AS SHOWN
DRAWN BY: QRL	CHECKED BY: SRJ

FIGURE NO. 1

PATH: G:\DRAFTING\DRAFTING2_DWG_13000 PLUS\15693\000\RICHMOND COUNTRY CLUB ESA.APRX
USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR

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0 250 500

FEET

EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

SB-12 / SB-11 / COMP 4 / SB-10 — COMPOSITE SAMPLE

1-TP-12 — TEST PIT SAMPLE LOCATION (ENGEO, 2018)

BASEMAP SOURCE: ESRI MAPPING SERVICE

ENGEO Expect Excellence

SOIL SAMPLE LOCATIONS

RICHMOND COUNTRY CLUB

RICHMOND, CALIFORNIA

PROJECT NO. : 15693.000.000		FIGURE NO. 2
SCALE: AS SHOWN		
DRAWN BY: QRL	CHECKED BY: SRJ	

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USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR

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APPENDIX A

Laboratory Analytical Reports

Engeo (San Ramon)
2010 Crow Canyon Place,#250
San Ramon, California 94583
Tel: (925) 866-9000
Fax: (925) 866-0199

RE: Richmond Country Club

Work Order No.: 1901065

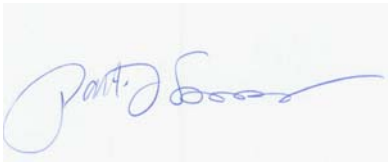
Dear Taunee Werts:

Torrent Laboratory, Inc. received 12 sample(s) on January 10, 2019 for the analyses presented in the following Report.

TPH gas, diesel, motor oil, VOC and SVOC analsyes were performed on client designated discrete samples. The 12 samples were combined into four 3:1 point composites for the additional analyses.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991 If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Patti L Sandrock
QA Officer

January 15, 2019
Date

Date: 1/15/2019

Client: Engeo (San Ramon)

Project: Richmond Country Club

Work Order: 1901065

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Analytical, Inc.

Analytical Comments for method 6010B CAM17, 1901065-013A MS/MSD, QC Analytical Preparation ID 1110262, Note:The % recoveries for Lead, Vanadium and Zinc are outside of laboratory control limits but % RPD is within limits. The associated LCS/LCSD is within both % Recovery and %RPD limits. No corrective action required.

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date Received: 01/10/19
Date Reported: 01/15/19

SB-2 1901065-002

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	19.9	mg/Kg
TPH as Motor Oil (SG)	SW8015B	1	3.2	10	23.8	mg/Kg
Phenanthrene	SW8270C	5	0.0466	0.720	0.729	mg/Kg

SB-5 1901065-005

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	13.4	mg/Kg
TPH as Motor Oil (SG)	SW8015B	1	3.2	10	16.0	mg/Kg

SB-8 1901065-008

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	8.98	mg/Kg
TPH as Motor Oil (SG)	SW8015B	1	3.2	10	11.4	mg/Kg

SB-11 1901065-011

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	11.1	mg/Kg
TPH as Motor Oil (SG)	SW8015B	1	3.2	10	11.8	mg/Kg

COMP 1 1901065-013

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.83	mg/Kg
Barium	SW6010B	1	0.055	5.00	85.0	mg/Kg
Chromium	SW6010B	1	0.075	5.00	16.2	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	8.00	mg/Kg
Copper	SW6010B	1	0.20	5.00	15.2	mg/Kg
Lead	SW6010B	1	0.10	3.00	20.2	mg/Kg
Nickel	SW6010B	1	0.50	5.00	15.3	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	28.3	mg/Kg
Zinc	SW6010B	1	0.30	5.00	45.1	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date Received: 01/10/19
Date Reported: 01/15/19

COMP 2 1901065-014

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	3.84	mg/Kg
Barium	SW6010B	1	0.055	5.00	152	mg/Kg
Chromium	SW6010B	1	0.075	5.00	25.5	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	9.60	mg/Kg
Copper	SW6010B	1	0.20	5.00	13.1	mg/Kg
Lead	SW6010B	1	0.10	3.00	13.7	mg/Kg
Nickel	SW6010B	1	0.50	5.00	25.8	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	27.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	35.1	mg/Kg
4,4-DDE	SW8081B	20	3.9	40	8.34	ug/Kg

COMP 3 1901065-015

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	3.99	mg/Kg
Barium	SW6010B	1	0.055	5.00	132	mg/Kg
Chromium	SW6010B	1	0.075	5.00	28.6	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	7.80	mg/Kg
Copper	SW6010B	1	0.20	5.00	16.1	mg/Kg
Lead	SW6010B	1	0.10	3.00	17.0	mg/Kg
Nickel	SW6010B	1	0.50	5.00	23.3	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	28.8	mg/Kg
Zinc	SW6010B	1	0.30	5.00	35.3	mg/Kg
Heptachlor	SW8081B	20	2.1	40	11.0	ug/Kg
4,4-DDE	SW8081B	20	3.9	40	5.80	ug/Kg

COMP 4 1901065-016

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.84	mg/Kg
Barium	SW6010B	1	0.055	5.00	84.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	15.5	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	6.50	mg/Kg
Copper	SW6010B	1	0.20	5.00	8.50	mg/Kg
Lead	SW6010B	1	0.10	3.00	12.4	mg/Kg
Nickel	SW6010B	1	0.50	5.00	13.2	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	17.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	15.6	mg/Kg
Heptachlor	SW8081B	20	2.1	40	40.3	ug/Kg
Dieldrin	SW8081B	20	3.0	40	5.80	ug/Kg

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-2	**Lab Sample ID:**	1901065-002A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 8:57		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19 4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	5	0.234	3.60	ND		mg/Kg	01/12/19	3:06	MT	436542
Phenol	SW8270C	5	0.219	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
Bis(2-chloroethyl) ether	SW8270C	5	0.0665	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
2-Chlorophenol	SW8270C	5	0.238	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
1,3-Dichlorobenzene	SW8270C	5	0.0657	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
1,4-Dichlorobenzene	SW8270C	5	0.0731	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Benzyl Alcohol	SW8270C	5	0.102	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
1,2-Dichlorobenzene	SW8270C	5	0.0675	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
2-Methylphenol (o-Cresol)	SW8270C	5	0.147	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
NMP	SW8270C	5	0.340	3.60	ND		mg/Kg	01/12/19	3:06	MT	436542
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	5	0.157	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
N-nitroso-di-n-propylamine	SW8270C	5	0.0657	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Hexachloroethane	SW8270C	5	0.0853	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Nitrobenzene	SW8270C	5	0.0642	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Isophorone	SW8270C	5	0.0609	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
2-Nitrophenol	SW8270C	5	0.127	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
2,4-Dimethylphenol	SW8270C	5	0.114	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
Benzoic Acid	SW8270C	5	0.209	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
Bis(2-Chloroethoxy)methane	SW8270C	5	0.0490	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Bis(2-chloroisopropyl)ether	SW8270C	5	0.0630	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
2,4-Dichlorophenol	SW8270C	5	0.196	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
1,2,4-Trichlorobenzene	SW8270C	5	0.0592	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Naphthalene	SW8270C	5	0.0529	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
2,6-Dichlorophenol	SW8270C	5	0.179	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
Hexachloro-1,3-butadiene	SW8270C	5	0.0417	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
4-Chloro-3-methylphenol	SW8270C	5	0.169	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
2-Methylnaphthalene	SW8270C	5	0.0522	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
1-Methylnaphthalene	SW8270C	5	0.0609	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Hexachlorocyclopentadiene	SW8270C	5	0.0647	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
2,4,6-Trichlorophenol	SW8270C	5	0.180	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
2,4,5-Trichlorophenol	SW8270C	5	0.167	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
2-Chloronaphthalene	SW8270C	5	0.0530	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
1,4-Dinitrobenzene	SW8270C	5	0.0516	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Dimethyl phthalate	SW8270C	5	0.0708	3.60	ND		mg/Kg	01/12/19	3:06	MT	436542
1,3-Dinitrobenzene	SW8270C	5	0.0520	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-2	**Lab Sample ID:**	1901065-002A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 8:57		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19 4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Acenaphthylene	SW8270C	5	0.0414	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
2,6-Dinitrotoluene	SW8270C	5	0.0566	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
1,2-Dinitrobenzene	SW8270C	5	0.0788	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Acenaphthene	SW8270C	5	0.0533	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
2,4-Dinitrophenol	SW8270C	5	0.388	3.60	ND		mg/Kg	01/12/19	3:06	MT	436542
4-Nitrophenol	SW8270C	5	0.274	3.60	ND		mg/Kg	01/12/19	3:06	MT	436542
Dibenzofuran	SW8270C	5	0.0561	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
2,4-Dinitrotoluene	SW8270C	5	0.0604	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
2,3,5,6-Tetrachlorophenol	SW8270C	5	0.138	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
2,3,4,6-Tetrachlorophenol	SW8270C	5	0.157	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
Diethylphthalate	SW8270C	5	0.0681	3.60	ND		mg/Kg	01/12/19	3:06	MT	436542
Fluorene	SW8270C	5	0.0515	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
4-Chlorophenyl phenyl ether	SW8270C	5	0.0466	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
4,6-Dinitro-2-methylphenol	SW8270C	5	0.0669	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
Diphenylamine	SW8270C	5	0.0652	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Azobenzene	SW8270C	5	0.569	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
4-Bromophenyl phenyl ether	SW8270C	5	0.0411	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Hexachlorobenzene	SW8270C	5	0.0433	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Pentachlorophenol	SW8270C	5	0.125	1.44	ND		mg/Kg	01/12/19	3:06	MT	436542
Phenanthrene	SW8270C	5	0.0466	0.720	**0.729**		mg/Kg	01/12/19	3:06	MT	436542
Anthracene	SW8270C	5	0.0446	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Carbazole	SW8270C	5	0.0537	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Di-n-butylphthalate	SW8270C	5	0.0675	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Fluoranthene	SW8270C	5	0.0500	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Benzidine	SW8270C	5	0.735	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Pyrene	SW8270C	5	0.0598	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Benzyl butyl phthalate	SW8270C	5	0.105	3.60	ND		mg/Kg	01/12/19	3:06	MT	436542
Benz[a]anthracene	SW8270C	5	0.0490	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
3,3-Dichlorobenzidine	SW8270C	5	0.588	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Chrysene	SW8270C	5	0.0758	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Bis(2-Ethylhexyl)phthalate	SW8270C	5	0.0767	3.60	ND		mg/Kg	01/12/19	3:06	MT	436542
Di-n-octyl phthalate	SW8270C	5	0.0614	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Benzo[b]fluoranthene	SW8270C	5	0.0602	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Benzo[k]fluoranthene	SW8270C	5	0.0408	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Benzo[a]pyrene	SW8270C	5	0.0490	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-2	**Lab Sample ID:**	1901065-002A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 8:57		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19 4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Indeno[1,2,3-cd]pyrene	SW8270C	5	0.0690	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Dibenz[a,h]anthracene	SW8270C	5	0.0635	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Benzo[g,h,i]perylene	SW8270C	5	0.0833	0.720	ND		mg/Kg	01/12/19	3:06	MT	436542
Pyridine	SW8270C	5	0.219	3.60	ND		mg/Kg	01/12/19	3:06	MT	436542
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**72.7**		%	01/12/19	3:06	MT	436542
Phenol-d6 (S)	SW8270C		24 - 113		**72.6**		%	01/12/19	3:06	MT	436542
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**80.7**		%	01/12/19	3:06	MT	436542
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**81.3**		%	01/12/19	3:06	MT	436542
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**77.6**		%	01/12/19	3:06	MT	436542
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**80.4**		%	01/12/19	3:06	MT	436542

NOTE: Sample diluted due to nature of the matrix (dark, viscous extract)

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-2	**Lab Sample ID:**	1901065-002A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 8:57		
SDG:			

Prep Method:	3546_TPHSG	**Prep Batch Date/Time:**	1/10/19	1:44:00PM
Prep Batch ID:	1110230	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	**19.9**	x	mg/Kg	01/11/19	15:21	AW	436551
TPH as Motor Oil (SG)	SW8015B	1	3.2	10	**23.8**		mg/Kg	01/11/19	15:21	AW	436551
			Acceptance Limits								
Pentacosane (S)	SW8015B		40 - 120		**71.0**		%	01/11/19	15:21	AW	436551

NOTE: x-Diesel value the result of overlap of Oil range into Diesel range

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-2	**Lab Sample ID:**	1901065-002A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 8:57		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 11:43:00AM
Prep Batch ID:	1110285	**Prep Analyst:**	JFORT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	0.0012	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Chloromethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Vinyl Chloride	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Bromomethane	SW8260B	1	0.0027	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Chloroethane	SW8260B	1	0.0030	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Trichlorofluoromethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,1-Dichloroethene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Freon 113	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Methylene Chloride	SW8260B	1	0.0071	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
trans-1,2-Dichloroethene	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
MTBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
tert-Butanol	SW8260B	1	0.012	0.050	ND		mg/Kg	01/11/19	21:59	JF	436591
Diisopropyl ether (DIPE)	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,1-Dichloroethane	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
ETBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
cis-1,2-Dichloroethene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
2,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Bromochloromethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Chloroform	SW8260B	1	0.0024	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Carbon Tetrachloride	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,1,1-Trichloroethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,1-Dichloropropene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Benzene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
TAME	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,2-Dichloroethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Trichloroethylene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Dibromomethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Bromodichloromethane	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
cis-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Toluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Tetrachloroethylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
trans-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,1,2-Trichloroethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Dibromochloromethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-2	**Lab Sample ID:**	1901065-002A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 8:57		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 11:43:00AM
Prep Batch ID:	1110285	**Prep Analyst:**	JFORT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,3-Dichloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,2-Dibromoethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Chlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Ethyl Benzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,1,1,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
m,p-Xylene	SW8260B	1	0.0032	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
o-Xylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Styrene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Bromoform	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Isopropyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
n-Propylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Bromobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,1,2,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
2-Chlorotoluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,3,5-Trimethylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,2,3-Trichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
4-Chlorotoluene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
tert-Butylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,2,4-Trimethylbenzene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
sec-Butyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
p-Isopropyltoluene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,3-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,4-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
n-Butylbenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,2-Dichlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,2-Dibromo-3-Chloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Hexachlorobutadiene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,2,4-Trichlorobenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
Naphthalene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
1,2,3-Trichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
2-Butanone	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	21:59	JF	436591
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**104**		%	01/11/19	21:59	JF	436591
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	01/11/19	21:59	JF	436591
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**88.1**		%	01/11/19	21:59	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-2	**Lab Sample ID:**	1901065-002A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 8:57		
SDG:			

Prep Method:	5035GRO	**Prep Batch Date/Time:**	1/11/19	11:43:00AM
Prep Batch ID:	1110288	**Prep Analyst:**	JFORT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH(Gasoline)	8260TPH	1	0.043	0.10	ND		mg/Kg	01/11/19	21:59	JF	436591
(S) 4-Bromofluorobenzene	8260TPH		43.9 - 127		**62.3**		%	01/11/19	21:59	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-5	**Lab Sample ID:**	1901065-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:16		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19 4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	0.0469	0.720	ND		mg/Kg	01/12/19	3:35	MT	436542
Phenol	SW8270C	1	0.0438	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
Bis(2-chloroethyl) ether	SW8270C	1	0.0133	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
2-Chlorophenol	SW8270C	1	0.0477	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
1,3-Dichlorobenzene	SW8270C	1	0.0131	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
1,4-Dichlorobenzene	SW8270C	1	0.0146	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Benzyl Alcohol	SW8270C	1	0.0205	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
1,2-Dichlorobenzene	SW8270C	1	0.0135	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
2-Methylphenol (o-Cresol)	SW8270C	1	0.0293	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
NMP	SW8270C	1	0.0680	0.720	ND		mg/Kg	01/12/19	3:35	MT	436542
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	0.0313	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
N-nitroso-di-n-propylamine	SW8270C	1	0.0132	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Hexachloroethane	SW8270C	1	0.0171	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Nitrobenzene	SW8270C	1	0.0128	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Isophorone	SW8270C	1	0.0122	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
2-Nitrophenol	SW8270C	1	0.0254	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
2,4-Dimethylphenol	SW8270C	1	0.0228	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
Benzoic Acid	SW8270C	1	0.0417	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
Bis(2-Chloroethoxy)methane	SW8270C	1	0.00979	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Bis(2-chloroisopropyl)ether	SW8270C	1	0.0126	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
2,4-Dichlorophenol	SW8270C	1	0.0393	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
1,2,4-Trichlorobenzene	SW8270C	1	0.0118	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Naphthalene	SW8270C	1	0.0106	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
2,6-Dichlorophenol	SW8270C	1	0.0358	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
Hexachloro-1,3-butadiene	SW8270C	1	0.00834	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
4-Chloro-3-methylphenol	SW8270C	1	0.0338	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
2-Methylnaphthalene	SW8270C	1	0.0104	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
1-Methylnaphthalene	SW8270C	1	0.0122	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Hexachlorocyclopentadiene	SW8270C	1	0.0129	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
2,4,6-Trichlorophenol	SW8270C	1	0.0359	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
2,4,5-Trichlorophenol	SW8270C	1	0.0334	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
2-Chloronaphthalene	SW8270C	1	0.0106	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
1,4-Dinitrobenzene	SW8270C	1	0.0103	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Dimethyl phthalate	SW8270C	1	0.0142	0.720	ND		mg/Kg	01/12/19	3:35	MT	436542
1,3-Dinitrobenzene	SW8270C	1	0.0104	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-5	**Lab Sample ID:**	1901065-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:16		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19 4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Acenaphthylene	SW8270C	1	0.00828	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
2,6-Dinitrotoluene	SW8270C	1	0.0113	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
1,2-Dinitrobenzene	SW8270C	1	0.0158	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Acenaphthene	SW8270C	1	0.0107	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
2,4-Dinitrophenol	SW8270C	1	0.0776	0.720	ND		mg/Kg	01/12/19	3:35	MT	436542
4-Nitrophenol	SW8270C	1	0.0547	0.720	ND		mg/Kg	01/12/19	3:35	MT	436542
Dibenzofuran	SW8270C	1	0.0112	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
2,4-Dinitrotoluene	SW8270C	1	0.0121	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
2,3,5,6-Tetrachlorophenol	SW8270C	1	0.0276	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
2,3,4,6-Tetrachlorophenol	SW8270C	1	0.0315	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
Diethylphthalate	SW8270C	1	0.0136	0.720	ND		mg/Kg	01/12/19	3:35	MT	436542
Fluorene	SW8270C	1	0.0103	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
4-Chlorophenyl phenyl ether	SW8270C	1	0.00932	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
4,6-Dinitro-2-methylphenol	SW8270C	1	0.0134	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
Diphenylamine	SW8270C	1	0.0130	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Azobenzene	SW8270C	1	0.114	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
4-Bromophenyl phenyl ether	SW8270C	1	0.00823	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Hexachlorobenzene	SW8270C	1	0.00866	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Pentachlorophenol	SW8270C	1	0.0250	0.288	ND		mg/Kg	01/12/19	3:35	MT	436542
Phenanthrene	SW8270C	1	0.00932	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Anthracene	SW8270C	1	0.00891	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Carbazole	SW8270C	1	0.0107	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Di-n-butylphthalate	SW8270C	1	0.0135	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Fluoranthene	SW8270C	1	0.01000	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Benzidine	SW8270C	1	0.147	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Pyrene	SW8270C	1	0.0120	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Benzyl butyl phthalate	SW8270C	1	0.0210	0.720	ND		mg/Kg	01/12/19	3:35	MT	436542
Benz[a]anthracene	SW8270C	1	0.00980	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
3,3-Dichlorobenzidine	SW8270C	1	0.118	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Chrysene	SW8270C	1	0.0152	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Bis(2-Ethylhexyl)phthalate	SW8270C	1	0.0153	0.720	ND		mg/Kg	01/12/19	3:35	MT	436542
Di-n-octyl phthalate	SW8270C	1	0.0123	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Benzo[b]fluoranthene	SW8270C	1	0.0120	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Benzo[k]fluoranthene	SW8270C	1	0.00816	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Benzo[a]pyrene	SW8270C	1	0.00980	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-5	**Lab Sample ID:**	1901065-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:16		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19	4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Indeno[1,2,3-cd]pyrene	SW8270C	1	0.0138	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Dibenz[a,h]anthracene	SW8270C	1	0.0127	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Benzo[g,h,i]perylene	SW8270C	1	0.0167	0.144	ND		mg/Kg	01/12/19	3:35	MT	436542
Pyridine	SW8270C	1	0.0438	0.720	ND		mg/Kg	01/12/19	3:35	MT	436542
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**71.0**		%	01/12/19	3:35	MT	436542
Phenol-d6 (S)	SW8270C		24 - 113		**77.4**		%	01/12/19	3:35	MT	436542
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**84.0**		%	01/12/19	3:35	MT	436542
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**80.9**		%	01/12/19	3:35	MT	436542
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**79.4**		%	01/12/19	3:35	MT	436542
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**83.5**		%	01/12/19	3:35	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-5	**Lab Sample ID:**	1901065-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:16		
SDG:			

Prep Method:	3546_TPHSG	**Prep Batch Date/Time:**	1/10/19	1:44:00PM
Prep Batch ID:	1110230	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	**13.4**	x	mg/Kg	01/11/19	15:45	AW	436551
TPH as Motor Oil (SG)	SW8015B	1	3.2	10	**16.0**		mg/Kg	01/11/19	15:45	AW	436551
			Acceptance Limits								
Pentacosane (S)	SW8015B		40 - 120		**86.3**		%	01/11/19	15:45	AW	436551

NOTE: x-Diesel value the result of overlap of Oil range into Diesel range

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-5	**Lab Sample ID:**	1901065-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:16		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 11:43:00AM
Prep Batch ID:	1110285	**Prep Analyst:**	JFORT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	0.0012	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Chloromethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Vinyl Chloride	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Bromomethane	SW8260B	1	0.0027	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Chloroethane	SW8260B	1	0.0030	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Trichlorofluoromethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,1-Dichloroethene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Freon 113	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Methylene Chloride	SW8260B	1	0.0071	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
trans-1,2-Dichloroethene	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
MTBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
tert-Butanol	SW8260B	1	0.012	0.050	ND		mg/Kg	01/11/19	16:00	JF	436591
Diisopropyl ether (DIPE)	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,1-Dichloroethane	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
ETBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
cis-1,2-Dichloroethene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
2,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Bromochloromethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Chloroform	SW8260B	1	0.0024	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Carbon Tetrachloride	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,1,1-Trichloroethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,1-Dichloropropene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Benzene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
TAME	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,2-Dichloroethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Trichloroethylene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Dibromomethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Bromodichloromethane	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
cis-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Toluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Tetrachloroethylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
trans-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,1,2-Trichloroethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Dibromochloromethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-5	**Lab Sample ID:**	1901065-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:16		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 11:43:00AM
Prep Batch ID:	1110285	**Prep Analyst:**	JFORT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,3-Dichloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,2-Dibromoethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Chlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Ethyl Benzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,1,1,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
m,p-Xylene	SW8260B	1	0.0032	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
o-Xylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Styrene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Bromoform	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Isopropyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
n-Propylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Bromobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,1,2,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
2-Chlorotoluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,3,5-Trimethylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,2,3-Trichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
4-Chlorotoluene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
tert-Butylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,2,4-Trimethylbenzene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
sec-Butyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
p-Isopropyltoluene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,3-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,4-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
n-Butylbenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,2-Dichlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,2-Dibromo-3-Chloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Hexachlorobutadiene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,2,4-Trichlorobenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
Naphthalene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
1,2,3-Trichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
2-Butanone	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	16:00	JF	436591
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**99.7**		%	01/11/19	16:00	JF	436591
(S) Toluene-d8	SW8260B		55.2 - 133		**101**		%	01/11/19	16:00	JF	436591
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**93.7**		%	01/11/19	16:00	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-5	**Lab Sample ID:**	1901065-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:16		
SDG:			

Prep Method:	5035GRO	**Prep Batch Date/Time:**	1/11/19	11:43:00AM
Prep Batch ID:	1110288	**Prep Analyst:**	JFORT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH(Gasoline)	8260TPH	1	0.043	0.10	ND		mg/Kg	01/11/19	16:00	JF	436591
(S) 4-Bromofluorobenzene	8260TPH		43.9 - 127		**72.1**		%	01/11/19	16:00	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-8	**Lab Sample ID:**	1901065-008A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:38		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19 4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	01/12/19	4:05	MT	436542
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	01/12/19	4:05	MT	436542
Bis(2-chloroethyl) ether	SW8270C	1	13.3	144	ND		ug/Kg	01/12/19	4:05	MT	436542
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	01/12/19	4:05	MT	436542
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	01/12/19	4:05	MT	436542
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	01/12/19	4:05	MT	436542
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	01/12/19	4:05	MT	436542
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	01/12/19	4:05	MT	436542
NMP	SW8270C	1	68.0	720	ND		ug/Kg	01/12/19	4:05	MT	436542
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	01/12/19	4:05	MT	436542
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	01/12/19	4:05	MT	436542
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	01/12/19	4:05	MT	436542
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	01/12/19	4:05	MT	436542
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	01/12/19	4:05	MT	436542
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	01/12/19	4:05	MT	436542
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	01/12/19	4:05	MT	436542
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	01/12/19	4:05	MT	436542
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	01/12/19	4:05	MT	436542
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	01/12/19	4:05	MT	436542
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	01/12/19	4:05	MT	436542
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	01/12/19	4:05	MT	436542
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	01/12/19	4:05	MT	436542
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	01/12/19	4:05	MT	436542
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	01/12/19	4:05	MT	436542
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	01/12/19	4:05	MT	436542
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	01/12/19	4:05	MT	436542
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	01/12/19	4:05	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-8	**Lab Sample ID:**	1901065-008A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:38		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19 4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	01/12/19	4:05	MT	436542
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	01/12/19	4:05	MT	436542
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	01/12/19	4:05	MT	436542
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	01/12/19	4:05	MT	436542
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	01/12/19	4:05	MT	436542
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	01/12/19	4:05	MT	436542
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	01/12/19	4:05	MT	436542
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	01/12/19	4:05	MT	436542
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	01/12/19	4:05	MT	436542
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	01/12/19	4:05	MT	436542
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	01/12/19	4:05	MT	436542
4-Chlorophenyl phenyl ether	SW8270C	1	9.32	144	ND		ug/Kg	01/12/19	4:05	MT	436542
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	01/12/19	4:05	MT	436542
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	01/12/19	4:05	MT	436542
4-Bromophenyl phenyl ether	SW8270C	1	8.23	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	01/12/19	4:05	MT	436542
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Benzidine	SW8270C	1	147	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Benzyl butyl phthalate	SW8270C	1	21.0	720	ND		ug/Kg	01/12/19	4:05	MT	436542
Benz[a]anthracene	SW8270C	1	9.80	144	ND		ug/Kg	01/12/19	4:05	MT	436542
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	01/12/19	4:05	MT	436542
Di-n-octyl phthalate	SW8270C	1	12.3	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Benzo[b]fluoranthene	SW8270C	1	12.0	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Benzo[k]fluoranthene	SW8270C	1	8.16	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Benzo[a]pyrene	SW8270C	1	9.80	144	ND		ug/Kg	01/12/19	4:05	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-8	**Lab Sample ID:**	1901065-008A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:38		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19	4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Indeno[1,2,3-cd]pyrene	SW8270C	1	13.8	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Dibenz[a,h]anthracene	SW8270C	1	12.7	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Benzo[g,h,i]perylene	SW8270C	1	16.7	144	ND		ug/Kg	01/12/19	4:05	MT	436542
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	01/12/19	4:05	MT	436542
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**69.9**		%	01/12/19	4:05	MT	436542
Phenol-d6 (S)	SW8270C		24 - 113		**75.9**		%	01/12/19	4:05	MT	436542
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**83.2**		%	01/12/19	4:05	MT	436542
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**81.0**		%	01/12/19	4:05	MT	436542
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**79.2**		%	01/12/19	4:05	MT	436542
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**82.1**		%	01/12/19	4:05	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-8	**Lab Sample ID:**	1901065-008A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:38		
SDG:			

Prep Method:	3546_TPHSG	**Prep Batch Date/Time:**	1/10/19 1:44:00PM
Prep Batch ID:	1110230	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	**8.98**	x	mg/Kg	01/11/19	16:09	AW	436551
TPH as Motor Oil (SG)	SW8015B	1	3.2	10	**11.4**		mg/Kg	01/11/19	16:09	AW	436551
			Acceptance Limits								
Pentacosane (S)	SW8015B		40 - 120		**69.4**		%	01/11/19	16:09	AW	436551

NOTE: x-Diesel value the result of overlap of Oil range into Diesel range

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-8	**Lab Sample ID:**	1901065-008A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:38		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 1:42:00PM
Prep Batch ID:	1110299	**Prep Analyst:**	NPAR

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	01/11/19	20:09	NP	436585
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	01/11/19	20:09	NP	436585
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	01/11/19	20:09	NP	436585
tert-Butanol	SW8260B	1	12	50	ND		ug/Kg	01/11/19	20:09	NP	436585
Diisopropyl ether (DIPE)	SW8260B	1	2.3	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	01/11/19	20:09	NP	436585
ETBE	SW8260B	1	2.3	10	ND		ug/Kg	01/11/19	20:09	NP	436585
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	01/11/19	20:09	NP	436585
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	01/11/19	20:09	NP	436585
TAME	SW8260B	1	2.3	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Trichloroethylene	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	01/11/19	20:09	NP	436585
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Tetrachloroethylene	SW8260B	1	1.7	10	ND		ug/Kg	01/11/19	20:09	NP	436585
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	01/11/19	20:09	NP	436585

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-8	**Lab Sample ID:**	1901065-008A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:38		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 1:42:00PM
Prep Batch ID:	1110299	**Prep Analyst:**	NPAR

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Ethyl Benzene	SW8260B	1	1.7	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	01/11/19	20:09	NP	436585
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	01/11/19	20:09	NP	436585
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	01/11/19	20:09	NP	436585
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	01/11/19	20:09	NP	436585
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	01/11/19	20:09	NP	436585
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	01/11/19	20:09	NP	436585
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	01/11/19	20:09	NP	436585
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	01/11/19	20:09	NP	436585
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	01/11/19	20:09	NP	436585
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	01/11/19	20:09	NP	436585
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	01/11/19	20:09	NP	436585
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	01/11/19	20:09	NP	436585
2-Butanone	SW8260B	1	2.3	10	ND		ug/Kg	01/11/19	20:09	NP	436585
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**104**		%	01/11/19	20:09	NP	436585
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	01/11/19	20:09	NP	436585
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**111**		%	01/11/19	20:09	NP	436585

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-8	**Lab Sample ID:**	1901065-008A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 9:38		
SDG:			

Prep Method:	5035GRO	**Prep Batch Date/Time:**	1/11/19	11:43:00AM
Prep Batch ID:	1110288	**Prep Analyst:**	JFORT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH(Gasoline)	8260TPH	1	0.043	0.10	ND		mg/Kg	01/11/19	16:31	JF	436591
(S) 4-Bromofluorobenzene	8260TPH		43.9 - 127		**67.8**		%	01/11/19	16:31	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-11	**Lab Sample ID:**	1901065-011A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 10:38		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19 4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	01/12/19	4:35	MT	436542
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	01/12/19	4:35	MT	436542
Bis(2-chloroethyl) ether	SW8270C	1	13.3	144	ND		ug/Kg	01/12/19	4:35	MT	436542
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	01/12/19	4:35	MT	436542
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	01/12/19	4:35	MT	436542
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	01/12/19	4:35	MT	436542
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	01/12/19	4:35	MT	436542
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	01/12/19	4:35	MT	436542
NMP	SW8270C	1	68.0	720	ND		ug/Kg	01/12/19	4:35	MT	436542
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	01/12/19	4:35	MT	436542
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	01/12/19	4:35	MT	436542
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	01/12/19	4:35	MT	436542
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	01/12/19	4:35	MT	436542
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	01/12/19	4:35	MT	436542
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	01/12/19	4:35	MT	436542
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	01/12/19	4:35	MT	436542
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	01/12/19	4:35	MT	436542
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	01/12/19	4:35	MT	436542
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	01/12/19	4:35	MT	436542
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	01/12/19	4:35	MT	436542
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	01/12/19	4:35	MT	436542
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	01/12/19	4:35	MT	436542
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	01/12/19	4:35	MT	436542
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	01/12/19	4:35	MT	436542
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	01/12/19	4:35	MT	436542
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	01/12/19	4:35	MT	436542
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	01/12/19	4:35	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-11	**Lab Sample ID:**	1901065-011A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 10:38		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19	4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	01/12/19	4:35	MT	436542
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	01/12/19	4:35	MT	436542
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	01/12/19	4:35	MT	436542
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	01/12/19	4:35	MT	436542
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	01/12/19	4:35	MT	436542
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	01/12/19	4:35	MT	436542
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	01/12/19	4:35	MT	436542
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	01/12/19	4:35	MT	436542
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	01/12/19	4:35	MT	436542
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	01/12/19	4:35	MT	436542
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	01/12/19	4:35	MT	436542
4-Chlorophenyl phenyl ether	SW8270C	1	9.32	144	ND		ug/Kg	01/12/19	4:35	MT	436542
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	01/12/19	4:35	MT	436542
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	01/12/19	4:35	MT	436542
4-Bromophenyl phenyl ether	SW8270C	1	8.23	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	01/12/19	4:35	MT	436542
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Benzidine	SW8270C	1	147	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Benzyl butyl phthalate	SW8270C	1	21.0	720	ND		ug/Kg	01/12/19	4:35	MT	436542
Benz[a]anthracene	SW8270C	1	9.80	144	ND		ug/Kg	01/12/19	4:35	MT	436542
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	01/12/19	4:35	MT	436542
Di-n-octyl phthalate	SW8270C	1	12.3	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Benzo[b]fluoranthene	SW8270C	1	12.0	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Benzo[k]fluoranthene	SW8270C	1	8.16	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Benzo[a]pyrene	SW8270C	1	9.80	144	ND		ug/Kg	01/12/19	4:35	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-11	**Lab Sample ID:**	1901065-011A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 10:38		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	1/10/19	4:33:00PM
Prep Batch ID:	1110233	**Prep Analyst:**	LIMBAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Indeno[1,2,3-cd]pyrene	SW8270C	1	13.8	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Dibenz[a,h]anthracene	SW8270C	1	12.7	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Benzo[g,h,i]perylene	SW8270C	1	16.7	144	ND		ug/Kg	01/12/19	4:35	MT	436542
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	01/12/19	4:35	MT	436542
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**75.7**		%	01/12/19	4:35	MT	436542
Phenol-d6 (S)	SW8270C		24 - 113		**80.6**		%	01/12/19	4:35	MT	436542
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**92.7**		%	01/12/19	4:35	MT	436542
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**80.6**		%	01/12/19	4:35	MT	436542
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**80.9**		%	01/12/19	4:35	MT	436542
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**84.9**		%	01/12/19	4:35	MT	436542

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-11	**Lab Sample ID:**	1901065-011A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 10:38		
SDG:			

Prep Method:	3546_TPHSG	**Prep Batch Date/Time:**	1/10/19	1:44:00PM
Prep Batch ID:	1110230	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	**11.1**	x	mg/Kg	01/01/19	16:32	AW	436551
TPH as Motor Oil (SG)	SW8015B	1	3.2	10	**11.8**		mg/Kg	01/01/19	16:32	AW	436551
			Acceptance Limits								
Pentacosane (S)	SW8015B		40 - 120		**63.8**		%	01/01/19	16:32	AW	436551

NOTE: x-Diesel value the result of overlap of Oil range into Diesel range

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-11	**Lab Sample ID:**	1901065-011A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 10:38		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 11:43:00AM
Prep Batch ID:	1110285	**Prep Analyst:**	JFORT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	0.0012	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Chloromethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Vinyl Chloride	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Bromomethane	SW8260B	1	0.0027	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Chloroethane	SW8260B	1	0.0030	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Trichlorofluoromethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,1-Dichloroethene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Freon 113	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Methylene Chloride	SW8260B	1	0.0071	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
trans-1,2-Dichloroethene	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
MTBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
tert-Butanol	SW8260B	1	0.012	0.050	ND		mg/Kg	01/11/19	17:00	JF	436591
Diisopropyl ether (DIPE)	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,1-Dichloroethane	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
ETBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
cis-1,2-Dichloroethene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
2,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Bromochloromethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Chloroform	SW8260B	1	0.0024	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Carbon Tetrachloride	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,1,1-Trichloroethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,1-Dichloropropene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Benzene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
TAME	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,2-Dichloroethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Trichloroethylene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Dibromomethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Bromodichloromethane	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
cis-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Toluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Tetrachloroethylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
trans-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,1,2-Trichloroethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Dibromochloromethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-11	**Lab Sample ID:**	1901065-011A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 10:38		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 11:43:00AM
Prep Batch ID:	1110285	**Prep Analyst:**	JFORT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,3-Dichloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,2-Dibromoethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Chlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Ethyl Benzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,1,1,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
m,p-Xylene	SW8260B	1	0.0032	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
o-Xylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Styrene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Bromoform	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Isopropyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
n-Propylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Bromobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,1,2,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
2-Chlorotoluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,3,5-Trimethylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,2,3-Trichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
4-Chlorotoluene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
tert-Butylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,2,4-Trimethylbenzene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
sec-Butyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
p-Isopropyltoluene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,3-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,4-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
n-Butylbenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,2-Dichlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,2-Dibromo-3-Chloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Hexachlorobutadiene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,2,4-Trichlorobenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
Naphthalene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
1,2,3-Trichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
2-Butanone	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	17:00	JF	436591
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**101**		%	01/11/19	17:00	JF	436591
(S) Toluene-d8	SW8260B		55.2 - 133		**98.9**		%	01/11/19	17:00	JF	436591
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**93.8**		%	01/11/19	17:00	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	SB-11	**Lab Sample ID:**	1901065-011A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 10:38		
SDG:			

Prep Method:	5035GRO	**Prep Batch Date/Time:**	1/11/19	11:43:00AM
Prep Batch ID:	1110288	**Prep Analyst:**	JFORT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH(Gasoline)	8260TPH	1	0.043	0.10	ND		mg/Kg	01/11/19	17:00	JF	436591
(S) 4-Bromofluorobenzene	8260TPH		43.9 - 127		**78.4**		%	01/11/19	17:00	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 1	**Lab Sample ID:**	1901065-013A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	1/11/19	3:00:00PM
Prep Batch ID:	1110284	**Prep Analyst:**	IRNAZ	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	01/14/19	17:04	BJAY	436587

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 1	**Lab Sample ID:**	1901065-013A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	1/11/19 2:10:00PM
Prep Batch ID:	1110262	**Prep Analyst:**	IRNAZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	01/14/19	13:34	PPATEL	436569
Arsenic	SW6010B	1	0.15	1.30	**2.83**		mg/Kg	01/14/19	13:34	PPATEL	436569
Barium	SW6010B	1	0.055	5.00	**85.0**		mg/Kg	01/14/19	13:34	PPATEL	436569
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	01/14/19	13:34	PPATEL	436569
Cadmium	SW6010B	1	0.10	5.00	ND		mg/Kg	01/14/19	13:34	PPATEL	436569
Chromium	SW6010B	1	0.075	5.00	**16.2**		mg/Kg	01/14/19	13:34	PPATEL	436569
Cobalt	SW6010B	1	0.070	5.00	**8.00**		mg/Kg	01/14/19	13:34	PPATEL	436569
Copper	SW6010B	1	0.20	5.00	**15.2**		mg/Kg	01/14/19	13:34	PPATEL	436569
Lead	SW6010B	1	0.10	3.00	**20.2**		mg/Kg	01/14/19	13:34	PPATEL	436569
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	01/14/19	13:34	PPATEL	436569
Nickel	SW6010B	1	0.50	5.00	**15.3**		mg/Kg	01/14/19	13:34	PPATEL	436569
Selenium	SW6010B	1	0.22	5.00	ND		mg/Kg	01/14/19	13:34	PPATEL	436569
Silver	SW6010B	1	0.15	5.00	ND		mg/Kg	01/14/19	13:34	PPATEL	436569
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	01/14/19	13:34	PPATEL	436569
Vanadium	SW6010B	1	0.10	5.00	**28.3**		mg/Kg	01/14/19	13:34	PPATEL	436569
Zinc	SW6010B	1	0.30	5.00	**45.1**		mg/Kg	01/14/19	13:34	PPATEL	436569

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 1	**Lab Sample ID:**	1901065-013A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	1/11/19	12:52:00PM
Prep Batch ID:	1110248	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	0.053	0.10	ND		mg/Kg	01/12/19	0:27	mk	436573
Aroclor1221	SW8082A	1	0.0050	0.10	ND		mg/Kg	01/12/19	0:27	mk	436573
Aroclor1232	SW8082A	1	0.017	0.10	ND		mg/Kg	01/12/19	0:27	mk	436573
Aroclor1242	SW8082A	1	0.0030	0.10	ND		mg/Kg	01/12/19	0:27	mk	436573
Aroclor1248	SW8082A	1	0.0020	0.10	ND		mg/Kg	01/12/19	0:27	mk	436573
Aroclor1254	SW8082A	1	0.0020	0.10	ND		mg/Kg	01/12/19	0:27	mk	436573
Aroclor1260	SW8082A	1	0.036	0.10	ND		mg/Kg	01/12/19	0:27	mk	436573
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**87.0**		%	01/12/19	0:27	mk	436573
DCBP (S)	SW8082A		48 - 135		**82.0**		%	01/12/19	0:27	mk	436573

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 1	**Lab Sample ID:**	1901065-013A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	1/14/19 1:12:00PM
Prep Batch ID:	1110273	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
The results shown below are reported using their MDL.											
alpha-BHC	SW8081B	20	2.5	40	ND		ug/Kg	01/15/19	14:09	LA	436602
gamma-BHC (Lindane)	SW8081B	20	3.2	40	ND		ug/Kg	01/15/19	14:09	LA	436602
beta-BHC	SW8081B	20	6.3	40	ND		ug/Kg	01/15/19	14:09	LA	436602
delta-BHC	SW8081B	20	3.1	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Heptachlor	SW8081B	20	2.1	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Aldrin	SW8081B	20	3.9	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Heptachlor Epoxide	SW8081B	20	1.6	40	ND		ug/Kg	01/15/19	14:09	LA	436602
gamma-Chlordane	SW8081B	20	3.3	40	ND		ug/Kg	01/15/19	14:09	LA	436602
alpha-Chlordane	SW8081B	20	3.5	40	ND		ug/Kg	01/15/19	14:09	LA	436602
4,4-DDE	SW8081B	20	3.9	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Endosulfan I	SW8081B	20	3.7	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Dieldrin	SW8081B	20	3.0	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Endrin	SW8081B	20	3.8	40	ND		ug/Kg	01/15/19	14:09	LA	436602
4,4-DDD	SW8081B	20	11	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Endosulfan II	SW8081B	20	12	40	ND		ug/Kg	01/15/19	14:09	LA	436602
4,4-DDT	SW8081B	20	2.6	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Endrin Aldehyde	SW8081B	20	3.0	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Methoxychlor	SW8081B	20	4.0	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Endosulfan Sulfate	SW8081B	20	2.3	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Endrin Ketone	SW8081B	20	1.9	40	ND		ug/Kg	01/15/19	14:09	LA	436602
Chlordane	SW8081B	20	42	400	ND		ug/Kg	01/15/19	14:09	LA	436602
Toxaphene	SW8081B	20	170	1000	ND		ug/Kg	01/15/19	14:09	LA	436602
			Acceptance Limits								
TCMX (S)	SW8081B		48 - 125		**0.000**	D	%	01/15/19	14:09	LA	436602
DCBP (S)	SW8081B		38 - 135		**0.000**	D	%	01/15/19	14:09	LA	436602

NOTE: Sample diluted due to nature of the matrix (dark, viscous extract)

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 2	**Lab Sample ID:**	1901065-014A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	1/11/19	3:00:00PM
Prep Batch ID:	1110284	**Prep Analyst:**	IRNAZ	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	01/14/19	17:11	BJAY	436587

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 2	**Lab Sample ID:**	1901065-014A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	1/11/19 2:10:00PM
Prep Batch ID:	1110262	**Prep Analyst:**	IRNAZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	01/14/19	13:44	PPATEL	436569
Arsenic	SW6010B	1	0.15	1.30	**3.84**		mg/Kg	01/14/19	13:44	PPATEL	436569
Barium	SW6010B	1	0.055	5.00	**152**		mg/Kg	01/14/19	13:44	PPATEL	436569
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	01/14/19	13:44	PPATEL	436569
Cadmium	SW6010B	1	0.10	5.00	ND		mg/Kg	01/14/19	13:44	PPATEL	436569
Chromium	SW6010B	1	0.075	5.00	**25.5**		mg/Kg	01/14/19	13:44	PPATEL	436569
Cobalt	SW6010B	1	0.070	5.00	**9.60**		mg/Kg	01/14/19	13:44	PPATEL	436569
Copper	SW6010B	1	0.20	5.00	**13.1**		mg/Kg	01/14/19	13:44	PPATEL	436569
Lead	SW6010B	1	0.10	3.00	**13.7**		mg/Kg	01/14/19	13:44	PPATEL	436569
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	01/14/19	13:44	PPATEL	436569
Nickel	SW6010B	1	0.50	5.00	**25.8**		mg/Kg	01/14/19	13:44	PPATEL	436569
Selenium	SW6010B	1	0.22	5.00	ND		mg/Kg	01/14/19	13:44	PPATEL	436569
Silver	SW6010B	1	0.15	5.00	ND		mg/Kg	01/14/19	13:44	PPATEL	436569
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	01/14/19	13:44	PPATEL	436569
Vanadium	SW6010B	1	0.10	5.00	**27.5**		mg/Kg	01/14/19	13:44	PPATEL	436569
Zinc	SW6010B	1	0.30	5.00	**35.1**		mg/Kg	01/14/19	13:44	PPATEL	436569

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 2	**Lab Sample ID:**	1901065-014A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	1/11/19	12:52:00PM
Prep Batch ID:	1110248	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	0.053	0.10	ND		mg/Kg	01/12/19	0:42	mk	436573
Aroclor1221	SW8082A	1	0.0050	0.10	ND		mg/Kg	01/12/19	0:42	mk	436573
Aroclor1232	SW8082A	1	0.017	0.10	ND		mg/Kg	01/12/19	0:42	mk	436573
Aroclor1242	SW8082A	1	0.0030	0.10	ND		mg/Kg	01/12/19	0:42	mk	436573
Aroclor1248	SW8082A	1	0.0020	0.10	ND		mg/Kg	01/12/19	0:42	mk	436573
Aroclor1254	SW8082A	1	0.0020	0.10	ND		mg/Kg	01/12/19	0:42	mk	436573
Aroclor1260	SW8082A	1	0.036	0.10	ND		mg/Kg	01/12/19	0:42	mk	436573
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**94.0**		%	01/12/19	0:42	mk	436573
DCBP (S)	SW8082A		48 - 135		**86.0**		%	01/12/19	0:42	mk	436573

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 2	**Lab Sample ID:**	1901065-014A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	1/14/19 1:12:00PM
Prep Batch ID:	1110273	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
The results shown below are reported using their MDL.											
alpha-BHC	SW8081B	20	2.5	40	ND		ug/Kg	01/15/19	14:22	LA	436602
gamma-BHC (Lindane)	SW8081B	20	3.2	40	ND		ug/Kg	01/15/19	14:22	LA	436602
beta-BHC	SW8081B	20	6.3	40	ND		ug/Kg	01/15/19	14:22	LA	436602
delta-BHC	SW8081B	20	3.1	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Heptachlor	SW8081B	20	2.1	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Aldrin	SW8081B	20	3.9	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Heptachlor Epoxide	SW8081B	20	1.6	40	ND		ug/Kg	01/15/19	14:22	LA	436602
gamma-Chlordane	SW8081B	20	3.3	40	ND		ug/Kg	01/15/19	14:22	LA	436602
alpha-Chlordane	SW8081B	20	3.5	40	ND		ug/Kg	01/15/19	14:22	LA	436602
4,4-DDE	SW8081B	20	3.9	40	**8.34**	J	ug/Kg	01/15/19	14:22	LA	436602
Endosulfan I	SW8081B	20	3.7	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Dieldrin	SW8081B	20	3.0	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Endrin	SW8081B	20	3.8	40	ND		ug/Kg	01/15/19	14:22	LA	436602
4,4-DDD	SW8081B	20	11	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Endosulfan II	SW8081B	20	12	40	ND		ug/Kg	01/15/19	14:22	LA	436602
4,4-DDT	SW8081B	20	2.6	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Endrin Aldehyde	SW8081B	20	3.0	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Methoxychlor	SW8081B	20	4.0	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Endosulfan Sulfate	SW8081B	20	2.3	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Endrin Ketone	SW8081B	20	1.9	40	ND		ug/Kg	01/15/19	14:22	LA	436602
Chlordane	SW8081B	20	42	400	ND		ug/Kg	01/15/19	14:22	LA	436602
Toxaphene	SW8081B	20	170	1000	ND		ug/Kg	01/15/19	14:22	LA	436602
			Acceptance Limits								
TCMX (S)	SW8081B		48 - 125		**0.000**	D	%	01/15/19	14:22	LA	436602
DCBP (S)	SW8081B		38 - 135		**0.000**	D	%	01/15/19	14:22	LA	436602

NOTE: Sample diluted due to nature of the matrix (dark, viscous extract)

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 3	**Lab Sample ID:**	1901065-015A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	1/11/19	3:00:00PM
Prep Batch ID:	1110284	**Prep Analyst:**	IRNAZ	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	01/14/19	17:13	BJAY	436587

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 3	**Lab Sample ID:**	1901065-015A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	1/11/19 2:10:00PM
Prep Batch ID:	1110262	**Prep Analyst:**	IRNAZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	01/14/19	13:47	PPATEL	436569
Arsenic	SW6010B	1	0.15	1.30	**3.99**		mg/Kg	01/14/19	13:47	PPATEL	436569
Barium	SW6010B	1	0.055	5.00	**132**		mg/Kg	01/14/19	13:47	PPATEL	436569
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	01/14/19	13:47	PPATEL	436569
Cadmium	SW6010B	1	0.10	5.00	ND		mg/Kg	01/14/19	13:47	PPATEL	436569
Chromium	SW6010B	1	0.075	5.00	**28.6**		mg/Kg	01/14/19	13:47	PPATEL	436569
Cobalt	SW6010B	1	0.070	5.00	**7.80**		mg/Kg	01/14/19	13:47	PPATEL	436569
Copper	SW6010B	1	0.20	5.00	**16.1**		mg/Kg	01/14/19	13:47	PPATEL	436569
Lead	SW6010B	1	0.10	3.00	**17.0**		mg/Kg	01/14/19	13:47	PPATEL	436569
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	01/14/19	13:47	PPATEL	436569
Nickel	SW6010B	1	0.50	5.00	**23.3**		mg/Kg	01/14/19	13:47	PPATEL	436569
Selenium	SW6010B	1	0.22	5.00	ND		mg/Kg	01/14/19	13:47	PPATEL	436569
Silver	SW6010B	1	0.15	5.00	ND		mg/Kg	01/14/19	13:47	PPATEL	436569
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	01/14/19	13:47	PPATEL	436569
Vanadium	SW6010B	1	0.10	5.00	**28.8**		mg/Kg	01/14/19	13:47	PPATEL	436569
Zinc	SW6010B	1	0.30	5.00	**35.3**		mg/Kg	01/14/19	13:47	PPATEL	436569

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 3	**Lab Sample ID:**	1901065-015A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	1/11/19	12:52:00PM
Prep Batch ID:	1110248	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	0.053	0.10	ND		mg/Kg	01/12/19	0:57	mk	436573
Aroclor1221	SW8082A	1	0.0050	0.10	ND		mg/Kg	01/12/19	0:57	mk	436573
Aroclor1232	SW8082A	1	0.017	0.10	ND		mg/Kg	01/12/19	0:57	mk	436573
Aroclor1242	SW8082A	1	0.0030	0.10	ND		mg/Kg	01/12/19	0:57	mk	436573
Aroclor1248	SW8082A	1	0.0020	0.10	ND		mg/Kg	01/12/19	0:57	mk	436573
Aroclor1254	SW8082A	1	0.0020	0.10	ND		mg/Kg	01/12/19	0:57	mk	436573
Aroclor1260	SW8082A	1	0.036	0.10	ND		mg/Kg	01/12/19	0:57	mk	436573
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**90.0**		%	01/12/19	0:57	mk	436573
DCBP (S)	SW8082A		48 - 135		**82.0**		%	01/12/19	0:57	mk	436573

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 3	**Lab Sample ID:**	1901065-015A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	1/14/19 1:12:00PM
Prep Batch ID:	1110273	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
The results shown below are reported using their MDL.											
alpha-BHC	SW8081B	20	2.5	40	ND		ug/Kg	01/15/19	14:36	LA	436602
gamma-BHC (Lindane)	SW8081B	20	3.2	40	ND		ug/Kg	01/15/19	14:36	LA	436602
beta-BHC	SW8081B	20	6.3	40	ND		ug/Kg	01/15/19	14:36	LA	436602
delta-BHC	SW8081B	20	3.1	40	ND		ug/Kg	01/15/19	14:36	LA	436602
Heptachlor	SW8081B	20	2.1	40	**11.0**	J	ug/Kg	01/15/19	14:36	LA	436602
Aldrin	SW8081B	20	3.9	40	ND		ug/Kg	01/15/19	14:36	LA	436602
Heptachlor Epoxide	SW8081B	20	1.6	40	ND		ug/Kg	01/15/19	14:36	LA	436602
gamma-Chlordane	SW8081B	20	3.3	40	ND		ug/Kg	01/15/19	14:36	LA	436602
alpha-Chlordane	SW8081B	20	3.5	40	ND		ug/Kg	01/15/19	14:36	LA	436602
4,4-DDE	SW8081B	20	3.9	40	**5.80**	J	ug/Kg	01/15/19	14:36	LA	436602
Endosulfan I	SW8081B	20	3.7	40	ND		ug/Kg	01/15/19	14:36	LA	436602
Dieldrin	SW8081B	20	3.0	40	ND		ug/Kg	01/15/19	14:36	LA	436602
Endrin	SW8081B	20	3.8	40	ND		ug/Kg	01/15/19	14:36	LA	436602
4,4-DDD	SW8081B	20	11	40	ND		ug/Kg	01/15/19	14:36	LA	436602
Endosulfan II	SW8081B	20	12	40	ND		ug/Kg	01/15/19	14:36	LA	436602
4,4-DDT	SW8081B	20	2.6	40	ND		ug/Kg	01/15/19	14:36	LA	436602
Endrin Aldehyde	SW8081B	20	3.0	40	ND		ug/Kg	01/15/19	14:36	LA	436602
Methoxychlor	SW8081B	20	4.0	40	ND		ug/Kg	01/15/19	14:36	LA	436602
Endosulfan Sulfate	SW8081B	20	2.3	40	ND		ug/Kg	01/15/19	14:36	LA	436602
Endrin Ketone	SW8081B	20	1.9	40	ND		ug/Kg	01/15/19	14:36	LA	436602
Chlordane	SW8081B	20	42	400	ND		ug/Kg	01/15/19	14:36	LA	436602
Toxaphene	SW8081B	20	170	1000	ND		ug/Kg	01/15/19	14:36	LA	436602
			Acceptance Limits								
TCMX (S)	SW8081B		48 - 125		**0.000**	D	%	01/15/19	14:36	LA	436602
DCBP (S)	SW8081B		38 - 135		**0.000**	D	%	01/15/19	14:36	LA	436602

NOTE: Sample diluted due to nature of the matrix (dark, viscous extract)

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 4	**Lab Sample ID:**	1901065-016A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	1/11/19	3:00:00PM
Prep Batch ID:	1110284	**Prep Analyst:**	IRNAZ	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	01/14/19	17:15	BJAY	436587

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 4	**Lab Sample ID:**	1901065-016A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	1/11/19 2:10:00PM
Prep Batch ID:	1110262	**Prep Analyst:**	IRNAZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	01/14/19	13:51	PPATEL	436569
Arsenic	SW6010B	1	0.15	1.30	**2.84**		mg/Kg	01/14/19	13:51	PPATEL	436569
Barium	SW6010B	1	0.055	5.00	**84.5**		mg/Kg	01/14/19	13:51	PPATEL	436569
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	01/14/19	13:51	PPATEL	436569
Cadmium	SW6010B	1	0.10	5.00	ND		mg/Kg	01/14/19	13:51	PPATEL	436569
Chromium	SW6010B	1	0.075	5.00	**15.5**		mg/Kg	01/14/19	13:51	PPATEL	436569
Cobalt	SW6010B	1	0.070	5.00	**6.50**		mg/Kg	01/14/19	13:51	PPATEL	436569
Copper	SW6010B	1	0.20	5.00	**8.50**		mg/Kg	01/14/19	13:51	PPATEL	436569
Lead	SW6010B	1	0.10	3.00	**12.4**		mg/Kg	01/14/19	13:51	PPATEL	436569
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	01/14/19	13:51	PPATEL	436569
Nickel	SW6010B	1	0.50	5.00	**13.2**		mg/Kg	01/14/19	13:51	PPATEL	436569
Selenium	SW6010B	1	0.22	5.00	ND		mg/Kg	01/14/19	13:51	PPATEL	436569
Silver	SW6010B	1	0.15	5.00	ND		mg/Kg	01/14/19	13:51	PPATEL	436569
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	01/14/19	13:51	PPATEL	436569
Vanadium	SW6010B	1	0.10	5.00	**17.5**		mg/Kg	01/14/19	13:51	PPATEL	436569
Zinc	SW6010B	1	0.30	5.00	**15.6**		mg/Kg	01/14/19	13:51	PPATEL	436569

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 4	**Lab Sample ID:**	1901065-016A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	1/11/19	12:52:00PM
Prep Batch ID:	1110248	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	0.053	0.10	ND		mg/Kg	01/12/19	1:12	mk	436573
Aroclor1221	SW8082A	1	0.0050	0.10	ND		mg/Kg	01/12/19	1:12	mk	436573
Aroclor1232	SW8082A	1	0.017	0.10	ND		mg/Kg	01/12/19	1:12	mk	436573
Aroclor1242	SW8082A	1	0.0030	0.10	ND		mg/Kg	01/12/19	1:12	mk	436573
Aroclor1248	SW8082A	1	0.0020	0.10	ND		mg/Kg	01/12/19	1:12	mk	436573
Aroclor1254	SW8082A	1	0.0020	0.10	ND		mg/Kg	01/12/19	1:12	mk	436573
Aroclor1260	SW8082A	1	0.036	0.10	ND		mg/Kg	01/12/19	1:12	mk	436573
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**94.0**		%	01/12/19	1:12	mk	436573
DCBP (S)	SW8082A		48 - 135		**87.0**		%	01/12/19	1:12	mk	436573

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/10/19, 4:20 pm
Date Reported: 01/15/19

Client Sample ID:	COMP 4	**Lab Sample ID:**	1901065-016A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 /		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	1/14/19 1:12:00PM
Prep Batch ID:	1110273	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
The results shown below are reported using their MDL.											
alpha-BHC	SW8081B	20	2.5	40	ND		ug/Kg	01/15/19	14:49	LA	436602
gamma-BHC (Lindane)	SW8081B	20	3.2	40	ND		ug/Kg	01/15/19	14:49	LA	436602
beta-BHC	SW8081B	20	6.3	40	ND		ug/Kg	01/15/19	14:49	LA	436602
delta-BHC	SW8081B	20	3.1	40	ND		ug/Kg	01/15/19	14:49	LA	436602
Heptachlor	SW8081B	20	2.1	40	**40.3**		ug/Kg	01/15/19	14:49	LA	436602
Aldrin	SW8081B	20	3.9	40	ND		ug/Kg	01/15/19	14:49	LA	436602
Heptachlor Epoxide	SW8081B	20	1.6	40	ND		ug/Kg	01/15/19	14:49	LA	436602
gamma-Chlordane	SW8081B	20	3.3	40	ND		ug/Kg	01/15/19	14:49	LA	436602
alpha-Chlordane	SW8081B	20	3.5	40	ND		ug/Kg	01/15/19	14:49	LA	436602
4,4-DDE	SW8081B	20	3.9	40	ND		ug/Kg	01/15/19	14:49	LA	436602
Endosulfan I	SW8081B	20	3.7	40	ND		ug/Kg	01/15/19	14:49	LA	436602
Dieldrin	SW8081B	20	3.0	40	**5.80**	J	ug/Kg	01/15/19	14:49	LA	436602
Endrin	SW8081B	20	3.8	40	ND		ug/Kg	01/15/19	14:49	LA	436602
4,4-DDD	SW8081B	20	11	40	ND		ug/Kg	01/15/19	14:49	LA	436602
Endosulfan II	SW8081B	20	12	40	ND		ug/Kg	01/15/19	14:49	LA	436602
4,4-DDT	SW8081B	20	2.6	40	ND		ug/Kg	01/15/19	14:49	LA	436602
Endrin Aldehyde	SW8081B	20	3.0	40	ND		ug/Kg	01/15/19	14:49	LA	436602
Methoxychlor	SW8081B	20	4.0	40	ND		ug/Kg	01/15/19	14:49	LA	436602
Endosulfan Sulfate	SW8081B	20	2.3	40	ND		ug/Kg	01/15/19	14:49	LA	436602
Endrin Ketone	SW8081B	20	1.9	40	ND		ug/Kg	01/15/19	14:49	LA	436602
Chlordane	SW8081B	20	42	400	ND		ug/Kg	01/15/19	14:49	LA	436602
Toxaphene	SW8081B	20	170	1000	ND		ug/Kg	01/15/19	14:49	LA	436602
			Acceptance Limits								
TCMX (S)	SW8081B		48 - 125		**0.000**	D	%	01/15/19	14:49	LA	436602
DCBP (S)	SW8081B		38 - 135		**0.000**	D	%	01/15/19	14:49	LA	436602

NOTE: Sample diluted due to nature of the matrix (dark, viscous extract)

MB Summary Report

Work Order:	1901065	**Prep Method:**	3546_TPHSG	**Prep Date:**	01/10/19	**Prep Batch:**	1110230
Matrix:	Soil	**Analytical Method:**	SW8015B	**Analyzed Date:**	1/10/2019	**Analytical Batch:**	436551
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH as Diesel (SG)	0.85	2.0	1.28	
TPH as Motor Oil (SG)	3.2	10	ND	
Pentacosane (S)			103	

Work Order:	1901065	**Prep Method:**	3546_BNA	**Prep Date:**	01/10/19	**Prep Batch:**	1110233
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	1/10/2019	**Analytical Batch:**	436542
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
N-Nitrosodimethylamine	46.9	720	ND	
Phenol	43.8	288	ND	
Bis(2-chloroethyl) ether	13.3	144	ND	
2-Chlorophenol	47.7	288	ND	
1,3-Dichlorobenzene	13.1	144	ND	
1,4-Dichlorobenzene	14.6	144	ND	
Benzyl Alcohol	20.5	288	ND	
1,2-Dichlorobenzene	13.5	144	ND	
2-Methylphenol (o-Cresol)	29.3	288	ND	
NMP	68.0	720	ND	
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND	
N-nitroso-di-n-propylamine	13.2	144	ND	
Hexachloroethane	17.1	144	ND	
Nitrobenzene	12.8	144	ND	
Isophorone	12.2	144	ND	
2-Nitrophenol	25.4	288	ND	
2,4-Dimethylphenol	22.8	288	ND	
Benzoic Acid	41.7	288	ND	
Bis(2-Chloroethoxy)methane	9.79	144	ND	
Bis(2-chloroisopropyl)ether	12.6	144	ND	
2,4-Dichlorophenol	39.3	288	ND	
1,2,4-Trichlorobenzene	11.8	144	ND	
Naphthalene	10.6	144	ND	
2,6-Dichlorophenol	35.8	288	ND	
Hexachloro-1,3-butadiene	8.34	144	ND	
4-Chloro-3-methylphenol	33.8	288	ND	
2-Methylnaphthalene	10.4	144	ND	
1-Methylnaphthalene	12.2	144	ND	
Hexachlorocyclopentadiene	12.9	144	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901065	**Prep Method:**	3546_BNA	**Prep Date:**	01/10/19	**Prep Batch:**	1110233
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	1/10/2019	**Analytical Batch:**	436542
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
2,4,6-Trichlorophenol	35.9	288	ND		
2,4,5-Trichlorophenol	33.4	288	ND		
2-Chloronaphthalene	10.6	144	ND		
1,4-Dinitrobenzene	10.3	144	ND		
Dimethyl phthalate	14.2	720	ND		
1,3-Dinitrobenzene	10.4	144	ND		
Acenaphthylene	8.28	144	ND		
2,6-Dinitrotoluene	11.3	144	ND		
1,2-Dinitrobenzene	15.8	144	ND		
Acenaphthene	10.7	144	ND		
2,4-Dinitrophenol	77.6	720	ND		
4-Nitrophenol	54.7	720	ND		
Dibenzofuran	11.2	144	ND		
2,4-Dinitrotoluene	12.1	144	ND		
2,3,5,6-Tetrachlorophenol	27.6	288	ND		
2,3,4,6-Tetrachlorophenol	31.5	288	ND		
Diethylphthalate	13.6	720	ND		
Fluorene	10.3	144	ND		
4-Chlorophenyl phenyl ether	9.32	144	ND		
4,6-Dinitro-2-methylphenol	13.4	288	ND		
Diphenylamine	13.0	144	ND		
Azobenzene	114	144	ND		
4-Bromophenyl phenyl ether	8.23	144	ND		
Hexachlorobenzene	8.66	144	ND		
Pentachlorophenol	25.0	288	ND		
Phenanthrene	9.32	144	ND		
Anthracene	8.91	144	ND		
Carbazole	10.7	144	ND		
Di-n-butylphthalate	13.5	144	ND		
Fluoranthene	10.0	144	ND		
Benzidine	147	144	ND		
Pyrene	12.0	144	ND		
Benzyl butyl phthalate	21.0	720	ND		
Benz[a]anthracene	9.80	144	ND		
3,3-Dichlorobenzidine	118	144	ND		
Chrysene	15.2	144	ND		
Bis(2-Ethylhexyl)phthalate	15.3	720	ND		
Di-n-octyl phthalate	12.3	144	ND		
Benzo[b]fluoranthene	12.0	144	ND		
Benzo[k]fluoranthene	8.16	144	ND		
Benzo[a]pyrene	9.80	144	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901065	**Prep Method:**	3546_BNA	**Prep Date:**	01/10/19	**Prep Batch:**	1110233
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	1/10/2019	**Analytical Batch:**	436542
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Indeno[1,2,3-cd]pyrene	13.8	144	ND	
Dibenz[a,h]anthracene	12.7	144	ND	
Benzo[g,h,i]perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			78.7	
Phenol-d6 (S)			85.0	
2,4,6-Tribromophenol (S)			86.7	
2-Fluorobiphenyl (S)			84.3	
Nitrobenzene-d5 (S)			84.3	
p-Terphenyl-d14 (S)			94.1	

Work Order:	1901065	**Prep Method:**	3546_PCB	**Prep Date:**	01/11/19	**Prep Batch:**	1110248
Matrix:	Soil	**Analytical Method:**	SW8082A	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436573
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Aroclor1016	53	100	ND	
Aroclor1221	5.0	100	ND	
Aroclor1232	17	100	ND	
Aroclor1242	3.0	100	ND	
Aroclor1248	2.0	100	ND	
Aroclor1254	2.0	100	ND	
Aroclor1260	36	100	ND	
TCMX (S)			104	
DCBP (S)			106	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901065	**Prep Method:**	3050B	**Prep Date:**	01/11/19	**Prep Batch:**	1110262
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436569
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Antimony	0.050	5.00	ND		
Arsenic	0.15	1.30	ND		
Barium	0.055	5.00	0.12		
Beryllium	0.055	5.00	ND		
Cadmium	0.10	5.00	ND		
Chromium	0.075	5.00	0.087		
Cobalt	0.070	5.00	ND		
Copper	0.20	5.00	ND		
Lead	0.10	1.30	ND		
Molybdenum	0.050	5.00	0.069		
Nickel	0.50	5.00	ND		
Selenium	0.22	5.00	ND		
Silver	0.15	5.00	ND		
Thallium	0.20	5.00	ND		
Vanadium	0.10	5.00	ND		
Zinc	0.30	5.00	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901065	**Prep Method:**	3546_OCP	**Prep Date:**	01/14/19	**Prep Batch:**	1110273
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	1/15/2019	**Analytical Batch:**	436602
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
alpha-BHC	0.13	2.0	ND	
gamma-BHC (Lindane)	0.16	2.0	ND	
beta-BHC	0.32	2.0	ND	
delta-BHC	0.16	2.0	ND	
Heptachlor	0.11	2.0	ND	
Aldrin	0.20	2.0	ND	
Heptachlor Epoxide	0.078	2.0	ND	
gamma-Chlordane	0.16	2.0	ND	
alpha-Chlordane	0.17	2.0	ND	
4,4-DDE	0.19	2.0	ND	
Endosulfan I	0.18	2.0	ND	
Dieldrin	0.15	2.0	ND	
Endrin	0.19	2.0	ND	
4,4-DDD	0.57	2.0	ND	
Endosulfan II	0.58	2.0	ND	
4,4-DDT	0.13	2.0	ND	
Endrin Aldehyde	0.15	2.0	ND	
Methoxychlor	0.20	2.0	ND	
Endosulfan Sulfate	0.12	2.0	ND	
Endrin Ketone	0.094	2.0	ND	
Chlordane	2.1	20	ND	
Toxaphene	8.5	50	ND	
TCMX (S)			104	
DCBP (S)			105	

Work Order:	1901065	**Prep Method:**	7471BP	**Prep Date:**	01/11/19	**Prep Batch:**	1110284
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436587
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901065	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110285
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
tert-Butanol	12	50	ND		
Diisopropyl ether (DIPE)	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
ETBE	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethylene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethylene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethyl Benzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		

MB Summary Report

Work Order:	1901065	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110285
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
o-Xylene	1.7	10	ND	
Styrene	1.6	10	ND	
Bromoform	1.7	10	ND	
Isopropyl Benzene	1.6	10	ND	
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	2.3	
1,2,4-Trichlorobenzene	1.5	10	2.7	
Naphthalene	1.7	10	4.2	
1,2,3-Trichlorobenzene	1.7	10	3.4	
2-Butanone	1.7	10	3.8	
(S) Dibromofluoromethane			105	
(S) Toluene-d8			97.7	
(S) 4-Bromofluorobenzene			98.4	

Work Order:	1901065	**Prep Method:**	5035GRO	**Prep Date:**	01/11/19	**Prep Batch:**	1110288
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH(Gasoline)	43	100	ND	
(S) 4-Bromofluorobenzene			87.5	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901065	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110299
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436585
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
tert-Butanol	12	50	ND		
Diisopropyl ether (DIPE)	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
ETBE	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethylene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethylene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethyl Benzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901065	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110299
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436585
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
o-Xylene	1.7	10	ND	
Styrene	1.6	10	ND	
Bromoform	1.7	10	ND	
Isopropyl Benzene	1.6	10	ND	
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	ND	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	1.7	10	ND	
(S) Dibromofluoromethane			91.2	
(S) Toluene-d8			103	
(S) 4-Bromofluorobenzene			104	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901065	**Prep Method:**	3546_TPHSG	**Prep Date:**	01/10/19	**Prep Batch:**	1110230
Matrix:	Soil	**Analytical Method:**	SW8015B	**Analyzed Date:**	1/10/2019	**Analytical Batch:**	436551
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel (SG)	0.85	2.0	1.28	25.0	86.2	80.9	6.70	40 - 115	30	
TPH as Motor Oil (SG)			ND	200				40 - 120		

Work Order:	1901065	**Prep Method:**	3546_BNA	**Prep Date:**	01/10/19	**Prep Batch:**	1110233
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	1/10/2019	**Analytical Batch:**	436542
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1600	77.8	77.1	1.61	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1600	74.2	74.5	0.000	45 - 105	30	
1,4-Dichlorobenzene	14.6	144	ND	800	71.7	71.1	0.875	35 - 105	30	
N-nitroso-di-n-propylamine	183	2000	ND	1600	84.4	84.2	0.000	40 - 115	30	
1,2,4-Trichlorobenzene	164	2000	ND	800	74.3	75.7	2.00	45 - 110	30	
4-Chloro-3-methylphenol	469	4000	ND	1600	79.7	80.8	0.778	45 - 110	30	
Acenaphthene	148	2000	ND	800	76.0	76.9	1.14	45 - 110	30	
4-Nitrophenol	760	10000	ND	1600	86.2	88.0	2.15	15 - 140	30	
2,4-Dinitrotoluene	168	2000	ND	800	78.3	77.5	0.963	50 - 115	30	
Pentachlorophenol	129	2000	ND	1600	69.3	68.5	0.905	25 - 120	30	
Pyrene	166	2000		800	80.7	83.2	3.05	45 - 145	30	
2-Fluorophenol (S)				22200	80.3	80.2		25 - 121		
Phenol-d6 (S)				22200	84.9	84.6		24 - 113		
2,4,6-Tribromophenol (S)				22200	97.0	95.8		19 - 122		
2-Fluorobiphenyl (S)				11100	83.4	84.0		30 - 143		
Nitrobenzene-d5 (S)				11100	83.8	84.3		23 - 120		
p-Terphenyl-d14 (S)				11100	87.2	89.9		18 - 137		

Work Order:	1901065	**Prep Method:**	3546_PCB	**Prep Date:**	01/11/19	**Prep Batch:**	1110248
Matrix:	Soil	**Analytical Method:**	SW8082A	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436573
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	53	100	ND	600	111	107	3.06	25 - 145	30	
Aroclor1260	36	100	ND	600	94.2	89.7	4.90	30 - 145	30	
TCMX (S)				0.10	90.0	90.0		48 - 125		
DCBP (S)				0.10	102	100		48 - 135		

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901065	**Prep Method:**	3050B	**Prep Date:**	01/11/19	**Prep Batch:**	1110262
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436569
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	100	98.5	1.41	80 - 120	30	
Arsenic	0.15	1.30	ND	50	99.5	97.4	2.23	80 - 120	30	
Barium	0.055	5.00	0.12	50	105	104	0.957	80 - 120	30	
Beryllium	0.055	5.00	ND	50	105	102	2.90	80 - 120	30	
Cadmium	0.10	5.00	ND	50	102	100	1.98	80 - 120	30	
Chromium	0.075	5.00	0.087	50	106	105	0.948	80 - 120	30	
Cobalt	0.070	5.00	ND	50	105	103	1.92	80 - 120	30	
Copper	0.20	5.00	ND	50	107	105	1.89	80 - 120	30	
Lead	0.10	3.00	ND	50	102	102	0.000	80 - 120	30	
Molybdenum	0.050	5.00	0.069	50	107	106	0.939	80 - 120	30	
Nickel	0.50	5.00	ND	50	104	102	1.94	80 - 120	30	
Selenium	0.22	5.00	ND	50	87.6	85.7	2.08	80 - 120	30	
Silver	0.15	5.00	ND	50	101	99.2	1.80	80 - 120	30	
Thallium	0.20	5.00	ND	50	101	99.4	1.60	80 - 120	30	
Vanadium	0.10	5.00	ND	50	106	105	0.948	80 - 120	30	
Zinc	0.30	5.00	ND	50	97.7	95.9	1.86	80 - 120	30	

Work Order:	1901065	**Prep Method:**	3546_OCP	**Prep Date:**	01/14/19	**Prep Batch:**	1110273
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	1/15/2019	**Analytical Batch:**	436602
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.16	2.0	ND	40	92.1	101	8.56	25 - 135	30	
Heptachlor	0.11	2.0	ND	40	87.5	95.2	8.48	40 - 130	30	
Aldrin	0.20	2.0	ND	40	88.8	96.7	8.63	25 - 140	30	
Dieldrin	0.15	2.0	ND	40	84.8	92.2	8.47	60 - 130	30	
Endrin	0.19	2.0	ND	40	86.6	93.7	7.76	55 - 135	30	
4,4-DDT	0.13	2.0	ND	40	98.6	106	7.57	45 - 140	30	
TCMX (S)				100	89.8	97.8		48 - 125		
DCBP (S)				100	91.9	100		38 - 135		

Work Order:	1901065	**Prep Method:**	7471BP	**Prep Date:**	01/11/19	**Prep Batch:**	1110284
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436587
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	89.5	90.5	0.889	80 - 120	30	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901065	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110285
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	97.8	92.9	5.03	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	103	99.8	3.54	66.5 - 135	30	
Trichloroethylene	1.8	10	ND	50.0	102	102	0.196	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	102	99.3	2.78	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	104	102	1.55	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	101	101		59.8 - 148		
(S) Toluene-d8				50.0	92.6	91.5		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	96.9	94.7		55.8 - 141		

Work Order:	1901065	**Prep Method:**	5035GRO	**Prep Date:**	01/11/19	**Prep Batch:**	1110288
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH(Gasoline)	43	100	ND	1000	87.1	87.9	0.914	48.2 - 132	30	
(S) 4-Bromofluorobenzene				50	89.7	91.8		43.9 - 127		

Work Order:	1901065	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110299
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436585
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	93.7	92.9	0.858	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	97.7	98.3	0.816	66.5 - 135	30	
Trichloroethylene	1.8	10	ND	50.0	100	99.0	1.20	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	104	103	0.771	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	104	103	0.580	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	96.9	98.1		59.8 - 148		
(S) Toluene-d8				50.0	95.2	93.4		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	99.2	97.0		55.8 - 141		

Torrent LABORATORY, INC.

MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901065	**Prep Method:**	3050B	**Prep Date:**	01/11/19	**Prep Batch:**	1110262
Matrix:	**Soil**	**Analytical Method:**	SW6010B	**Analyzed Date:**	01/14/2019	**Analytical Batch:**	436569
Spiked Sample:	1901065-013A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	87.6	84.8	3.20	30.7 - 130	30	
Arsenic	0.15	1.30	2.83	50	96.3	95.3	0.985	71.0 - 121	30	
Barium	0.055	5.00	85.0	50	98.0	125	9.93	70.2 - 130	30	
Beryllium	0.055	5.00	ND	50	100	101	0.985	73.3 - 115	30	
Cadmium	0.10	5.00	ND	50	92.7	92.5	0.214	80.0 - 110	30	
Chromium	0.075	5.00	16.2	50	102	111	6.50	76.0 - 116	30	
Cobalt	0.070	5.00	8.00	50	102	101	0.851	57.4 - 122	30	
Copper	0.20	5.00	15.2	50	113	111	1.41	74.8 - 119	30	
Lead	0.10	3.00	20.2	50	82.6	120	26.1	57.9 - 118	30	S
Molybdenum	0.050	5.00	ND	50	96.5	96.7	0.207	62.9 - 123	30	
Nickel	0.50	5.00	15.3	50	93.4	98.4	3.95	61.5 - 122	30	
Selenium	0.22	5.00	ND	50	85.3	82.8	3.09	62.0 - 111	30	
Silver	0.15	5.00	ND	50	106	105	0.948	81.1 - 109	30	
Thallium	0.20	5.00	ND	50	89.8	91.2	1.51	39.2 - 125	30	
Vanadium	0.10	5.00	28.3	50	125	118	3.92	65.8 - 122	30	S
Zinc	0.30	5.00	45.1	50	108	126	8.70	59.9 - 122	30	S

Work Order:	1901065	**Prep Method:**	7471BP	**Prep Date:**	01/11/19	**Prep Batch:**	1110284
Matrix:	**Soil**	**Analytical Method:**	SW7471B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436587
Spiked Sample:	1901065-013A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	76.9	76.3	0.707	75 - 125	30	

Torrent LABORATORY, INC.

MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901065	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110285
Matrix:	**Soil**	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Spiked Sample:	1901065-002A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50	97.2	99.0	1.83	55 - 125	30	
Benzene	2.2	10	ND	50	106	108	1.30	55 - 125	30	
Trichloroethylene	1.8	10	ND	50	102	104	1.93	55 - 125	30	
Toluene	1.8	10	ND	50	102	106	3.25	55 - 125	30	
Chlorobenzene	1.8	10	ND	50	101	103	2.34	55 - 125	30	
(S) Dibromofluoromethane				50	105	110		59.8 - 148		
(S) Toluene-d8				50	95.5	97.7		55.2 - 133		
(S) 4-Bromofluorobenzene				50	89.7	91.8		55.8 - 141		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Engeo (San Ramon)

Project Name: Richmond Country Club

Work Order No.: 1901065

Date and Time Received: 1/10/2019 4:20:00PM

Received By: hu

Physically Logged By: Navin Ghodasara

Checklist Completed By: Navin Ghodasara

Carrier Name: First Courier

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	3.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: na

pH Adjusted by: na

Comments:

Login Summary Report

Client ID: TL5123 Engeo (San Ramon)
Project Name: Richmond Country Club
Project # : 15693.000.000
Report Due Date: 1/15/2019

QC Level: II
TAT Requested: 3 Day Std:3
Date Received: 1/10/2019
Time Received: 4:20 pm

Comments:

Work Order # : ***1901065***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1901065-001A	SB-1	01/10/19 8:47	Soil	07/09/19			Composite	
1901065-002A	SB-2	01/10/19 8:57	Soil	07/09/19			Composite VOC_S_GRO VOC_S_8260B TPHDOSG_S_8015B SVO_S_8270CFull	
1901065-003A	SB-3	01/10/19 9:03	Soil	07/09/19			Composite	
1901065-004A	SB-4	01/10/19 9:10	Soil	07/09/19			Composite	
1901065-005A	SB-5	01/10/19 9:16	Soil	07/09/19			Composite VOC_S_GRO VOC_S_8260B TPHDOSG_S_8015B SVO_S_8270CFull	
1901065-006A	SB-6	01/10/19 9:24	Soil	07/09/19			Composite	
1901065-007A	SB-7	01/10/19 9:33	Soil	07/09/19			Composite	
1901065-008A	SB-8	01/10/19 9:38	Soil	07/09/19			Composite VOC_S_GRO VOC_S_8260B TPHDOSG_S_8015B SVO_S_8270CFull	
1901065-009A	SB-9	01/10/19 9:48	Soil	07/09/19			Composite	
1901065-010A	SB-10	01/10/19 10:43	Soil	07/09/19			Composite	
1901065-011A	SB-11	01/10/19 10:38	Soil	07/09/19			Composite VOC_S_GRO VOC_S_8260B TPHDOSG_S_8015B	

Login Summary Report

Client ID: TL5123 Engeo (San Ramon)
Project Name: Richmond Country Club
Project # : 15693.000.000
Report Due Date: 1/15/2019

QC Level: II
TAT Requested: 3 Day Std:3
Date Received: 1/10/2019
Time Received: 4:20 pm

Comments:

Work Order # : ***1901065***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1901065-012A	SB-12	01/10/19 10:23	Soil	07/09/19			SVO_S_8270CFull	
1901065-013A	COMP 1	01/10/19	Soil	07/09/19			Composite Hg_S_7471B Pest_S_8081OCP PCBs_S_8082A Met_S_6010B CAM17	
Sample Note:	Composite 3:1. CAM 17, PCBs, OCPs.							
1901065-014A	COMP 2	01/10/19	Soil	07/09/19			Hg_S_7471B Met_S_6010B CAM17 PCBs_S_8082A Pest_S_8081OCP	
1901065-015A	COMP 3	01/10/19	Soil	07/09/19			Hg_S_7471B Met_S_6010B CAM17 PCBs_S_8082A Pest_S_8081OCP	
1901065-016A	COMP 4	01/10/19	Soil	07/09/19			Hg_S_7471B Met_S_6010B CAM17 PCBs_S_8082A Pest_S_8081OCP	

Torrent LABORATORY, INC.

1901065

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 15493.000.000
PROJECT NAME: Richmond country club
SAMPLED BY: (SIGNATURE/PRINT) Taunee Werts
PROJECT MANAGER: (SIGNATURE/PRINT) Scott Johns
ROUTING: E-MAIL twerts + sjohns @ engeo.com

	SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	CAM-17 Metals 6010B+7471	PCBs 8082	OCPs 8081A	VOCs + TPH-g 8260	TPH-d/mo w/SG cleanup 8015	SVOCs 8270C		REMARKS REQUIRED DETECTION LIMITS
001A	SB-1	1/10/19	08:47	Soil	1	Sleeve	N/A							3pt COMP = COMP 1	-013A
002A	SB-2	↓	08:57	↓	↓	↓	↓	X	X	X	X	X	X		
003A	SB-3		09:03												
004A	SB-4		09:10											COMP 2	-014A
005A	SB-5		09:16					X	X	X	X	X	X		
006A	SB-6		09:24												
007A	SB-7		09:33											COMP 3	-015A
008A	SB-8		09:38					X	X	X	X	X	X		
009A	SB-9		09:48												
010A	SB-10		10:43											COMP 4	-016A
011A	SB-11		10:38					X	X	X	X	X	X		
012A	SB-12	↓	10:23	↓	↓	↓	↓								

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
[signature]	1/10/19 13:13	[signature]	[signature]	1/10	2:24 [signature]
RELINQUISHED BY: (SIGNATURE) [signature]	1/10/19 4:20	RECEIVED BY: (SIGNATURE) [signature]	RELINQUISHED BY: (SIGNATURE) 1/10/19 1620	DATE/TIME	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE/TIME	REMARKS Standard TAT	

ENGEO
INCORPORATED

2010 CROW CANYON PLACE SUITE 250
SAN RAMON, CALIFORNIA 94583
(925) 866-9000 FAX (925) 866-0199
WWW.ENGEO.COM

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT; COPY TO PROJECT FIELD FILES

FCS Temp = 3°C #2

Login Summary

Client ID: TL5123 Engeo (San Ramon)

Project Name: Richmond Country Club

Project # : 15693.000.000

Report Due Date: 1/15/2019

QC Level: II

TAT Requested: 3 Day Std:3

Date Received: 1/10/2019

Time Received: 4:20 pm

Comments:

Work Order # : ***1901065***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1901065-001A	SB-1	01/10/19 8:47	Soil	07/09/19			Composite	
1901065-002A	SB-2	01/10/19 8:57	Soil	07/09/19			Composite SVO_S_8270CFull TPHDOSG_S_8015B VOC_S_8260B VOC_S_GRO	
1901065-003A	SB-3	01/10/19 9:03	Soil	07/09/19			Composite	
1901065-004A	SB-4	01/10/19 9:10	Soil	07/09/19			Composite	
1901065-005A	SB-5	01/10/19 9:16	Soil	07/09/19			Composite SVO_S_8270CFull TPHDOSG_S_8015B VOC_S_8260B VOC_S_GRO	
1901065-006A	SB-6	01/10/19 9:24	Soil	07/09/19			Composite	
1901065-007A	SB-7	01/10/19 9:33	Soil	07/09/19			Composite	
1901065-008A	SB-8	01/10/19 9:38	Soil	07/09/19			Composite SVO_S_8270CFull TPHDOSG_S_8015B VOC_S_8260B VOC_S_GRO	
1901065-009A	SB-9	01/10/19 9:48	Soil	07/09/19			Composite	
1901065-010A	SB-10	01/10/19 10:43	Soil	07/09/19			Composite	

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1901065-011A	SB-11	01/10/19	10:38	Soil	07/09/19	Composite SVO_S_8270CFull TPHDOSG_S_8015B VOC_S_8260B VOC_S_GRO
1901065-012A	SB-12	01/10/19	10:23	Soil	07/09/19	Composite
1901065-013A	COMP 1	01/10/19		Soil	07/09/19	Hg_S_7471B Met_S_6010B CAM17 PCBs_S_8082A Pest_S_8081OCP
Sample Note:	Composite 3:1. CAM 17, PCBs, OCPs.					
1901065-014A	COMP 2	01/10/19		Soil	07/09/19	Hg_S_7471B Met_S_6010B CAM17 PCBs_S_8082A Pest_S_8081OCP
1901065-015A	COMP 3	01/10/19		Soil	07/09/19	Hg_S_7471B Met_S_6010B CAM17 PCBs_S_8082A Pest_S_8081OCP
1901065-016A	COMP 4	01/10/19		Soil	07/09/19	Hg_S_7471B Met_S_6010B CAM17 PCBs_S_8082A Pest_S_8081OCP

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Q010B4 7421

8260 8015

1901065

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 15693.000.000 | PROJECT NAME: Richmond Country Club

SAMPLED BY: (SIGNATURE/PRINT): Tanner Werts

PROJECT MANAGER: (SIGNATURE/PRINT): Scott Johns

ROUTING: E-MAIL: twerts+sjohns@engeo.com

	SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	CAM-17 Metals	PCBs 8082	OCPs 8081A	TPH-d/mo 8015	TPH-d/mo silica gel clean-up	SVOCs 8270C		REMARKS / REQUIRED DETECTION LIMITS
001A	SB-1	1/10/19	08:47	Soil	1	Sleeve	N/A							3pt COMP=COMP1	-013A
002A	SB-2		08:57								X	X	X		
003A	SB-3		09:03												
004A	SB-4		09:10												
005A	SB-5		09:16								X	X	X	COMP 2	-014A
006A	SB-6		09:24												
007A	SB-7		09:33												
008A	SB-8		09:38								X	X	X	COMP 3	-015A
009A	SB-9		09:48												
010A	SB-10		10:43												
011A	SB-11		10:38								X	X	X	COMP 4	-016A
012A	SB-12	↓	10:23	↓	↓	↓	↓								

RELINQUISHED BY: (SIGNATURE)	DATE/TIME: 1/10/19 13:13	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME: 1/10	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY: (SIGNATURE)	DATE/TIME: 1/10/19 4:20	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE) 1/10/19 1620	DATE/TIME	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE/TIME	REMARKS: Standard TAT	

ENGEO INCORPORATED

2010 CROW CANYON PLACE SUITE 250
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FCS Temp = 3°C #2

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Sample Receipt Checklist

Client Name: Engeo (San Ramon)

Project Name: Richmond Country Club

Work Order No.: 1901065

Date and Time Received: 1/10/2019

Received By: hu

Physically Logged By: Navin Ghodasara

Checklist Completed By: Navin Ghodasara

Carrier Name: First Courier

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Applicable

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Applicable
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	3.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: na

pH Adjusted by: na

Comments:

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Engeo (San Ramon)
2010 Crow Canyon Place,#250
San Ramon, California 94583
Tel: (925) 866-9000
Fax: (925) 866-0199

RE: Richmond Country Club

Work Order No.: 1901083 Rev: 1

Dear Taunee Werts:

Torrent Laboratory, Inc. received 6 sample(s) on January 11, 2019 for the analyses presented in the following Report.

As requested on the Chain of Custody, four samples were placed on hold.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991 If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

January 16, 2019
Date

Date: 1/16/2019

Client: Engeo (San Ramon)

Project: Richmond Country Club

Work Order: 1901083

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Analytical, Inc.

REVISIONS

Report revised to include TPH diesel/motor oil data.

Analytical Comments for method TPHDOSG, 1901083-006A MS/MSD, QC Analytical Preparation ID 1110376, Note:The % RPD for Diesel are outside of laboratory control limits but % recoveries are within limits. The associated LCS/LCSD is within both % Recovery and %RPD limits. No corrective action required.

Rev. 1 (1/23/19)

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date Received: 01/11/19
Date Reported: 01/16/19

TP-8 @ 3' 1901083-005

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.90	mg/Kg
Barium	SW6010B	1	0.055	5.00	289	mg/Kg
Chromium	SW6010B	1	0.075	5.00	27.1	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	10.8	mg/Kg
Copper	SW6010B	1	0.20	5.00	10.7	mg/Kg
Lead	SW6010B	1	0.10	3.00	6.20	mg/Kg
Nickel	SW6010B	1	0.50	5.00	33.7	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	23.6	mg/Kg
Zinc	SW6010B	1	0.30	5.00	25.3	mg/Kg
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	2.87	mg/Kg

TP-10 @ 4' 1901083-006

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.96	mg/Kg
Barium	SW6010B	1	0.055	5.00	84.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	24.8	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	5.75	mg/Kg
Copper	SW6010B	1	0.20	5.00	10.4	mg/Kg
Lead	SW6010B	1	0.10	3.00	8.75	mg/Kg
Nickel	SW6010B	1	0.50	5.00	23.9	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	23.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	22.3	mg/Kg
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	10.1	mg/Kg

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	1/14/19	5:30:00PM
Prep Batch ID:	1110304	**Prep Analyst:**	BJAY	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	01/15/19	13:25	BJAY	436603

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	1/14/19	5:30:00PM
Prep Batch ID:	1110303	**Prep Analyst:**	BJAY	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Arsenic	SW6010B	1	0.15	1.30	**2.90**		mg/Kg	01/15/19	18:09	PPATEL	436615
Barium	SW6010B	1	0.055	5.00	**289**		mg/Kg	01/15/19	18:09	PPATEL	436615
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Cadmium	SW6010B	1	0.10	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Chromium	SW6010B	1	0.075	5.00	**27.1**		mg/Kg	01/15/19	18:09	PPATEL	436615
Cobalt	SW6010B	1	0.070	5.00	**10.8**		mg/Kg	01/15/19	18:09	PPATEL	436615
Copper	SW6010B	1	0.20	5.00	**10.7**		mg/Kg	01/15/19	18:09	PPATEL	436615
Lead	SW6010B	1	0.10	3.00	**6.20**		mg/Kg	01/15/19	18:09	PPATEL	436615
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Nickel	SW6010B	1	0.50	5.00	**33.7**		mg/Kg	01/15/19	18:09	PPATEL	436615
Selenium	SW6010B	1	0.22	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Silver	SW6010B	1	0.15	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Vanadium	SW6010B	1	0.10	5.00	**23.6**		mg/Kg	01/15/19	18:09	PPATEL	436615
Zinc	SW6010B	1	0.30	5.00	**25.3**		mg/Kg	01/15/19	18:09	PPATEL	436615

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	3546_TPHSG	**Prep Batch Date/Time:**	1/17/19	5:54:00PM
Prep Batch ID:	1110376	**Prep Analyst:**	EDORR	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	**2.87**	x	mg/Kg	01/22/19	18:00	AW	436724
TPH as Motor Oil (SG)	SW8015B	1	3.2	10	ND		mg/Kg	01/22/19	18:00	AW	436724
			Acceptance Limits								
Pentacosane (S)	SW8015B		40 - 120		**96.5**		%	01/22/19	18:00	AW	436724

NOTE: x- Chromatographic pattern does not resemble typical diesel reference standard; unknown organics within diesel range quantified as diesel.

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 11:43:00AM
Prep Batch ID:	1110285	**Prep Analyst:**	JFORT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	0.0012	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Chloromethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Vinyl Chloride	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Bromomethane	SW8260B	1	0.0027	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Chloroethane	SW8260B	1	0.0030	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Trichlorofluoromethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1-Dichloroethene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Freon 113	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Methylene Chloride	SW8260B	1	0.0071	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
trans-1,2-Dichloroethene	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
MTBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Tert amyl-Methyl ether	SW8260B	1	0.012	0.050	ND		mg/Kg	01/11/19	18:59	JF	436591
Diisopropyl ether	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1-Dichloroethane	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Ethyl tert-Butyl ether	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
cis-1,2-Dichloroethene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
2,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Bromochloromethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Chloroform	SW8260B	1	0.0024	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Carbon Tetrachloride	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1,1-Trichloroethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1-Dichloropropene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Benzene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
TAME	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2-Dichloroethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Trichloroethylene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Dibromomethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Bromodichloromethane	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
cis-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Toluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Tetrachloroethylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
trans-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1,2-Trichloroethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Dibromochloromethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 11:43:00AM
Prep Batch ID:	1110285	**Prep Analyst:**	JFORT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,3-Dichloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2-Dibromoethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Chlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Ethylbenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1,1,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
m,p-Xylene	SW8260B	1	0.0032	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
o-Xylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Styrene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Bromoform	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Isopropyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
n-Propylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Bromobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1,2,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
2-Chlorotoluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,3,5-Trimethylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2,3-Trichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
4-Chlorotoluene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
tert-Butylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2,4-Trimethylbenzene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
sec-Butyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
p-Isopropyltoluene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,3-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,4-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
n-Butylbenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2-Dichlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2-Dibromo-3-Chloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Hexachlorobutadiene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2,4-Trichlorobenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Naphthalene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2,3-Trichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
2-Butanone	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**99.7**		%	01/11/19	18:59	JF	436591
(S) Toluene-d8	SW8260B		55.2 - 133		**97.5**		%	01/11/19	18:59	JF	436591
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**93.6**		%	01/11/19	18:59	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	5035GRO	**Prep Batch Date/Time:**	1/11/19	11:43:00AM
Prep Batch ID:	1110288	**Prep Analyst:**	JFORT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH(Gasoline)	8260TPH	1	0.043	0.10	ND		mg/Kg	01/11/19	18:59	JF	436591
(S) 4-Bromofluorobenzene	8260TPH		43.9 - 127		**75.2**		%	01/11/19	18:59	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	1/14/19	5:30:00PM
Prep Batch ID:	1110304	**Prep Analyst:**	BJAY	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	01/15/19	13:33	BJAY	436603

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	1/14/19	5:30:00PM
Prep Batch ID:	1110303	**Prep Analyst:**	BJAY	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Arsenic	SW6010B	1	0.15	1.30	**2.96**		mg/Kg	01/15/19	18:21	PPATEL	436615
Barium	SW6010B	1	0.055	5.00	**84.5**		mg/Kg	01/15/19	18:21	PPATEL	436615
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Cadmium	SW6010B	1	0.10	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Chromium	SW6010B	1	0.075	5.00	**24.8**		mg/Kg	01/15/19	18:21	PPATEL	436615
Cobalt	SW6010B	1	0.070	5.00	**5.75**		mg/Kg	01/15/19	18:21	PPATEL	436615
Copper	SW6010B	1	0.20	5.00	**10.4**		mg/Kg	01/15/19	18:21	PPATEL	436615
Lead	SW6010B	1	0.10	3.00	**8.75**		mg/Kg	01/15/19	18:21	PPATEL	436615
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Nickel	SW6010B	1	0.50	5.00	**23.9**		mg/Kg	01/15/19	18:21	PPATEL	436615
Selenium	SW6010B	1	0.22	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Silver	SW6010B	1	0.15	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Vanadium	SW6010B	1	0.10	5.00	**23.5**		mg/Kg	01/15/19	18:21	PPATEL	436615
Zinc	SW6010B	1	0.30	5.00	**22.3**		mg/Kg	01/15/19	18:21	PPATEL	436615

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	3546_TPHSG	**Prep Batch Date/Time:**	1/17/19	5:54:00PM
Prep Batch ID:	1110376	**Prep Analyst:**	EDORR	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel (SG)	SW8015B	1	0.85	2.0	**10.1**	x	mg/Kg	01/22/19	18:24	AW	436724
TPH as Motor Oil (SG)	SW8015B	1	3.2	10	ND		mg/Kg	01/22/19	18:24	AW	436724
			Acceptance Limits								
Pentacosane (S)	SW8015B		40 - 120		**91.0**		%	01/22/19	18:24	AW	436724

NOTE: x- Chromatographic pattern does not resemble typical diesel reference standard; unknown organics within diesel range lighter than diesel quantified as diesel.

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/14/19 10:11:00AM
Prep Batch ID:	1110314	**Prep Analyst:**	NPAR

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	0.0012	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Chloromethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Vinyl Chloride	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Bromomethane	SW8260B	1	0.0027	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Chloroethane	SW8260B	1	0.0030	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Trichlorofluoromethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1-Dichloroethene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Freon 113	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Methylene Chloride	SW8260B	1	0.0071	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
trans-1,2-Dichloroethene	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
MTBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Tert amyl-Methyl ether	SW8260B	1	0.012	0.050	ND		mg/Kg	01/14/19	16:46	NP	436605
Diisopropyl ether	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1-Dichloroethane	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Ethyl tert-Butyl ether	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
cis-1,2-Dichloroethene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
2,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Bromochloromethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Chloroform	SW8260B	1	0.0024	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Carbon Tetrachloride	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1,1-Trichloroethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1-Dichloropropene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Benzene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
TAME	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2-Dichloroethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Trichloroethylene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Dibromomethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Bromodichloromethane	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
cis-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Toluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Tetrachloroethylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
trans-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1,2-Trichloroethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Dibromochloromethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	5035		**Prep Batch Date/Time:**	1/14/19	10:11:00AM
Prep Batch ID:	1110314		**Prep Analyst:**	NPAR	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,3-Dichloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2-Dibromoethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Chlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Ethylbenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1,1,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
m,p-Xylene	SW8260B	1	0.0032	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
o-Xylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Styrene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Bromoform	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Isopropyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
n-Propylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Bromobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1,2,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
2-Chlorotoluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,3,5-Trimethylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2,3-Trichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
4-Chlorotoluene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
tert-Butylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2,4-Trimethylbenzene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
sec-Butyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
p-Isopropyltoluene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,3-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,4-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
n-Butylbenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2-Dichlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2-Dibromo-3-Chloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Hexachlorobutadiene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2,4-Trichlorobenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Naphthalene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2,3-Trichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
2-Butanone	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**105**		%	01/14/19	16:46	NP	436605
(S) Toluene-d8	SW8260B		55.2 - 133		**102**		%	01/14/19	16:46	NP	436605
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**110**		%	01/14/19	16:46	NP	436605

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	5035GRO	**Prep Batch Date/Time:**	1/11/19	11:43:00AM
Prep Batch ID:	1110288	**Prep Analyst:**	JFORT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH(Gasoline)	8260TPH	1	0.043	0.10	ND		mg/Kg	01/11/19	19:29	JF	436591
(S) 4-Bromofluorobenzene	8260TPH		43.9 - 127		**65.0**		%	01/11/19	19:29	JF	436591

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110285
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
Tert amyl-Methyl ether	12	50	ND		
Diisopropyl ether	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
Ethyl tert-Butyl ether	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethylene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethylene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethylbenzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110285
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
o-Xylene	1.7	10	ND	
Styrene	1.6	10	ND	
Bromoform	1.7	10	ND	
Isopropyl Benzene	1.6	10	ND	
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	2.3	
1,2,4-Trichlorobenzene	1.5	10	2.7	
Naphthalene	1.7	10	4.2	
1,2,3-Trichlorobenzene	1.7	10	3.4	
2-Butanone	1.7	10	3.8	
(S) Dibromofluoromethane			105	
(S) Toluene-d8			97.7	
(S) 4-Bromofluorobenzene			98.4	

Work Order:	1901083	**Prep Method:**	5035GRO	**Prep Date:**	01/11/19	**Prep Batch:**	1110288
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH(Gasoline)	43	100	ND	
(S) 4-Bromofluorobenzene			87.5	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	3050B	**Prep Date:**	01/14/19	**Prep Batch:**	1110303
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	1/15/2019	**Analytical Batch:**	436615
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	ND	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	ND	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	5.00	ND	
Chromium	0.075	5.00	ND	
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	1.30	ND	
Molybdenum	0.050	5.00	0.053	
Nickel	0.50	5.00	ND	
Selenium	0.22	5.00	ND	
Silver	0.15	5.00	ND	
Thallium	0.20	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	ND	

Work Order:	1901083	**Prep Method:**	7471BP	**Prep Date:**	01/14/19	**Prep Batch:**	1110304
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	1/15/2019	**Analytical Batch:**	436603
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/14/19	**Prep Batch:**	1110314
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436605
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
Tert amyl-Methyl ether	12	50	ND		
Diisopropyl ether	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
Ethyl tert-Butyl ether	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethylene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethylene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethylbenzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/14/19	**Prep Batch:**	1110314
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436605
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
o-Xylene	1.7	10	ND	
Styrene	1.6	10	ND	
Bromoform	1.7	10	ND	
Isopropyl Benzene	1.6	10	ND	
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	1.6	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	1.5	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	1.4	
1,2,4-Trichlorobenzene	1.5	10	2.1	
Naphthalene	1.7	10	2.9	
1,2,3-Trichlorobenzene	1.7	10	2.2	
2-Butanone	1.7	10	ND	
(S) Dibromofluoromethane			102	
(S) Toluene-d8			101	
(S) 4-Bromofluorobenzene			106	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/14/19	**Prep Batch:**	1110314
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436605
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	120	1000	ND		
Chloromethane	180	1000	ND		
Vinyl Chloride	200	1000	ND		
Bromomethane	270	1000	ND		
Chloroethane	300	1000	ND		
Trichlorofluoromethane	210	1000	ND		
1,1-Dichloroethene	200	1000	ND		
Freon 113	190	1000	ND		
Methylene Chloride	710	1000	ND		
trans-1,2-Dichloroethene	210	1000	ND		
MTBE	230	1000	ND		
Tert amyl-Methyl ether	1200	5000	ND		
Diisopropyl ether	230	1000	ND		
1,1-Dichloroethane	220	1000	ND		
Ethyl tert-Butyl ether	230	1000	ND		
cis-1,2-Dichloroethene	220	1000	ND		
2,2-Dichloropropane	190	1000	ND		
Bromochloromethane	230	1000	ND		
Chloroform	240	1000	ND		
Carbon Tetrachloride	210	1000	ND		
1,1,1-Trichloroethane	210	1000	ND		
1,1-Dichloropropene	200	1000	ND		
Benzene	220	1000	ND		
TAME	230	1000	ND		
1,2-Dichloroethane	230	1000	ND		
Trichloroethylene	180	1000	ND		
Dibromomethane	180	1000	ND		
1,2-Dichloropropane	190	1000	ND		
Bromodichloromethane	200	1000	ND		
cis-1,3-Dichloropropene	160	1000	ND		
Toluene	180	1000	ND		
Tetrachloroethylene	170	1000	ND		
trans-1,3-Dichloropropene	160	1000	ND		
1,1,2-Trichloroethane	180	1000	ND		
Dibromochloromethane	190	1000	ND		
1,3-Dichloropropane	180	1000	ND		
1,2-Dibromoethane	180	1000	ND		
Chlorobenzene	180	1000	ND		
Ethylbenzene	170	1000	ND		
1,1,1,2-Tetrachloroethane	190	1000	ND		
m,p-Xylene	320	1000	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/14/19	**Prep Batch:**	1110314
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436605
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
o-Xylene	170	1000	ND	
Styrene	160	1000	ND	
Bromoform	170	1000	ND	
Isopropyl Benzene	160	1000	ND	
n-Propylbenzene	160	1000	ND	
Bromobenzene	180	1000	ND	
1,1,2,2-Tetrachloroethane	190	1000	ND	
2-Chlorotoluene	180	1000	ND	
1,3,5-Trimethylbenzene	160	1000	ND	
1,2,3-Trichloropropane	190	1000	ND	
4-Chlorotoluene	160	1000	ND	
tert-Butylbenzene	160	1000	ND	
1,2,4-Trimethylbenzene	140	1000	ND	
sec-Butyl Benzene	160	1000	ND	
p-Isopropyltoluene	150	1000	ND	
1,3-Dichlorobenzene	170	1000	ND	
1,4-Dichlorobenzene	170	1000	ND	
n-Butylbenzene	150	1000	ND	
1,2-Dichlorobenzene	180	1000	ND	
1,2-Dibromo-3-Chloropropane	180	1000	ND	
Hexachlorobutadiene	140	1000	ND	
1,2,4-Trichlorobenzene	150	1000	190	
Naphthalene	170	1000	250	
1,2,3-Trichlorobenzene	170	1000	200	
2-Butanone	170	1000	ND	
(S) Dibromofluoromethane			96.4	
(S) Toluene-d8			99.3	
(S) 4-Bromofluorobenzene			98.8	

Work Order:	1901083	**Prep Method:**	3546_TPHSG	**Prep Date:**	01/17/19	**Prep Batch:**	1110376
Matrix:	Soil	**Analytical Method:**	SW8015B	**Analyzed Date:**	1/22/2019	**Analytical Batch:**	436724
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH as Diesel (SG)	0.85	2.0	1.23	
TPH as Motor Oil (SG)	3.2	10	ND	
Pentacosane (S)			98.6	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110285
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	97.8	92.9	5.03	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	103	99.8	3.54	66.5 - 135	30	
Trichloroethylene	1.8	10	ND	50.0	102	102	0.196	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	102	99.3	2.78	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	104	102	1.55	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	101	101		59.8 - 148		
(S) Toluene-d8				50.0	92.6	91.5		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	96.9	94.7		55.8 - 141		

Work Order:	1901083	**Prep Method:**	5035GRO	**Prep Date:**	01/11/19	**Prep Batch:**	1110288
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH(Gasoline)	43	100	ND	1000	87.1	87.9	0.914	48.2 - 132	30	
(S) 4-Bromofluorobenzene				50	89.7	91.8		43.9 - 127		

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901083	**Prep Method:**	3050B	**Prep Date:**	01/14/19	**Prep Batch:**	1110303
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	1/15/2019	**Analytical Batch:**	436615
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	96.6	96.1	0.415	80 - 120	30	
Arsenic	0.15	1.30	ND	50	93.5	93.6	0.000	80 - 120	30	
Barium	0.055	5.00	ND	50	103	103	0.000	80 - 120	30	
Beryllium	0.055	5.00	ND	50	99.9	101	0.995	80 - 120	30	
Cadmium	0.10	5.00	ND	50	94.9	97.4	2.49	80 - 120	30	
Chromium	0.075	5.00	ND	50	101	103	1.96	80 - 120	30	
Cobalt	0.070	5.00	ND	50	99.4	100	0.602	80 - 120	30	
Copper	0.20	5.00	ND	50	105	104	0.957	80 - 120	30	
Lead	0.10	3.00	ND	50	98.7	101	2.20	80 - 120	30	
Molybdenum	0.050	5.00	0.053	50	102	103	0.976	80 - 120	30	
Nickel	0.50	5.00	ND	50	98.4	99.2	0.810	80 - 120	30	
Selenium	0.22	5.00	ND	50	85.5	84.5	1.18	80 - 120	30	
Silver	0.15	5.00	ND	50	101	99.8	1.20	80 - 120	30	
Thallium	0.20	5.00	ND	50	95.7	96.4	0.624	80 - 120	30	
Vanadium	0.10	5.00	ND	50	103	103	0.000	80 - 120	30	
Zinc	0.30	5.00	ND	50	93.7	94.8	1.06	80 - 120	30	

Work Order:	1901083	**Prep Method:**	7471BP	**Prep Date:**	01/14/19	**Prep Batch:**	1110304
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	1/15/2019	**Analytical Batch:**	436603
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	93.9	95.4	1.69	80 - 120	30	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/14/19	**Prep Batch:**	1110314
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436605
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	106	107	0.375	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	106	107	0.376	66.5 - 135	30	
Trichloroethylene	1.8	10	ND	50.0	103	104	0.970	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	105	107	2.07	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	105	106	1.32	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	102	103		59.8 - 148		
(S) Toluene-d8				50.0	93.8	95.3		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	94.3	97.8		55.8 - 141		

Work Order:	1901083	**Prep Method:**	3546_TPHSG	**Prep Date:**	01/17/19	**Prep Batch:**	1110376
Matrix:	Soil	**Analytical Method:**	SW8015B	**Analyzed Date:**	1/22/2019	**Analytical Batch:**	436724
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel (SG)	0.85	2.0	1.23	25.0	78.4	81.7	4.00	40 - 115	30	
TPH as Motor Oil (SG)			ND	200				40 - 120		

Torrent LABORATORY, INC.

MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901083	**Prep Method:**	3546_TPHSG	**Prep Date:**	01/17/19	**Prep Batch:**	1110376
Matrix:	**Soil**	**Analytical Method:**	SW8015B	**Analyzed Date:**	1/22/2019	**Analytical Batch:**	436724
Spiked Sample:	1901083-006A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel (SG)	0.850	2.00	10.1	25.0	50.6	93.6	38.0	40 - 115	30	R
Pentacosane (S)				200	90.5	109		40 - 120		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Engeo (San Ramon)

Project Name: Richmond Country Club

Work Order No.: 1901083

Date and Time Received: 1/11/2019 11:20:00AM

Received By: NG

Physically Logged By: Katherene Evans

Checklist Completed By: Katherene Evans

Carrier Name: First Courier

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	3.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: na

pH Adjusted by: na

Comments:

Login Summary Report

Client ID: TL5123 Engeo (San Ramon)
Project Name: Richmond Country Club
Project # : 15693.000.000
Report Due Date: 1/22/2019

QC Level: II
TAT Requested: 3 Day Std:3
Date Received: 1/11/2019
Time Received: 11:20 am

Comments:

Work Order # : ***1901083***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1901083-001A	TP-2 @ 4.5'	01/10/19 9:30	Soil	07/09/19			Hold Samples	
1901083-002A	TP-3 @ 3'	01/10/19 10:15	Soil	07/09/19			Hold Samples	
1901083-003A	TP-4 @ 11'	01/10/19 10:45	Soil	07/09/19			Hold Samples	
1901083-004A	TP-12 @ 3'	01/10/19 11:35	Soil	07/09/19			Hold Samples	
1901083-005A	TP-8 @ 3'	01/10/19 0:00	Soil	07/09/19			Hg_S_7471B TPHDOSG_S_8015B VOC_S_GRO VOC_S_8260B Met_S_6010B CAM17	
1901083-006A	TP-10 @ 4'	01/10/19 13:45	Soil	07/09/19			VOC_S_GRO VOC_S_8260B Hg_S_7471B Met_S_6010B CAM17 TPHDOSG_S_8015B	

Torrent LABORATORY, INC.

8260

1901083

CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
15693.000.000	Richmond Country Club

SAMPLED BY: (SIGNATURE/PRINT) Ryan Reid

PROJECT MANAGER: (SIGNATURE/PRINT) Scott Johns

ROUTING: E-MAIL twerts@sjohns@engeo.com

	SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	TPHg +VOCs	CAM 17	REMARKS / REQUIRED DETECTION LIMITS
001A	TP-2 @ 4.5'	1-10-19	0930	Soil	1	Sleeve	N/A			Hold
002A	TP-3 @ 3'	1-10-19	1015							Hold
003A	TP-4 @ 11'	1-10-19	1045							Hold
004A	TP-12 @ 3'	1-10-19	1135							Hold
005A	TP-8 @ 3'	1-10-19	1225					X	X	
006A	TP-10 @ 4'	1-10-19	1345	↓	↓	↓	↓	X	X	

Temp. 3°C #2

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
	1/11/19 09:28		Jennifer Ludwig	10:36am 1/11/19	
	1/11/19 11:20 AM	NAVIN G.			
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE/TIME	REMARKS	

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT; COPY TO PROJECT FIELD FILES

ENGEO INCORPORATED

2010 CROW CANYON PLACE SUITE 250
SAN RAMON, CALIFORNIA 94583
(925) 866-9000 FAX (925) 866-0199
WWW.ENGEO.COM

FCS

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.

Change Order

Work Order: 1901083 **Serial #:** CO19-0014 **Print Date:** 1/17/2019

Project Name: Richmond Country Club

Client: Engeo (San Ramon) **Requested By:** Scott Johns

	Requested Date	Requested Time	Extended Price
Analyze 005/006 for TPH d/mo w/silica gel cleanup; std 3 day TAT	1/17/2019	10:00:00AM	

483 Sinclair Frontage Rd., Milpitas, CA 95035 | *tel:* 408.263.5258 | *fax:* 408.263.8293 | www.torrentlab.com

Engeo (San Ramon)
2010 Crow Canyon Place,#250
San Ramon, California 94583
Tel: (925) 866-9000
Fax: (925) 866-0199

RE: Richmond Country Club

Work Order No.: 1901083

Dear Taunee Werts:

Torrent Laboratory, Inc. received 6 sample(s) on January 11, 2019 for the analyses presented in the following Report.

As requested on the Chain of Custody, four samples were placed on hold.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991 If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

January 16, 2019
Date

Date: 1/16/2019

Client: Engeo (San Ramon)

Project: Richmond Country Club

Work Order: 1901083

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Analytical, Inc.

Sample Result Summary

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date Received: 01/11/19
Date Reported: 01/16/19

TP-8 @ 3' 1901083-005

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.90	mg/Kg
Barium	SW6010B	1	0.055	5.00	289	mg/Kg
Chromium	SW6010B	1	0.075	5.00	27.1	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	10.8	mg/Kg
Copper	SW6010B	1	0.20	5.00	10.7	mg/Kg
Lead	SW6010B	1	0.10	3.00	6.20	mg/Kg
Nickel	SW6010B	1	0.50	5.00	33.7	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	23.6	mg/Kg
Zinc	SW6010B	1	0.30	5.00	25.3	mg/Kg

TP-10 @ 4' 1901083-006

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.96	mg/Kg
Barium	SW6010B	1	0.055	5.00	84.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	24.8	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	5.75	mg/Kg
Copper	SW6010B	1	0.20	5.00	10.4	mg/Kg
Lead	SW6010B	1	0.10	3.00	8.75	mg/Kg
Nickel	SW6010B	1	0.50	5.00	23.9	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	23.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	22.3	mg/Kg

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	1/14/19	5:30:00PM
Prep Batch ID:	1110304	**Prep Analyst:**	BJAY	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	01/15/19	13:25	BJAY	436603

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	1/14/19	5:30:00PM
Prep Batch ID:	1110303	**Prep Analyst:**	BJAY	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Arsenic	SW6010B	1	0.15	1.30	**2.90**		mg/Kg	01/15/19	18:09	PPATEL	436615
Barium	SW6010B	1	0.055	5.00	**289**		mg/Kg	01/15/19	18:09	PPATEL	436615
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Cadmium	SW6010B	1	0.10	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Chromium	SW6010B	1	0.075	5.00	**27.1**		mg/Kg	01/15/19	18:09	PPATEL	436615
Cobalt	SW6010B	1	0.070	5.00	**10.8**		mg/Kg	01/15/19	18:09	PPATEL	436615
Copper	SW6010B	1	0.20	5.00	**10.7**		mg/Kg	01/15/19	18:09	PPATEL	436615
Lead	SW6010B	1	0.10	3.00	**6.20**		mg/Kg	01/15/19	18:09	PPATEL	436615
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Nickel	SW6010B	1	0.50	5.00	**33.7**		mg/Kg	01/15/19	18:09	PPATEL	436615
Selenium	SW6010B	1	0.22	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Silver	SW6010B	1	0.15	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	01/15/19	18:09	PPATEL	436615
Vanadium	SW6010B	1	0.10	5.00	**23.6**		mg/Kg	01/15/19	18:09	PPATEL	436615
Zinc	SW6010B	1	0.30	5.00	**25.3**		mg/Kg	01/15/19	18:09	PPATEL	436615

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 11:43:00AM
Prep Batch ID:	1110285	**Prep Analyst:**	JFORT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	0.0012	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Chloromethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Vinyl Chloride	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Bromomethane	SW8260B	1	0.0027	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Chloroethane	SW8260B	1	0.0030	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Trichlorofluoromethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1-Dichloroethene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Freon 113	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Methylene Chloride	SW8260B	1	0.0071	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
trans-1,2-Dichloroethene	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
MTBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
tert-Butanol	SW8260B	1	0.012	0.050	ND		mg/Kg	01/11/19	18:59	JF	436591
Diisopropyl ether (DIPE)	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1-Dichloroethane	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
ETBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
cis-1,2-Dichloroethene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
2,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Bromochloromethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Chloroform	SW8260B	1	0.0024	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Carbon Tetrachloride	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1,1-Trichloroethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1-Dichloropropene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Benzene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
TAME	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2-Dichloroethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Trichloroethylene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Dibromomethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Bromodichloromethane	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
cis-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Toluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Tetrachloroethylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
trans-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1,2-Trichloroethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Dibromochloromethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/11/19 11:43:00AM
Prep Batch ID:	1110285	**Prep Analyst:**	JFORT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,3-Dichloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2-Dibromoethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Chlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Ethyl Benzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1,1,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
m,p-Xylene	SW8260B	1	0.0032	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
o-Xylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Styrene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Bromoform	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Isopropyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
n-Propylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Bromobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,1,2,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
2-Chlorotoluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,3,5-Trimethylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2,3-Trichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
4-Chlorotoluene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
tert-Butylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2,4-Trimethylbenzene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
sec-Butyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
p-Isopropyltoluene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,3-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,4-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
n-Butylbenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2-Dichlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2-Dibromo-3-Chloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Hexachlorobutadiene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2,4-Trichlorobenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
Naphthalene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
1,2,3-Trichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
2-Butanone	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/11/19	18:59	JF	436591
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**99.7**		%	01/11/19	18:59	JF	436591
(S) Toluene-d8	SW8260B		55.2 - 133		**97.5**		%	01/11/19	18:59	JF	436591
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**93.6**		%	01/11/19	18:59	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-8 @ 3'	**Lab Sample ID:**	1901083-005A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 0:00		
SDG:			

Prep Method:	5035GRO	**Prep Batch Date/Time:**	1/11/19	11:43:00AM
Prep Batch ID:	1110288	**Prep Analyst:**	JFORT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH(Gasoline)	8260TPH	1	0.043	0.10	ND		mg/Kg	01/11/19	18:59	JF	436591
(S) 4-Bromofluorobenzene	8260TPH		43.9 - 127		**75.2**		%	01/11/19	18:59	JF	436591

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	1/14/19	5:30:00PM
Prep Batch ID:	1110304	**Prep Analyst:**	BJAY	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	01/15/19	13:33	BJAY	436603

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	1/14/19	5:30:00PM
Prep Batch ID:	1110303	**Prep Analyst:**	BJAY	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Arsenic	SW6010B	1	0.15	1.30	**2.96**		mg/Kg	01/15/19	18:21	PPATEL	436615
Barium	SW6010B	1	0.055	5.00	**84.5**		mg/Kg	01/15/19	18:21	PPATEL	436615
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Cadmium	SW6010B	1	0.10	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Chromium	SW6010B	1	0.075	5.00	**24.8**		mg/Kg	01/15/19	18:21	PPATEL	436615
Cobalt	SW6010B	1	0.070	5.00	**5.75**		mg/Kg	01/15/19	18:21	PPATEL	436615
Copper	SW6010B	1	0.20	5.00	**10.4**		mg/Kg	01/15/19	18:21	PPATEL	436615
Lead	SW6010B	1	0.10	3.00	**8.75**		mg/Kg	01/15/19	18:21	PPATEL	436615
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Nickel	SW6010B	1	0.50	5.00	**23.9**		mg/Kg	01/15/19	18:21	PPATEL	436615
Selenium	SW6010B	1	0.22	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Silver	SW6010B	1	0.15	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	01/15/19	18:21	PPATEL	436615
Vanadium	SW6010B	1	0.10	5.00	**23.5**		mg/Kg	01/15/19	18:21	PPATEL	436615
Zinc	SW6010B	1	0.30	5.00	**22.3**		mg/Kg	01/15/19	18:21	PPATEL	436615

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	1/14/19 10:11:00AM
Prep Batch ID:	1110314	**Prep Analyst:**	NPAR

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	0.0012	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Chloromethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Vinyl Chloride	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Bromomethane	SW8260B	1	0.0027	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Chloroethane	SW8260B	1	0.0030	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Trichlorofluoromethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1-Dichloroethene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Freon 113	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Methylene Chloride	SW8260B	1	0.0071	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
trans-1,2-Dichloroethene	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
MTBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
tert-Butanol	SW8260B	1	0.012	0.050	ND		mg/Kg	01/14/19	16:46	NP	436605
Diisopropyl ether (DIPE)	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1-Dichloroethane	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
ETBE	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
cis-1,2-Dichloroethene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
2,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Bromochloromethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Chloroform	SW8260B	1	0.0024	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Carbon Tetrachloride	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1,1-Trichloroethane	SW8260B	1	0.0021	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1-Dichloropropene	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Benzene	SW8260B	1	0.0022	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
TAME	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2-Dichloroethane	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Trichloroethylene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Dibromomethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2-Dichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Bromodichloromethane	SW8260B	1	0.0020	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
cis-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Toluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Tetrachloroethylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
trans-1,3-Dichloropropene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1,2-Trichloroethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Dibromochloromethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	5035		**Prep Batch Date/Time:**	1/14/19	10:11:00AM
Prep Batch ID:	1110314		**Prep Analyst:**	NPAR	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,3-Dichloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2-Dibromoethane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Chlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Ethyl Benzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1,1,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
m,p-Xylene	SW8260B	1	0.0032	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
o-Xylene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Styrene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Bromoform	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Isopropyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
n-Propylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Bromobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,1,2,2-Tetrachloroethane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
2-Chlorotoluene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,3,5-Trimethylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2,3-Trichloropropane	SW8260B	1	0.0019	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
4-Chlorotoluene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
tert-Butylbenzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2,4-Trimethylbenzene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
sec-Butyl Benzene	SW8260B	1	0.0016	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
p-Isopropyltoluene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,3-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,4-Dichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
n-Butylbenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2-Dichlorobenzene	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2-Dibromo-3-Chloropropane	SW8260B	1	0.0018	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Hexachlorobutadiene	SW8260B	1	0.0014	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2,4-Trichlorobenzene	SW8260B	1	0.0015	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
Naphthalene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
1,2,3-Trichlorobenzene	SW8260B	1	0.0017	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
2-Butanone	SW8260B	1	0.0023	0.010	ND		mg/Kg	01/14/19	16:46	NP	436605
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**105**		%	01/14/19	16:46	NP	436605
(S) Toluene-d8	SW8260B		55.2 - 133		**102**		%	01/14/19	16:46	NP	436605
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**110**		%	01/14/19	16:46	NP	436605

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Taunee Werts
Engeo (San Ramon)

Date/Time Received: 01/11/19, 11:20 am
Date Reported: 01/16/19

Client Sample ID:	TP-10 @ 4'	**Lab Sample ID:**	1901083-006A
Project Name/Location:	Richmond Country Club	**Sample Matrix:**	Soil
Project Number:	15693.000.000		
Date/Time Sampled:	01/10/19 / 13:45		
SDG:			

Prep Method:	5035GRO	**Prep Batch Date/Time:**	1/11/19	11:43:00AM
Prep Batch ID:	1110288	**Prep Analyst:**	JFORT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH(Gasoline)	8260TPH	1	0.043	0.10	ND		mg/Kg	01/11/19	19:29	JF	436591
(S) 4-Bromofluorobenzene	8260TPH		43.9 - 127		**65.0**		%	01/11/19	19:29	JF	436591

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110285
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
tert-Butanol	12	50	ND		
Diisopropyl ether (DIPE)	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
ETBE	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethylene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethylene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethyl Benzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110285
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
o-Xylene	1.7	10	ND	
Styrene	1.6	10	ND	
Bromoform	1.7	10	ND	
Isopropyl Benzene	1.6	10	ND	
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	2.3	
1,2,4-Trichlorobenzene	1.5	10	2.7	
Naphthalene	1.7	10	4.2	
1,2,3-Trichlorobenzene	1.7	10	3.4	
2-Butanone	1.7	10	3.8	
(S) Dibromofluoromethane			105	
(S) Toluene-d8			97.7	
(S) 4-Bromofluorobenzene			98.4	

Work Order:	1901083	**Prep Method:**	5035GRO	**Prep Date:**	01/11/19	**Prep Batch:**	1110288
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH(Gasoline)	43	100	ND	
(S) 4-Bromofluorobenzene			87.5	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	3050B	**Prep Date:**	01/14/19	**Prep Batch:**	1110303
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	1/15/2019	**Analytical Batch:**	436615
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	ND	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	ND	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	5.00	ND	
Chromium	0.075	5.00	ND	
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	1.30	ND	
Molybdenum	0.050	5.00	0.053	
Nickel	0.50	5.00	ND	
Selenium	0.22	5.00	ND	
Silver	0.15	5.00	ND	
Thallium	0.20	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	ND	

Work Order:	1901083	**Prep Method:**	7471BP	**Prep Date:**	01/14/19	**Prep Batch:**	1110304
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	1/15/2019	**Analytical Batch:**	436603
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/14/19	**Prep Batch:**	1110314
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436605
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
tert-Butanol	12	50	ND		
Diisopropyl ether (DIPE)	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
ETBE	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethylene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethylene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethyl Benzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/14/19	**Prep Batch:**	1110314
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436605
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
o-Xylene	1.7	10	ND	
Styrene	1.6	10	ND	
Bromoform	1.7	10	ND	
Isopropyl Benzene	1.6	10	ND	
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	1.6	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	1.5	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	1.4	
1,2,4-Trichlorobenzene	1.5	10	2.1	
Naphthalene	1.7	10	2.9	
1,2,3-Trichlorobenzene	1.7	10	2.2	
2-Butanone	1.7	10	ND	
(S) Dibromofluoromethane			102	
(S) Toluene-d8			101	
(S) 4-Bromofluorobenzene			106	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/14/19	**Prep Batch:**	1110314
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436605
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	120	1000	ND		
Chloromethane	180	1000	ND		
Vinyl Chloride	200	1000	ND		
Bromomethane	270	1000	ND		
Chloroethane	300	1000	ND		
Trichlorofluoromethane	210	1000	ND		
1,1-Dichloroethene	200	1000	ND		
Freon 113	190	1000	ND		
Methylene Chloride	710	1000	ND		
trans-1,2-Dichloroethene	210	1000	ND		
MTBE	230	1000	ND		
tert-Butanol	1200	5000	ND		
Diisopropyl ether (DIPE)	230	1000	ND		
1,1-Dichloroethane	220	1000	ND		
ETBE	230	1000	ND		
cis-1,2-Dichloroethene	220	1000	ND		
2,2-Dichloropropane	190	1000	ND		
Bromochloromethane	230	1000	ND		
Chloroform	240	1000	ND		
Carbon Tetrachloride	210	1000	ND		
1,1,1-Trichloroethane	210	1000	ND		
1,1-Dichloropropene	200	1000	ND		
Benzene	220	1000	ND		
TAME	230	1000	ND		
1,2-Dichloroethane	230	1000	ND		
Trichloroethylene	180	1000	ND		
Dibromomethane	180	1000	ND		
1,2-Dichloropropane	190	1000	ND		
Bromodichloromethane	200	1000	ND		
cis-1,3-Dichloropropene	160	1000	ND		
Toluene	180	1000	ND		
Tetrachloroethylene	170	1000	ND		
trans-1,3-Dichloropropene	160	1000	ND		
1,1,2-Trichloroethane	180	1000	ND		
Dibromochloromethane	190	1000	ND		
1,3-Dichloropropane	180	1000	ND		
1,2-Dibromoethane	180	1000	ND		
Chlorobenzene	180	1000	ND		
Ethyl Benzene	170	1000	ND		
1,1,1,2-Tetrachloroethane	190	1000	ND		
m,p-Xylene	320	1000	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/14/19	**Prep Batch:**	1110314
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436605
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
o-Xylene	170	1000	ND	
Styrene	160	1000	ND	
Bromoform	170	1000	ND	
Isopropyl Benzene	160	1000	ND	
n-Propylbenzene	160	1000	ND	
Bromobenzene	180	1000	ND	
1,1,2,2-Tetrachloroethane	190	1000	ND	
2-Chlorotoluene	180	1000	ND	
1,3,5-Trimethylbenzene	160	1000	ND	
1,2,3-Trichloropropane	190	1000	ND	
4-Chlorotoluene	160	1000	ND	
tert-Butylbenzene	160	1000	ND	
1,2,4-Trimethylbenzene	140	1000	ND	
sec-Butyl Benzene	160	1000	ND	
p-Isopropyltoluene	150	1000	ND	
1,3-Dichlorobenzene	170	1000	ND	
1,4-Dichlorobenzene	170	1000	ND	
n-Butylbenzene	150	1000	ND	
1,2-Dichlorobenzene	180	1000	ND	
1,2-Dibromo-3-Chloropropane	180	1000	ND	
Hexachlorobutadiene	140	1000	ND	
1,2,4-Trichlorobenzene	150	1000	190	
Naphthalene	170	1000	250	
1,2,3-Trichlorobenzene	170	1000	200	
2-Butanone	170	1000	ND	
(S) Dibromofluoromethane			96.4	
(S) Toluene-d8			99.3	
(S) 4-Bromofluorobenzene			98.8	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/11/19	**Prep Batch:**	1110285
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	97.8	92.9	5.03	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	103	99.8	3.54	66.5 - 135	30	
Trichloroethylene	1.8	10	ND	50.0	102	102	0.196	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	102	99.3	2.78	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	104	102	1.55	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	101	101		59.8 - 148		
(S) Toluene-d8				50.0	92.6	91.5		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	96.9	94.7		55.8 - 141		

Work Order:	1901083	**Prep Method:**	5035GRO	**Prep Date:**	01/11/19	**Prep Batch:**	1110288
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/11/2019	**Analytical Batch:**	436591
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH(Gasoline)	43	100	ND	1000	87.1	87.9	0.914	48.2 - 132	30	
(S) 4-Bromofluorobenzene				50	89.7	91.8		43.9 - 127		

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1901083	**Prep Method:**	3050B	**Prep Date:**	01/14/19	**Prep Batch:**	1110303
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	1/15/2019	**Analytical Batch:**	436615
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	96.6	96.1	0.415	80 - 120	30	
Arsenic	0.15	1.30	ND	50	93.5	93.6	0.000	80 - 120	30	
Barium	0.055	5.00	ND	50	103	103	0.000	80 - 120	30	
Beryllium	0.055	5.00	ND	50	99.9	101	0.995	80 - 120	30	
Cadmium	0.10	5.00	ND	50	94.9	97.4	2.49	80 - 120	30	
Chromium	0.075	5.00	ND	50	101	103	1.96	80 - 120	30	
Cobalt	0.070	5.00	ND	50	99.4	100	0.602	80 - 120	30	
Copper	0.20	5.00	ND	50	105	104	0.957	80 - 120	30	
Lead	0.10	3.00	ND	50	98.7	101	2.20	80 - 120	30	
Molybdenum	0.050	5.00	0.053	50	102	103	0.976	80 - 120	30	
Nickel	0.50	5.00	ND	50	98.4	99.2	0.810	80 - 120	30	
Selenium	0.22	5.00	ND	50	85.5	84.5	1.18	80 - 120	30	
Silver	0.15	5.00	ND	50	101	99.8	1.20	80 - 120	30	
Thallium	0.20	5.00	ND	50	95.7	96.4	0.624	80 - 120	30	
Vanadium	0.10	5.00	ND	50	103	103	0.000	80 - 120	30	
Zinc	0.30	5.00	ND	50	93.7	94.8	1.06	80 - 120	30	

Work Order:	1901083	**Prep Method:**	7471BP	**Prep Date:**	01/14/19	**Prep Batch:**	1110304
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	1/15/2019	**Analytical Batch:**	436603
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	93.9	95.4	1.69	80 - 120	30	

Work Order:	1901083	**Prep Method:**	5035	**Prep Date:**	01/14/19	**Prep Batch:**	1110314
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	1/14/2019	**Analytical Batch:**	436605
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	106	107	0.375	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	106	107	0.376	66.5 - 135	30	
Trichloroethylene	1.8	10	ND	50.0	103	104	0.970	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	105	107	2.07	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	105	106	1.32	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	102	103		59.8 - 148		
(S) Toluene-d8				50.0	93.8	95.3		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	94.3	97.8		55.8 - 141		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Engeo (San Ramon)

Project Name: Richmond Country Club

Work Order No.: 1901083

Date and Time Received: 1/11/2019 11:20:00AM

Received By: NG

Physically Logged By: Katherene Evans

Checklist Completed By: Katherene Evans

Carrier Name: First Courier

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	3.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: na

pH Adjusted by: na

Comments:

Login Summary Report

Client ID: TL5123 Engeo (San Ramon)
Project Name: Richmond Country Club
Project # : 15693.000.000
Report Due Date: 1/16/2019

QC Level: II
TAT Requested: 3 Day Std:3
Date Received: 1/11/2019
Time Received: 11:20 am

Comments:

Work Order # : ***1901083***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1901083-001A	TP-2 @ 4.5'	01/10/19 9:30	Soil	07/09/19			Hold Samples	
1901083-002A	TP-3 @ 3'	01/10/19 10:15	Soil	07/09/19			Hold Samples	
1901083-003A	TP-4 @ 11'	01/10/19 10:45	Soil	07/09/19			Hold Samples	
1901083-004A	TP-12 @ 3'	01/10/19 11:35	Soil	07/09/19			Hold Samples	
1901083-005A	TP-8 @ 3'	01/10/19 0:00	Soil	07/09/19			Hg_S_7471B Met_S_6010B CAM17 VOC_S_8260B VOC_S_GRO	
1901083-006A	TP-10 @ 4'	01/10/19 13:45	Soil	07/09/19			VOC_S_GRO VOC_S_8260B Hg_S_7471B Met_S_6010B CAM17	

Torrent LABORATORY, INC.

82611

1901083

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 15693,000.000
PROJECT NAME: Richmond Country Club
SAMPLED BY: (SIGNATURE/PRINT) Ryan Reid
PROJECT MANAGER: (SIGNATURE/PRINT) Scott Johns
ROUTING: E-MAIL tweerts & sjohns @ engeo.com

	SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	TPHg + VOCs	CAM 17	REMARKS REQUIRED DETECTION LIMITS
001A	TP-2 @ 4.5'	1-10-19	0930	Soil	1	Sleeve	N/A			Hold
002A	TP-3 @ 3'	1-10-19	1015	↓	↓	↓	↓			Hold
003A	TP-4 @ 11'	1-10-19	1045	↓	↓	↓	↓			Hold
004A	TP-12 @ 3'	1-10-19	1135	↓	↓	↓	↓			Hold
005A	TP-8 @ 3'	1-10-19	1225	↓	↓	↓	↓	X	X	
006A	TP-10 @ 4'	1-10-19	1345	↓	↓	↓	↓	X	X	

Temp. 3°C #2

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
[signature]	1/11/19 09:28	[signature]	[signature]	10:36pm 1/11/19	
[signature]	1/11/19 11:20 AM	[signature] NAVIN G.			
		RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE/TIME	REMARKS	

ENGEO INCORPORATED

2010 CROW CANYON PLACE SUITE 250
SAN RAMON, CALIFORNIA 94583
(925) 866-9000 FAX (925) 866-0199
WWW.ENGEO.COM

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT; COPY TO PROJECT FIELD FILES

FCS

Torrent LABORATORY, INC.

Login Summary

Client ID: TL5123 Engeo (San Ramon)

Project Name: Richmond Country Club

Project # : 15693.000.000

Report Due Date: 1/16/2019

QC Level: II

TAT Requested: 3 Day Std:3

Date Received: 1/11/2019

Time Received: 11:20 am

Comments:

Work Order # : ***1901083***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1901083-001A	TP-2 @ 4.5'	01/10/19 9:30	Soil	07/09/19			Hold Samples	
1901083-002A	TP-3 @ 3'	01/10/19 10:15	Soil	07/09/19			Hold Samples	
1901083-003A	TP-4 @ 11'	01/10/19 10:45	Soil	07/09/19			Hold Samples	
1901083-004A	TP-12 @ 3'	01/10/19 11:35	Soil	07/09/19			Hold Samples	
1901083-005A	TP-8 @ 3'	01/10/19 0:00	Soil	07/09/19			Hg_S_7471B Met_S_6010B CAM17 VOC_S_8260B VOC_S_GRO	
1901083-006A	TP-10 @ 4'	01/10/19 13:45	Soil	07/09/19			Hg_S_7471B Met_S_6010B CAM17 VOC_S_8260B VOC_S_GRO	

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8260

1901083

CHAIN OF CUSTODY RECORD

PROJECT NUMBER 15693.000.000 | PROJECT NAME Richmond Country Club

SAMPLED BY: (SIGNATURE/PRINT) Ryan Reid

PROJECT MANAGER: (SIGNATURE/PRINT) Scott Johns

ROUTING: E-MAIL twerts@sjohns@engeo.com

	SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	TPHg+VOCs	CAM 17	REMARKS / REQUIRED DETECTION LIMITS
001A	TP-2 @ 4.5'	1-10-19	0930	Soil	1	Sleeve	N/A			Hold
002A	TP-3 @ 3'	1-10-19	1015							Hold
003A	TP-4 @ 11'	1-10-19	1025							Hold
004A	TP-12 @ 3'	1-10-19	1135							Hold
005A	TP-8 @ [illegible] 3'	1-10-19	1225					X	X	
006A	TP-10 @ [illegible] 4'	1-10-19	1345					X	X	

Temp. 3°C #2

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
	1/11/19 09:28		Jennifer Ludwig	10:36am 1/11/19	
	1/11/19 11:20 AM	NAVIN G.			
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE/TIME	REMARKS	

ENGEO INCORPORATED

2010 CROW CANYON PLACE SUITE 250
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FCS

Sample Receipt Checklist

Client Name: Engeo (San Ramon)

Project Name: Richmond Country Club

Work Order No.: 1901083

Date and Time Received: 1/11/2019

Received By: NG

Physically Logged By: Katherene Evans

Checklist Completed By: Katherene Evans

Carrier Name: First Courier

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Applicable

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Applicable
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	3.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: na

pH Adjusted by: na

Comments:

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F.3 - Phase II Peer Review

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FIRSTCARBON SOLUTIONS™

November 21, 2019

Ms. Lina Velasco
Planning and Building Services Director
City of Richmond
450 Civic Plaza
Richmond, CA 94804

Subject: Peer Review of Phase II Environmental Site Assessment Report
Prepared by Engeo on January 31, 2019
Assessor's Parcel Numbers (APN) 405-050-006 and 405-050-019
Richmond Country Club
1 Markovich Lane, Richmond, California

Dear Ms. Velasco:

First Carbon Solutions (FCS) is pleased to submit this peer review of the Phase II Environmental Site Assessment report prepared for the Richmond Country Club by Engeo on January 31, 2019. The report provided for review was labeled as a "draft".

Based on the review described herein, FCS concludes that the shallowest soils within the portion of the Property that was sampled are contaminated by the pesticide Dieldrin at concentrations above remedial action levels. Future development of that area should include sampling and analysis of the shallowest soils for pesticides. Personnel involved in soil handling should be informed about the presence of Arsenic, Dieldrin, and Vanadium at concentrations above remedial action levels.

Depth to groundwater, groundwater flow direction, and the presence of contaminants in groundwater are unknown. Although groundwater was not characterized, additional site assessment is not warranted.

Background

According to the Engeo Phase II report, "*the Property consists of undeveloped vegetated land. Review of historical records indicates that the Property has remained undeveloped land since the late 1930s. A railroad line has been mapped along the western boundary of the study area since at the least the late 1890s. Prior to the golf course development in the 1940s, the San Pablo Oil Tank Farm operated on a portion of the golf course and further east (offsite). The San Pablo Oil Tank Farm is no longer present and has since undergone residential development. Undocumented fill has been present on the central and northern portion of the study area since at least the 1950s*".

On December 28, 2018 Engeo prepared a Phase I Environmental Site Assessment report, which identified environmental concerns associated with the undocumented fill placed in the central and northern portions of the Property, and the railroad tracks located along the western boundary of the Property. It appears that the Property was used to dispose of organic or "green" waste, but the location of the waste was unknown. The Phase I Engeo report recommended the collection of soil samples within the areas of concern.

The purpose of the Engeo Phase II report was to investigate "*soil adjacent to the existing railroad alignment*" and to characterize "*undocumented fill placed over the years as part of golf course operations*".

The report mentioned that USA North Service Alert was contacted "*to notify operators of underground utilities at and near the Property*". The USA Alert number was not included in the report.

On January 10, 2019, Engeo utilized a hand-auger to collect 12 soil samples at depths ranging from three (3) to nine (9) inches below ground surface (bgs). The actual depths of the "SB" soil samples were not provided. It was not clear how the sampled soils were placed in stainless steel liners.

Additionally, "*select soil samples were collected via test pits excavated with a backhoe*". The procedure used to collect soil samples with the backhoe is not mentioned. It was not clear if the soil samples were retrieved using the bucket of the backhoe, or if they were collected using the hand-auger once the backhoe reached the desired sampling depth.

The test pit soil samples were collected from six (6) locations at depths of three (3), four (4), four and a half (4.5), and 11 feet bgs. However, only two (2) of these test pit soil samples were analyzed (TP-8 @ 3' and TP-10 @ 4'). It is unclear why the other four (4) soil samples (TP-2 @ 4.5', TP-3 @ 3', TP-4 @11', and TP-12 @ 3') were placed "on hold" and not analyzed. The laboratory received the test pit samples on January 11, 2019.

Report Review

The Engeo Phase II report did not describe the soils that were encountered. Additionally, FCS could not find any reference in the Engeo reports about groundwater depth and flow direction at the site or its vicinity. This is basic information used to determine the potential migration of contamination from off-site sources. According to the Phase I report, "*no information was obtained regarding local groundwater conditions*". Given that groundwater was not mentioned in the report, FCS assumes that groundwater was not encountered at sampling location TP-4. Therefore, FCS surmises that in January 2019 groundwater depth within the sampled area was greater than 11 feet bgs.

The report indicated that four (4) soil samples were composited, but the samples were not identified in the body of the report. However, the composited soil samples were mentioned in the Chain of Custody document and shown on Figure 2 (below). Although not stated in the report, the Chain of Custody indicated that sample compositing was done by the laboratory.

Figure 2 refers to "*Test pit sample location (Engeo, 2018)*". However, the work described in the report took place in January 2019.

According to the report, the four (4) composite samples were analyzed for:

- Volatile Organic Compounds (VOCs) and Total Petroleum Hydrocarbons as Gasoline (TPHg) by Environmental Protection Agency (EPA) Method 8260B,
- Extractable Petroleum Hydrocarbons as Diesel Fuel and Motor Oil by EPA Method 8015,
- CAM 17 Metals by EPA Methods 6010B and 7471,
- Organochlorine Pesticides (OCP) by EPA Method 8081A,
- Polychlorinated biphenyls (PCBs) by EPA Method 8082, and
- Semi-volatile Organic Compounds (SVOCs) by EPA Method 8270C.

However, that is incorrect. According to the laboratory report, the composite samples were not analyzed for VOCs, Petroleum Hydrocarbons, or SVOCs.

The report indicated that the two (2) test pit samples were analyzed for TPHg, VOCs, and CAM 17 Metals. This is partially correct. According to the laboratory report, these soil samples were also analyzed for Extractable Petroleum Hydrocarbons as Diesel Fuel and Motor Oil.

The analytical data were not tabulated. The soil samples in which chemicals of concern were detected were not mentioned in the text. The reader cannot know in which samples chemicals were detected without having to go through the 130 pages of analytical data included in Appendix A of the Engeo Phase II report. Incidentally, the sample logs in Appendix A are duplicated, which may create some confusion.

The report referred to "*maximum concentrations*", but did not identify the soil samples in which those concentrations were detected. For instance, by simply reading the report it cannot be determined if Petroleum Hydrocarbons were detected in one (1) or several soil samples, since only the maximum concentrations were provided. The FCS review of the analytical data indicated that Petroleum Hydrocarbons as Diesel Fuel and Motor Oil were detected in all the discrete (not composited) soil samples that were analyzed for Petroleum Hydrocarbons: SB-2, SB-5, SB-8, and SB-11. As mentioned above, the composited samples were not analyzed for Petroleum Hydrocarbons

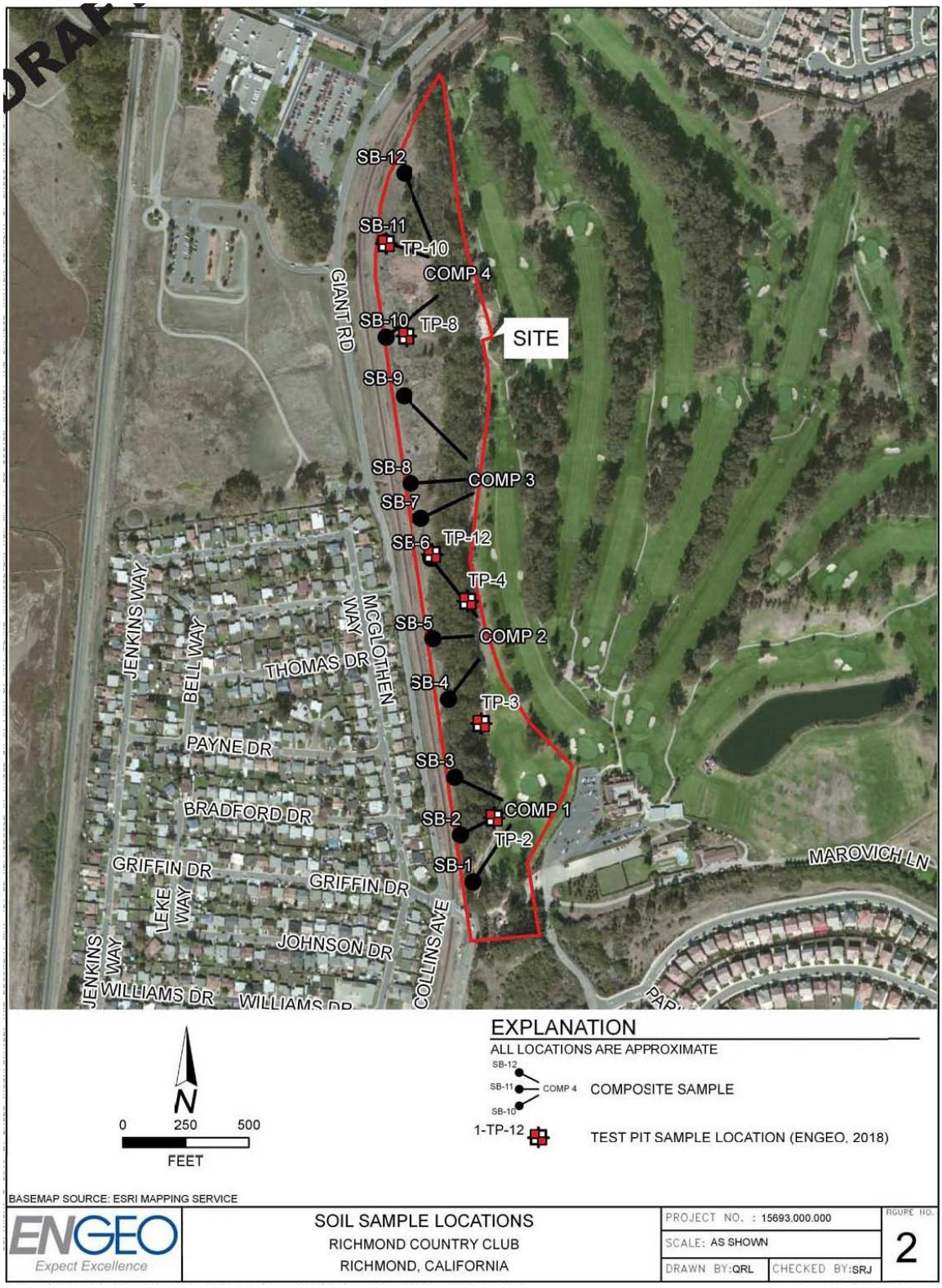


Figure 2: Engeo Soil Sampling Locations

It is also unclear if the largest concentrations of metals were detected in one (1) soil sample or in several soil samples. The largest concentration of Arsenic was 3.99 parts-per-million (ppm) in soil sample Comp-3, and not 3.84 ppm as stated on the report. The report mentioned two (2) maximum concentrations for Nickel. The actual concentration of Nickel was 33.70 ppm, and not 45.10 ppm.

The report said that "*while arsenic was reported above the Tier 1 ESLs, which is common, the concentrations are within the typical San Francisco Bay Area natural occurring background concentrations*". The report did not define "*ESLs*" and did not provide the background concentrations. .

"ESLs" refers to "Environmental Screening Levels" as determined in January 2019 by the San Francisco Regional Water Quality Control Board (RWQCB). The Tier 1 sample data are directly compared to ESLs to determine the need for additional site investigation, remedial action, or a more detailed risk assessment.

The report concluded that "*the reported concentrations are below the current DTSC SL's and RWQCB ESLs for residential screening levels, or within typical background concentrations for metals*". The Engeo Phase II report did not provide the residential screening levels or the typical background metal concentrations.

The Tier 1 ESLs established by RWQCB were exceeded by the reported concentrations of Arsenic, Dieldrin, and Vanadium (Table 1, below). Although the concentrations of Arsenic and Vanadium may very well be within background levels, the detection of Dieldrin voids the conclusion made by Engeo.

TABLE 1: ENVIRONMENTAL SCREENING LEVELS

Metal	Maximum Concentration	Tier 1 ESL
Arsenic	3.99	0.067
Dieldrin	0.0058	0.00046
Vanadium	28.8	18
Concentrations in parts-per-million (ppm) ESL: Environmental Screening Level		

The Phase II report did not mention if the sampling equipment, such as the hand-auger or the bucket of the backhoe, were decontaminated prior to collecting soil samples from different sampling locations. The storage and/or disposal of the investigation-derived waste, such as excavated soil and decontamination water, is not mentioned on the Engeo Phase II report.

Conclusions

The Phase II Engeo report determined that the site is not contaminated by Petroleum Hydrocarbons, VOCs, PCBs, or SVOCs at concentrations above remedial action levels. The maximum concentrations of Arsenic and Vanadium exceeded the current ESLs established for those metals, but it is likely that the reported concentrations lie within background or naturally occurring levels. The presence of Dieldrin in soil sample Comp-4 at concentrations above ESLs suggests that the shallowest soils may be contaminated by pesticides. Although groundwater was not assessed, additional site assessment is not warranted.

Future development of the study area should include sampling and analysis of the shallowest soils for pesticides. Personnel involved in soil handling should be informed about the presence of Arsenic, Dieldrin, and Vanadium at concentrations above their respective ESLs.

We appreciate your selection of FCS for this project and look forward to assisting you further on this and other projects. If you have any questions, please do not hesitate to contact us.

Sincerely,



Rodrigo Proust
Registered Geologist

Appendix G:
Hydrology and Water Quality Supporting Information

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G.1 - Storm Water Control Plan

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STORMWATER CONTROL PLAN

for

RICHMOND COUNTRY CLUB

City of Richmond

DECEMBER 20, 2019

MLC Holdings, Inc.
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TABLE OF CONTENTS

I. Project Data 1

II. Setting 2

II.A. Project Location and Description 2

II.B. Existing Site Features and Conditions 2

II.C. Opportunities and Constraints for Stormwater Control 2

III. Low Impact Development Design Strategies 2

III.A. Optimization of Site Layout 3

III.A.1. Limitation of development envelope 3

III.A.2. Preservation of natural drainage features 3

III.A.3. Setbacks from creeks, wetlands, and riparian habitats 3

III.A.4. Minimization of imperviousness 3

III.A.5. Use of drainage as a design element 3

III.B. Use of Permeable Pavements 3

III.C. Dispersal of Runoff to Pervious Areas 3

III.D. Bioretention or other Integrated Management Practices 3

IV. Documentation of Drainage Design 3

IV.A. Descriptions of each Drainage Management Area 3

IV.A.1. Table of Drainage Management Areas 3

IV.A.2. Drainage Management Area Descriptions **Error! Bookmark not defined.**

IV.B. Integrated Management Practice Descriptions 5

IV.B.1. Areas Draining to Non-LID Treatment 5

IV.C. Tabulation and Sizing Calculations 6

V. Source Control Measures 6

V.A. Site activities and potential sources of pollutants 6

V.B. Source Control Table 6

V.C. Features, Materials, and Methods of Construction of Source Control BMPs 8

VI. Stormwater Facility Maintenance 8

VI.A. Ownership and Responsibility for Maintenance in Perpetuity 8

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility 8

VII. Construction Plan C.3 Checklist 9

VIII. Certifications 9

Tables

Table 1. Project Data 1
Table 2. Drainage Management Areas 4
Table 3. Source Controls 5
Table 4. Construction Plan C.3 Checklist 8

Figures

Figure 1 - Vicinity Map
Figure 2 - Aerial Exhibit
Figure 3A - Existing Conditions
Figure 3B - Existing Conditions
Figure 4A - Proposed Site Conditions
Figure 4B - Proposed Site Conditions

Attachments

Attachment A - Stormwater Management Plan/ Bioretention Facilities Details
Attachment B – DMA Calculations
Attachment C - IMP Sizing Calculator Output

This Stormwater Control Plan was prepared using the template dated December 2019.

I. PROJECT DATA

Table 1. Project Data

Project Name/Number	Richmond Country Club
Application Submittal Date	12/20/2019
Project Location	APN 405-050-006-07, APN 405-050-019-0
Name of Developer	MLC Holdings, Inc.
Project Phase No.	N/A
Project Type and Description	Residential with 102 single-family homes
Project Watershed	Rheem and Garrity Creek Watersheds
Total Project Site Area (acres)	27.05±
Total Area of Land Disturbed (acres)	27.05±
Total New Impervious Surface Area (sq. ft.)	437,146
Total Replaced Impervious Surface Area	2,534
Total Pre-Project Impervious Surface Area	2,534
Total Post-Project Impervious Surface Area	439,680
50% Rule [*]	Applies
Project Density	3.77 DU/Acre
Applicable Special Project Categories [Complete even if all treatment is LID]	None
Percent LID and non-LID treatment	100% LID
HM Compliance [†]	Does not Apply. Site drains to a tidally influenced channel that extend continuously to the Bay

[*50% rule applies if:
Total Replaced Impervious Surface Area > 0.5 x Pre-Project Impervious Surface Area]

[†HM required (unless project meets one of the exemptions on *Guidebook* p. 9) if:
(Total New Impervious Surface Area + Total Replaced Impervious Surface Area) ≥ 1 acre]

II. SETTING

II.A. Project Location and Description

The project site is located north of Markovinch Lane and borders existing Richmond Country Club golf course to the east and AT & SF Railroad and Giant Highway to the north and west. The proposed site consists of 102 single family lots, 1 water quality parcel, 2 open space parcels and is proposed to be zoned as PA (Planned Area) District. See Figure 1 for Vicinity Map.

II.B. Existing Site Features and Conditions

The existing site (portion of APN 405-050-006-07 and APN 405-050-019-0) is approximately 27.05 acres. Overall, there are 2,534 square feet of impervious area, all comprised of roof area at the south side of the site. The rest of the site is comprised of dense trees over the whole site. The site has local high points at north, which slope toward the west of the site (slopes vary from 1-6%). After flowing toward the Railroad, runoff is conveyed under the tracks into the existing storm drain system, which then connects to the public storm drain system in Giant Highway. According to NRCS Web Soil Survey the hydrologic soil is classified as group D. According to the "Preliminary Geotechnical Exploration" prepared by Engeo, the depth to groundwater was never encountered assume to be more than 20 feet deep.

The site is located in the Rheem and Garrity Creek Watersheds. The site is located in the western part of the county. Annual temperature patterns are typical of coastal areas. Precipitation is evenly distributed throughout the fall, winter and spring but is very low in the summer. Moisture occurring in the summer is generally from the coastal fog. Mean annual precipitation is approximately 22 inches at the site.

II.C. Opportunities and Constraints for Stormwater Control

Opportunities for rain storage and reuse are hindered by the rain cycle of the Bay Area. The time periods between the rain season and the dry season are long enough to make storage of rainwater for reuse unfeasible.

The water quality parcel contains enough area to treat all onsite runoff via bioretention.

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

The site layout implements multiple low impact design strategies to mitigate stormwater control and more effectively treat onsite runoff.

III.A. Optimization of Site Layout

III.A.1. Limitation of development envelope

Development will occur on all areas of the site, because no part of the site is undevelopable or contains development constraints.

III.A.2. Preservation of natural drainage features

The site layout also maintains existing drainage patterns of moving toward the south of the site, connecting into Giant Highway and Collins Road at their relatively higher elevations. Overland release will be accounted for in the design, maintaining existing flow patterns as well.

III.A.3. Setbacks from creeks, wetlands, and riparian habitats

There are no wetlands, creeks or riparian habitats on or close to the site.

III.A.4. Minimization of imperviousness

The proposed site does not contain additional impervious areas beyond roadways, attached sidewalks, driveways and building footprints.

III.A.5. Use of drainage as a design element

A bioretention area will be used to treat site runoff and is located at the south end of the site. The overland release pattern also conveys stormwater to the southwest corner of the site, maximizing treatment.

III.B. Use of Permeable Pavements

The site contains large open space areas to filter flow. There are no permeable pavers.

III.C. Dispersal of Runoff to Pervious Areas

There is one water quality parcel that is pervious and will be used as a self-treating area. Pervious landscape areas throughout the site will also mitigate flow by lowering peak discharge.

III.D. Bioretention or other Integrated Management Practices

One bioretention area is used as the IMP to treat all stormwater runoff for the site. It is located at the southern end of the site, where runoff is piped to it from catch basins and area drain systems to be treated. Treated water will then be conveyed through storm drain pipes into an existing storm drain system in Giant Highway. The bioretention area is in a water quality parcel, where it is open and easily accessible to allow for maintenance. The bioretention area surface is flat, maximizing contact area and treatment area.

IV. DOCUMENTATION OF DRAINAGE DESIGN

IV.A. Descriptions of each Drainage Management Area

IV.A.1. Table of Drainage Management Areas

Table 2. Drainage Management Areas

DMA Name	*Area (SF)*	*Surface Type/Description*	*DMA Type/Drains to*
DMA 1 - Impervious	*369,207*	*Concrete or Asphalt*	*IMP 1*
DMA 1 - Pervious	*386,008*	*Landscape & Bioretention*	*IMP 1*
DMA 2 - Impervious	*14,645*	*Concrete or Asphalt*	*IMP 2*
DMA 2 - Pervious	*29,558*	*Landscape & Bioretention*	*IMP 2*
DMA 3 - Impervious	*8,154*	*Concrete or Asphalt*	*IMP 3*
DMA 3 - Pervious	*16,234*	*Landscape & Bioretention*	*IMP 3*
DMA 4 Impervious	*9,356*	*Concrete or Asphalt*	*IMP 4*
DMA 4 Pervious	*15,570*	*Landscape & Bioretention*	*IMP 4*
DMA 5 Impervious	*15,041*	*Concrete or Asphalt*	*IMP 5*
DMA 5 Pervious	*40,499*	*Landscape & Bioretention*	*IMP 5*
DMA 6 Impervious	*15,048*	*Concrete or Asphalt*	*IMP 6*
DMA 6 Pervious	*38,987*	*Landscape & Bioretention*	*IMP 6*
DMA 7 Impervious	*5,695*	*Concrete or Asphalt*	*IMP 7*
DMA 7 Pervious	*34,067*	*Landscape & Bioretention*	*IMP 7*

DMA 1 - Impervious, totaling 369,207 square feet, drains through roof gutters and piping, area drain systems and sheet flow over sidewalks and road surfaces into catch basins. All DMA's drain into IMP 1.

DMA 1 - Pervious, totaling 386,008 square feet, drains over landscape strips and backyard pervious areas. All DMA's drain into IMP 1.

DMA 2- Impervious, totaling 14,645 square feet, drains through roof gutters and piping, area drain systems and sheet flow over sidewalks and road surfaces into catch basins. All DMA's drain into IMP 2.

DMA 2 - Pervious, totaling 29,558 square feet, drains over landscape strips and backyard pervious areas. All DMA's drain into IMP 2.

DMA 3- Impervious, totaling 8,154 square feet, drains through roof gutters and piping, area drain systems and sheet flow over sidewalks and road surfaces into catch basins. All DMA's drain into IMP 3.

DMA 3 - Pervious, totaling 16,234 square feet, drains over landscape strips and backyard pervious areas. All DMA's drain into IMP 3.

DMA 4- Impervious, totaling 9,356 square feet, drains through roof gutters and piping, area drain systems and sheet flow over sidewalks and road surfaces into catch basins. All DMA's drain into IMP 4.

DMA 4 - Pervious, totaling 15,570 square feet, drains over landscape strips and backyard pervious areas. All DMA's drain into IMP 4.

DMA 5- Impervious, totaling 15,041 square feet, drains through roof gutters and piping, area drain systems and sheet flow over sidewalks and road surfaces into catch basins. All DMA's drain into IMP 5.

DMA 5 - Pervious, totaling 40,499 square feet, drains over landscape strips and backyard pervious areas. All DMA's drain into IMP 5.

DMA 6- Impervious, totaling 15,048 square feet, drains through roof gutters and piping, area drain systems and sheet flow over sidewalks and road surfaces into catch basins. All DMA's drain into IMP 6.

DMA 6 - Pervious, totaling 38,987 square feet, drains over landscape strips and backyard pervious areas. All DMA's drain into IMP 6.

DMA 7- Impervious, totaling 5,695 square feet, drains through roof gutters and piping, area drain systems and sheet flow over sidewalks and road surfaces into catch basins. All DMA's drain into IMP 7.

DMA 7 - Pervious, totaling 34,067 square feet, drains over landscape strips and backyard pervious areas. All DMA's drain into IMP 7.

IV.B. Integrated Management Practice Descriptions

IMP 1 is a bioretention area that treats all of the site runoff. Treated stormwater discharges into an existing pipe and eventually into an existing basin north of the site, where it infiltrates into the soil. IMP 1 is located on the northern part of the site for easy access and optimal treatment location. Side slopes on the bioretention area do not exceed 3:1 and thereby avoid falling hazards along the access path.

IV.B.1. *Areas Draining to Non-LID Treatment*

This does not apply to this project as this is not a special project, and the site is 100% LID treated.

IV.C. Tabulation and Sizing Calculations

See Appendix for the impervious and pervious DMA calculations as well as the IMP Calculation Summary.

V. SOURCE CONTROL MEASURES

V.A. Site activities and potential sources of pollutants

V.B. Source Control Table

Table 3. Source Controls

Potential source of runoff pollutants	*Permanent source control BMPs*	*Operational source control BMPs*
On-site storm drain inlets	Mark all accessible onsite inlets with the words "No Dumping! Flows to Creek" or approved equivalent language. Detail location of all onsite storm drain inlets on Stormwater Control Plan Drawings.	Maintain and periodically replace inlet markings as needed. Provide stormwater pollution prevention information to new site owners, lessees, or operators. Include the following in lease agreement "Tenant shall not discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains." Inlets and pipes conveying stormwater to BMPs shall be inspected and maintained as part of the Project Operation and Maintenance Plan.
Need for future indoor or structural pest control	Project construction drawings shall incorporate features that discourage entry of pests.	Provide Integrated Pest Management (IPM) information to owners, lessees, and operators.
Landscape/outdoor pesticide use	Final project landscape plans shall reflect the following: Design that minimizes need for irrigation; minimizes runoff; promotes surface infiltration where appropriate; and details the use of planting material that minimizes the amount of	Maintain landscaping using minimum or no pesticides. Provide Integrated Pest Management information to new owners, lessees and operators. See applicable BMPs in Fact Sheet SC-41, "Building and

	fertilizers and pesticides that are needed. Where landscaped areas are used to retain and detain stormwater, project landscape plans shall specify the use of plants that are tolerant of saturated soil conditions. Project landscape plans shall detail use of plantings appropriate to site soils, slopes, climate, sun, land use, air movement, ecological consistency, and plant interactions. Detail locations of stormwater treatment BMPs on Stormwater Control Plan Drawings.	Grounds Maintenance," in the CASQA Stormwater Quality Handbooks www.babmphandbooks.com
Roofing, gutters, and trim	Do not utilize roofing, gutter, or architectural trim materials made of copper or other unprotected metals that would leach into the storm water runoff.	
Fire Sprinkler Test Water	Provide a means to drain fire sprinkler test water to the sanitary sewer.	See the note in Fact Sheet SC-41 "Building and Grounds Maintenance" in the CASQA Stormwater Quality Handbooks
Private Drive and Sidewalks		Owners, lessees, and operators will be encouraged to sweep sidewalks regularly to prevent the accumulation of litter and debris. Debris from pressure washing shall be collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser shall be collected and

		discharged to the sanitary sewer and not discharged to a storm drain.

V.C. Features, Materials, and Methods of Construction of Source Control BMPs

VI. STORMWATER FACILITY MAINTENANCE

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

As part of the C.3 stormwater requirements, municipalities must verify stormwater treatment facilities function and are maintained as intended by their design. Facilities on site will be maintained and are the responsibility in their entirety by the HOA with funding by the project HOA.

MLC Holdings, Inc. known hereon as the property owner, shall provide a Storm Water Control Operation and Maintenance (O&M) Plan for review of the City of Richmond.

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

Bioretention facilities require routine maintenance to prevent a loss in the rate of infiltration, insure unobstructed flow, prevent erosion, and keep plants healthy and the engineered soil biologically active. Typical maintenance requirements of bioretention facilities will include:

- Inspection of inlets for channels, exposure of soils, and other evidence of erosion.
- Replenishment of all erosion control measures necessary.
- Inspect outlets to ensure that planter has not clogged or that excessive erosion has not inhibited flow.
- Inspection of facility side slopes for evidence of erosion.
- Observe percolation in treatment areas to verify design percolation rates are met (i.e., whether a 48-hour percolation window is exceeded).
- Till or replace engineered soil in treatment areas where design percolation rates are not met.
- Examine all vegetation to insure it is healthy and dense enough to provide filtering. Replenish mulch as necessary, remove fallen leaves and debris and prune large shrubs and trees. Replace dead plants and remove noxious and invasive vegetation.
- Confirm irrigation is adequate but not excessive.
- Remove any invasive plans that might be present.

Abate any potential vectors by insuring there are no areas where water stands longer than 48 hours following a storm. If mosquito larvae are present and persistent, contact the Contra Costa Mosquito and Vector Control District for information and advice. Mosquito larvicides shall be applied only when absolutely necessary and then, only by a licensed individual or contractor.

VII. CONSTRUCTION PLAN C.3 CHECKLIST

Table 4. Construction Plan C.3 Checklist

Stormwater Control Plan Page #	*BMP Description*	*See Vesting Tentative Map Sheet #s*
Attachment A	IMP 1 – Shallow Basin Bioretention Facilities	C5.1
	IMP 2 – Shallow Basin Bioretention Facilities	C5.1
	IMP 3 – Shallow Basin Bioretention Facilities	C5.1
	IMP 4 – Shallow Basin Bioretention Facilities	C5.1
	IMP 5 – Shallow Basin Bioretention Facilities	C5.2
	IMP 6 – Shallow Basin Bioretention Facilities	C5.2
	IMP 7 – Shallow Basin Bioretention Facilities	C5.2

VIII. CERTIFICATIONS

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order R2-2015-0049.

Colt Alvernaz, P.E.

RCE #75740

Figures



FIGURE 1
VICINITY MAP

CITY OF RICHMOND CONTRA COSTA COUNTY CALIFORNIA

0' 500' 1,500' 2,000'

SCALE: 1" = 500' DATE: DECEMBER 2019

cbg
CIVIL ENGINEERS
SAN RAMON ▪ (925) 866-0322
SACRAMENTO ▪ (916) 375-1877
WWW.CBANDG.COM
▪ SURVEYORS ▪ PLANNERS

12/18/2019 4:58 PM

F:\2924-010\ACAD\EXHIBITS\SWMP\FIGURES\FIGURE 1-VICINITY MAP.DWG



FIGURE 2
AERIAL EXHIBIT

CITY OF RICHMOND CONTRA COSTA COUNTY CALIFORNIA

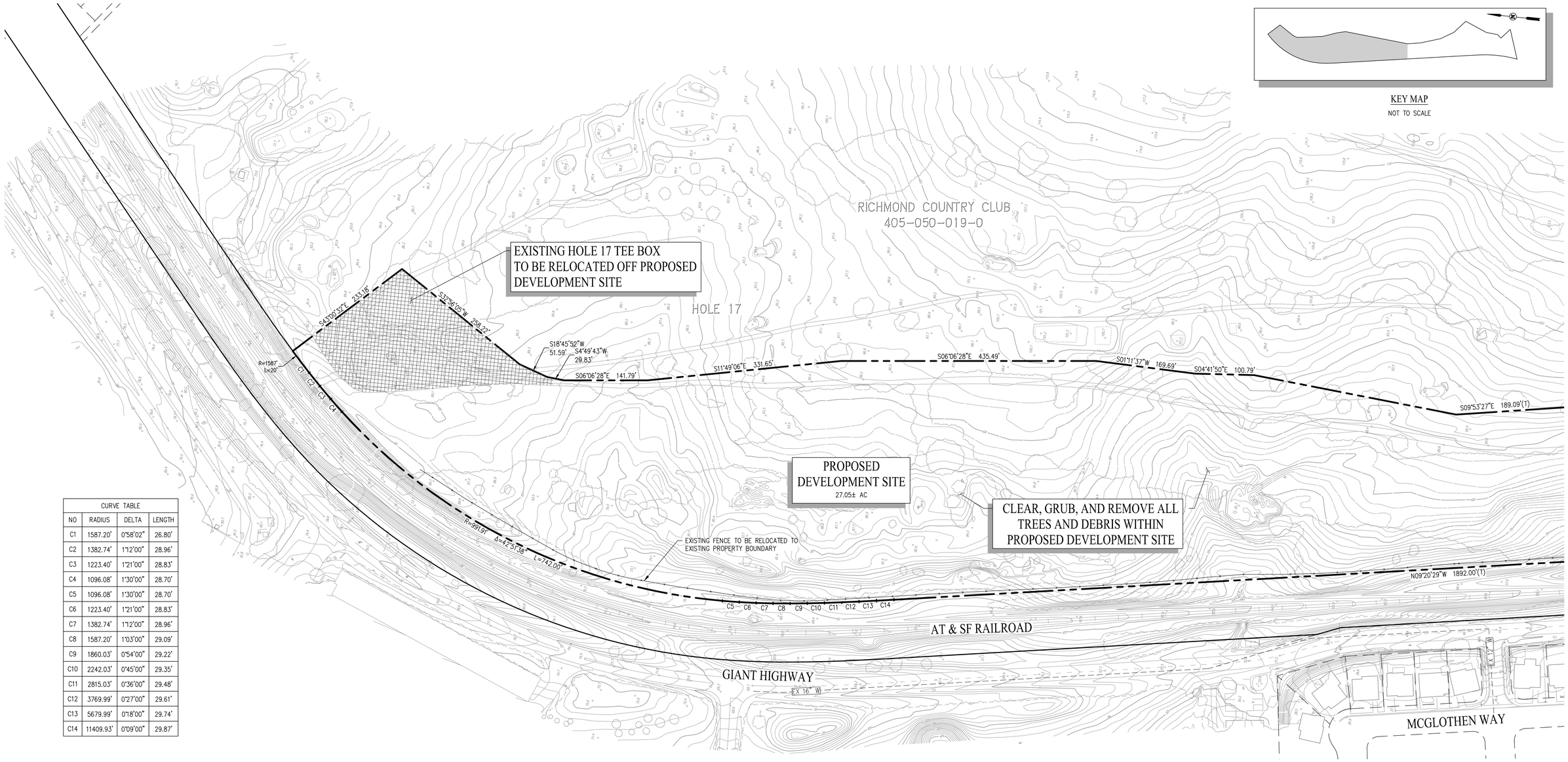
0' 150' 450' 600'

SCALE: 1" = 150' DATE: MARCH 2019

cbg CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS
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WWW.CBANDG.COM

F:\2924-010\ACAD\EXHIBITS\SWMP\FIGURES\FIGURE 2-AERIAL EXHIBIT.DWG

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CURVE TABLE			
NO	RADIUS	DELTA	LENGTH
C1	1587.20'	0°58'02"	26.80'
C2	1382.74'	1°12'00"	28.96'
C3	1223.40'	1°21'00"	28.83'
C4	1096.08'	1°30'00"	28.70'
C5	1096.08'	1°30'00"	28.70'
C6	1223.40'	1°21'00"	28.83'
C7	1382.74'	1°12'00"	28.96'
C8	1587.20'	1°03'00"	29.09'
C9	1860.03'	0°54'00"	29.22'
C10	2242.03'	0°45'00"	29.35'
C11	2815.03'	0°36'00"	29.48'
C12	3769.99'	0°27'00"	29.61'
C13	5679.99'	0°18'00"	29.74'
C14	11409.93'	0°09'00"	29.87'

FLOOD ZONE:

ZONE X:	AREAS OF MINIMAL FLOOD HAZARD
SOURCE:	FLOOD INSURANCE RATE MAP PANEL 06013C0226G
DATED:	SEPTEMBER 30, 2015

LEGEND

EXISTING STRUCTURE TO BE REMOVED/DEMOLISHED

EXISTING GOLF FACILITY TO BE RELOCATED

FIGURE 3A
EXISTING SITE CONDITIONS

CITY OF RICHMOND CONTRA COSTA COUNTY CALIFORNIA

0' 80' 240' 320'

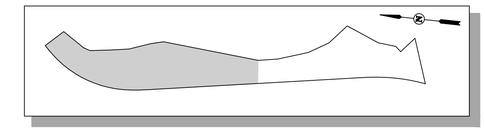
SCALE: 1" = 80'

DATE: DECEMBER 2019

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12/19/2019 9:43 AM

F:\2924-010\ACAD\EXHIBITS\SWMP\FIGURES\FIGURE 3-EXISTING SITE CONDITIONS.DWG



KEY MAP

NOT TO SCALE

SEE FIGURE 3A

RICHMOND COUNTRY CLUB
405-050-019-0

CLUB HOUSE

HOLE 18

EXISTING GOLF PRACTICE FACILITY TO BE REMOVED OFF PROPOSED DEVELOPMENT SITE

PROPOSED DEVELOPMENT SITE
27.05± AC

CLEAR, GRUB, AND REMOVE ALL TREES AND DEBRIS WITHIN PROPOSED DEVELOPMENT SITE

EXISTING FENCE TO BE RELOCATED TO EXISTING PROPERTY BOUNDARY

REMOVE EXISTING BUILDING STRUCTURE AND FOUNDATION

EX SS TO BE REMOVED

EASEMENT FOR HIGHWAY AND INCIDENTAL PURPOSES PER 96-157170

405-050-006-7

WOOD GLEN DRIVE

MARKOVICH LANE

GIANT ROAD

COLLINS AVENUE

AT & SF RAILROAD

GIANT HIGHWAY

MCGLOTHEN WAY

S04°58'02"W 350.93'(T)
N09°53'27"W 189.09'
S18°08'58"E 48.73'
S09°53'27"E 223.88'
S38°26'09"E 164.71'
R=529.00'
Δ=26°20'40"
L=243.23'
R=390.00'
Δ=34°33'17"
L=235.21'
S22°27'48"W 65.07'
S08°57'20"W 132.17'
S5°11'12"W 58.76'
S48°57'10"E 182.14'
S41°07'58"W 83.37'
S17°19'57"W 434.29'
N9°20'29"W 2.26'
N09°20'29"W 1892.00'(T)
R=1687.20'
Δ=15°36'23"
L=459.57'

CURVE TABLE			
NO	RADIUS	DELTA	LENGTH
C15	11509.93'	0°09'00"	30.13'
C16	5779.99'	0°18'00"	30.26'
C17	3870.00'	0°27'00"	30.39'
C18	2915.03'	0°36'00"	30.53'
C19	2342.04'	0°45'00"	30.66'
C20	1960.04'	0°54'00"	30.79'

FIGURE 3B
EXISTING SITE CONDITIONS

CITY OF RICHMOND CONTRA COSTA COUNTY CALIFORNIA

0' 80' 240' 320'

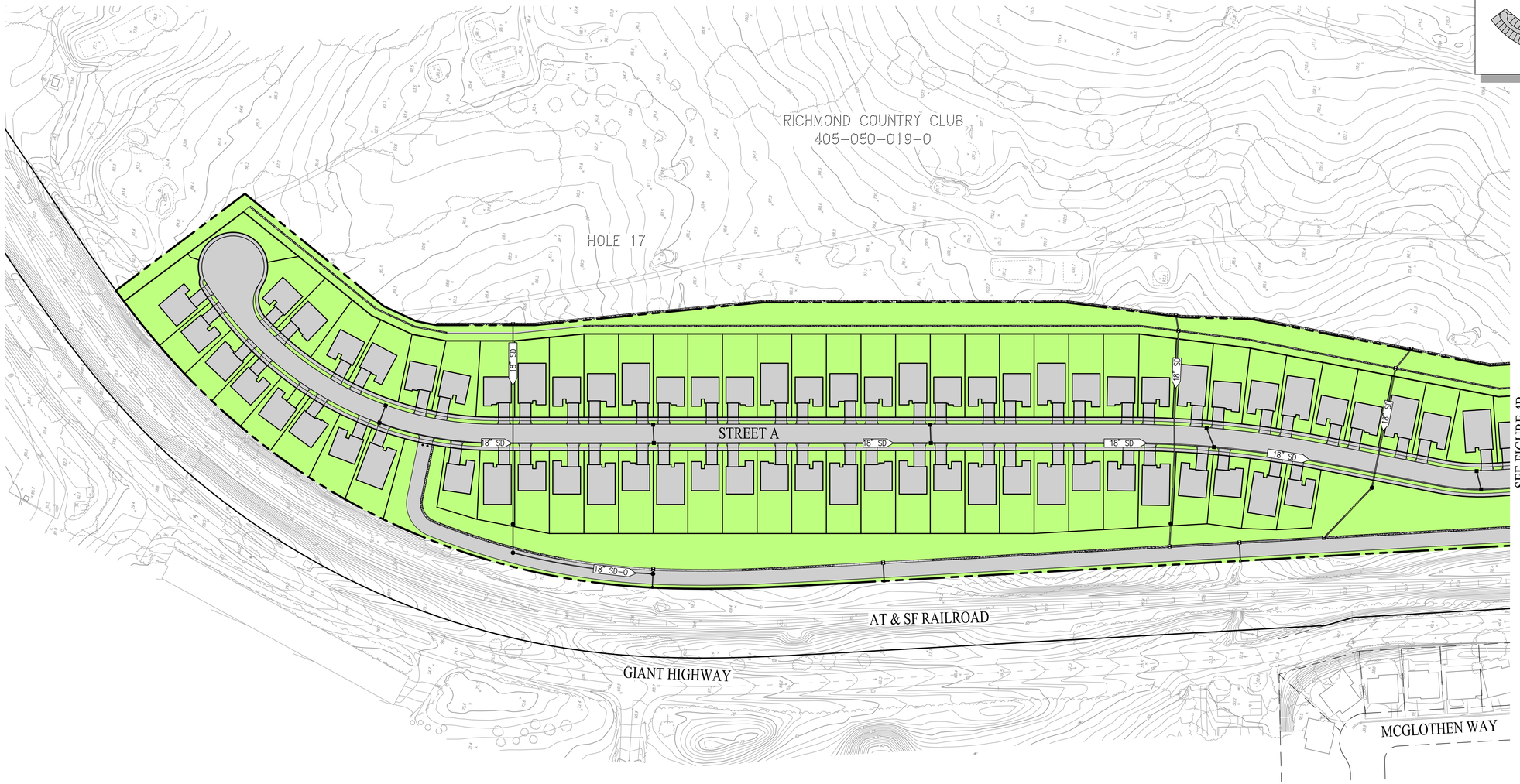
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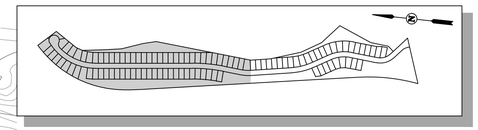
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F:\2924-010\ACAD\EXHIBITS\SWMP\FIGURES\FIGURE 3-EXISTING SITE CONDITIONS.DWG





KEY MAP

NOT TO SCALE

LEGEND

- PROJECT BOUNDARY (27.0± ACRES)
- ON-SITE IMPERVIOUS SURFACE – 10.1± ACRES (37%)
- ON-SITE PERVIOUS SURFACE – 16.9± ACRES (63%)
- SD — PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN FORCE MAIN PIPE
- PROPOSED STORM DRAIN CATCH BASIN
- PROPOSED STORM DRAIN FIELD INLET
- EX 24" SD — EXISTING STORM DRAIN PIPE

FIGURE 4A
PROPOSED SITE CONDITIONS

CITY OF OAKLEY CONTRA COSTA COUNTY CALIFORNIA

0' 80' 240' 320'

SCALE: 1" = 80'

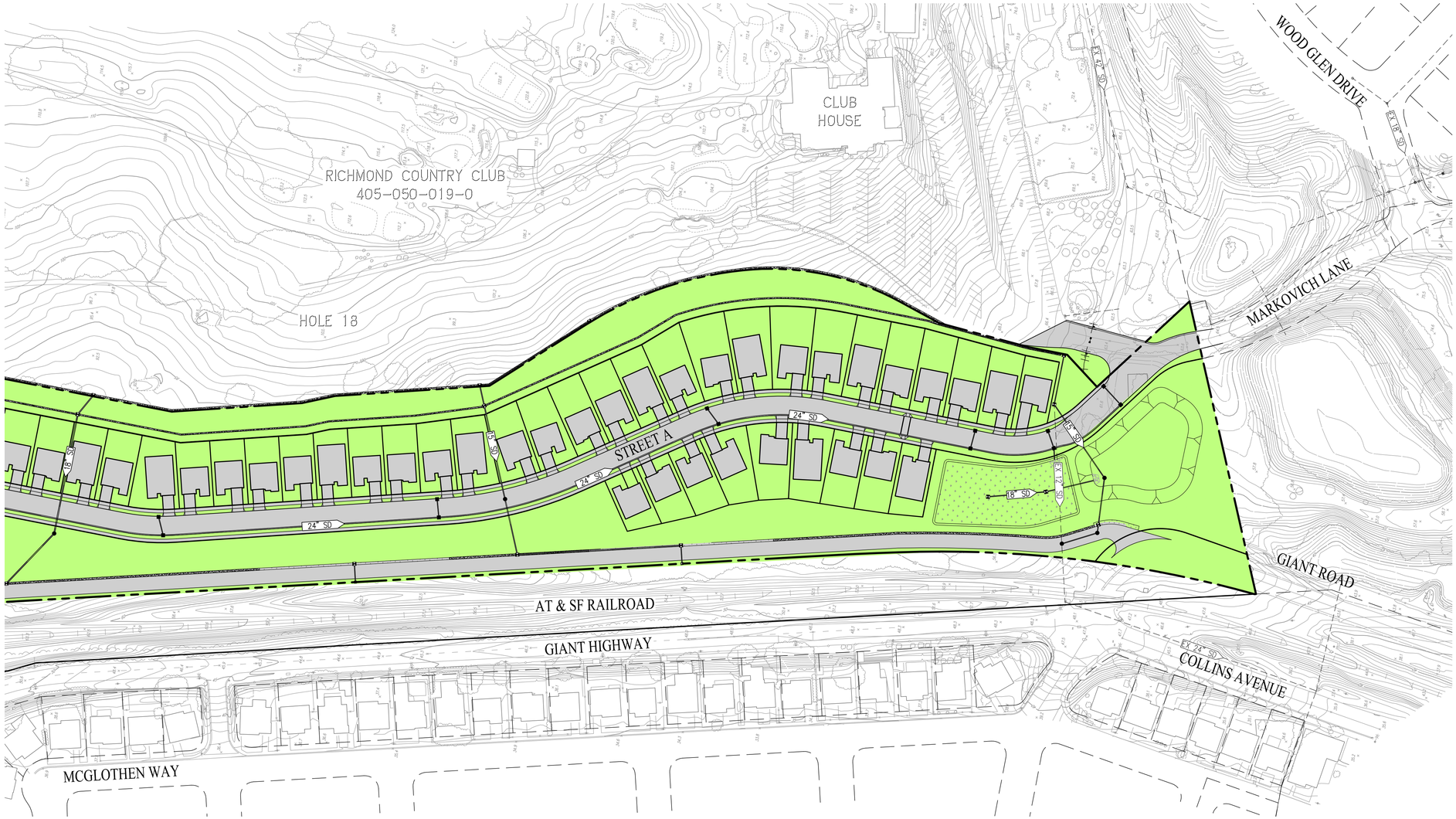
DATE: DECEMBER 2019

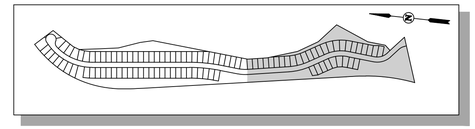
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F:\2924-010\ACAD\EXHIBITS\SWMP\FIGURES\FIGURE 4-PROPOSED SITE CONDITIONS.DWG

SEE FIGURE 4A





KEY MAP

NOT TO SCALE

FIGURE 4B
PROPOSED SITE CONDITIONS

CITY OF OAKLEY CONTRA COSTA COUNTY CALIFORNIA

0' 80' 240' 320'

SCALE: 1" = 80'

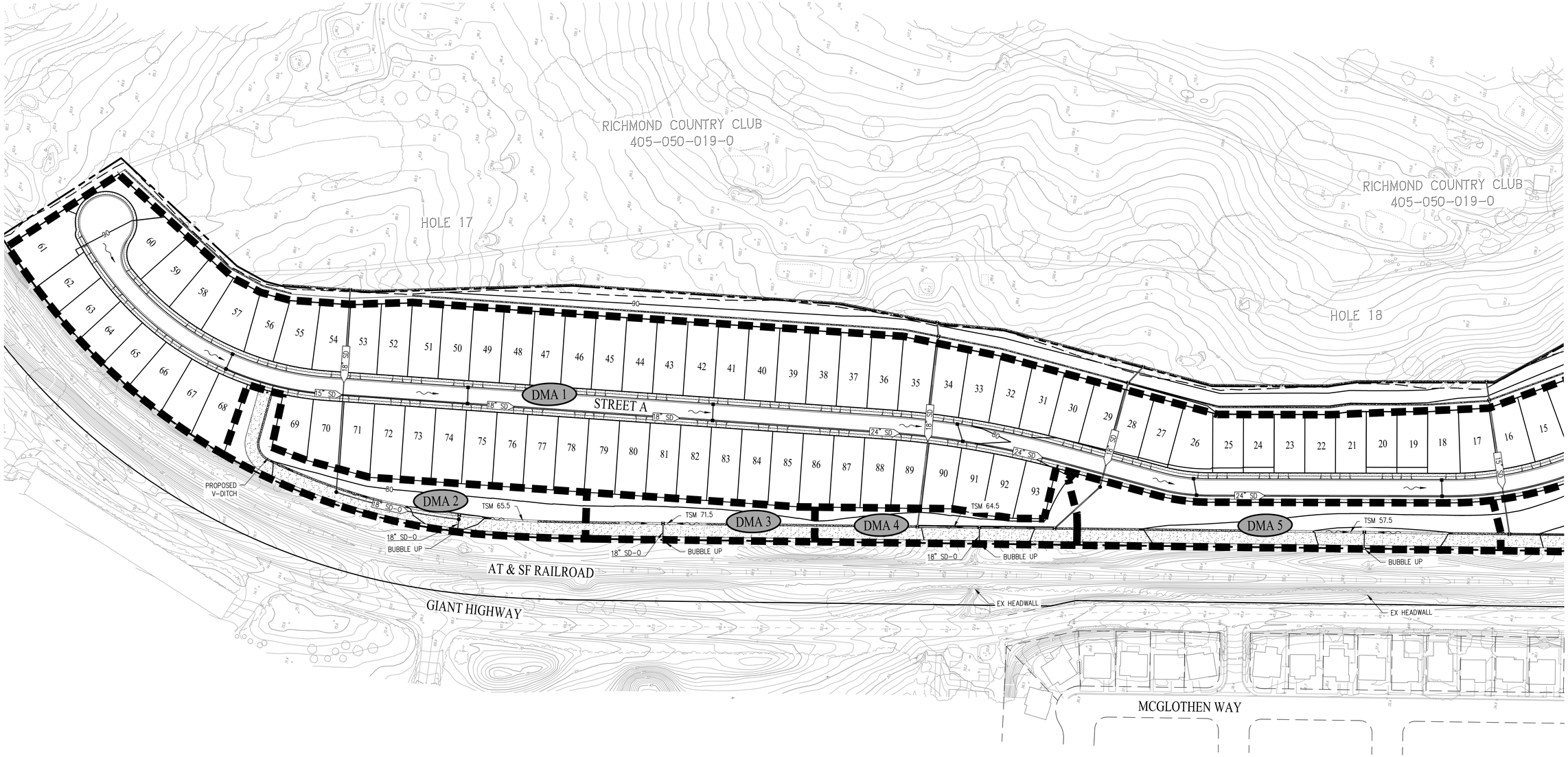
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F:\2924-010\ACAD\EXHIBITS\SWMP\FIGURES\FIGURE 4-PROPOSED SITE CONDITIONS.DWG

Attachments



LEGEND

25	LOT NUMBER
	PROPOSED RIGHT OF WAY
	PROPOSED LOT LINE
	PROPOSED FACE OF CURB
	DMA BOUNDARY
	BIORETENTION AREA
DMA 1	DRAINAGE MANAGEMENT AREA
IMP 1	INTEGRATED MANAGEMENT PRACTICE – BIORETENTION AREA
18" SD	PROPOSED STORM DRAIN
18" SD-OFF	PROPOSED STORM DRAIN (OFFSITE DRAINAGE)

DRAINAGE MANAGEMENT AREA SUMMARY

AREA ID	IMPERVIOUS AREA (SF)	PERVIOUS AREA (SF)	REQUIRED (SF)	PROVIDED (SF)	TREATMENT METHOD
DMA 1	369,207	386,008	16,300	16,300	BIORETENTION
DMA 2	14,645	29,558	704	770	BIORETENTION
DMA 3	8,154	16,234	391	426	BIORETENTION
DMA 4	9,356	15,570	437	468	BIORETENTION
DMA 5	15,041	40,499	764	825	BIORETENTION
DMA 6	15,048	38,987	758	804	BIORETENTION
DMA 7	5,695	34,067	364	397	BIORETENTION

ATTACHMENT A
VESTING TENTATIVE MAP - SUBDIVISION 9528
PRELIMINARY STORMWATER CONTROL PLAN
RICHMOND COUNTRY CLUB

CITY OF RICHMOND CONTRA COSTA COUNTY CALIFORNIA

0' 80' 240' 320'

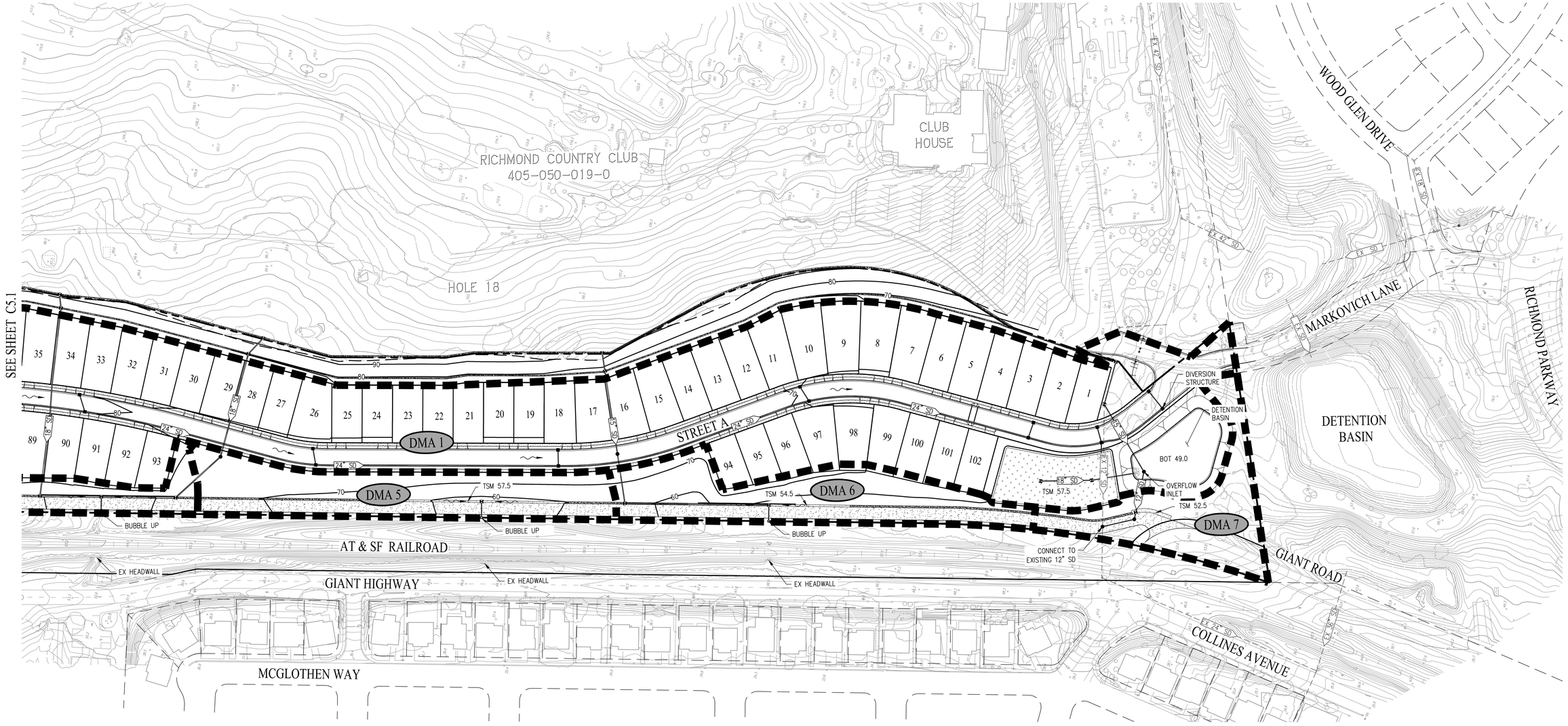
SCALE: 1" = 80' DATE: DECEMBER 2019

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SHEET NO. C5.1 OF 13 SHEETS

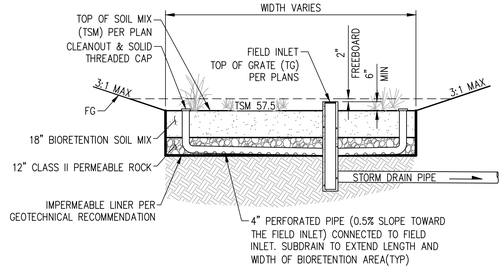
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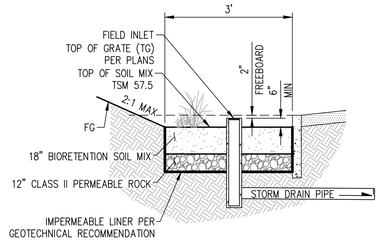


LEGEND

25	LOT NUMBER
	PROPOSED RIGHT OF WAY
	PROPOSED LOT LINE
	PROPOSED FACE OF CURB
	DMA BOUNDARY
	BIORETENTION AREA
DMA 1	DRAINAGE MANAGEMENT AREA
IMP 1	INTEGRATED MANAGEMENT PRACTICE – BIORETENTION AREA
18" SD	PROPOSED STORM DRAIN
18" SD-OFF	PROPOSED STORM DRAIN (OFFSITE DRAINAGE)



BIORETENTION AREA
NOT TO SCALE



BIORETENTION AREA
NOT TO SCALE

ATTACHMENT A
VESTING TENTATIVE MAP - SUBDIVISION 9528
PRELIMINARY STORMWATER CONTROL PLAN
RICHMOND COUNTRY CLUB

CITY OF RICHMOND CONTRA COSTA COUNTY CALIFORNIA

0' 80' 240' 320'

SCALE: 1" = 80'

DATE: DECEMBER 2019

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Attachment B - DMA Calculations - DMA 1

A) Calculate Impervious Area on each lot

Plan Type	Typical Lot Area	Footprint	Driveway Area	Total Impervious per Lot
2	5,000	2,329	320	2,649
3	5,000	1,581	320	1,901
4	5,000	1,547	320	1,867
5	5,000	1,699	320	2,019

B) Total Impervious Areas from Lots

Plan Type	Total Impervious per Lot	Unit Count	Total Impervious
2	2,649	26	68,874
3	1,901	25	47,525
4	1,867	26	48,542
5	2,019	25	50,475
			215,416

C) Other Impervious Area

Sidewalks, Curb & Gutter	Street Driveway	Roadway	Total
47,610	9,297	96,884	153,791

D) Total Impervious Area

Lot Impervious Area	Other Impervious Area	**Total**
215,416	153,791	**369,207**

Attachment B - DMA Calculations - DMA 2

A) Impervious Area

Concrete Ditch	Roadway	**Total**
1,185	13,460	**14,645**

Attachment B - DMA Calculations - DMA 3

A) Impervious Area

Concrete Ditch	Roadway	**Total**
693	7,461	**8,154**

Attachment B - DMA Calculations - DMA 4

A) Impervious Area

Concrete Ditch	Roadway	**Total**
813	8,543	**9,356**

Attachment B - DMA Calculations - DMA 5

A) Impervious Area

Concrete Ditch	Roadway	**Total**
1,243	13,798	**15,041**

Attachment B - DMA Calculations - DMA 6

A) Impervious Area

Concrete Ditch	Roadway	**Total**
1,267	13,781	**15,048**

Attachment B - DMA Calculations - DMA 7

A) Impervious Area

Concrete Ditch	Roadway	**Total**
487	5,208	**5,695**

Project Name: Richmond Country Club
Project Type: Treatment Only
APN: 405-050-006-07, 405-050-019-0
Drainage Area: 998,069
Mean Annual Precipitation: 22.0

ATTACHMENT C

IV. Areas Draining to IMPs

IMP Name: IMP1
IMP Type: Bioretention Facility
Soil Group: IMP1

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 1	369,207	Concrete or Asphalt	1.00	369,207
DMA 1	386,008	Landscape	0.10	38,601
			Total	407,808
			Area	

IMP Sizing

IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
0.040	1.000	16,312	16,300

IMP Name: IMP2
IMP Type: Bioretention Facility
Soil Group: IMP2

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 2	14,645	Concrete or Asphalt	1.00	14,645
DMA 2	29,558	Landscape	0.10	2,956
			Total	17,601
			Area	

IMP Sizing

IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
0.040	1.000	704	770

IMP Name: IMP3
IMP Type: Bioretention Facility
Soil Group: IMP3

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 3	8,154	Concrete or Asphalt	1.00	8,154
DMA 3	16,234	Landscape	0.10	1,623
			Total	9,777
			Area	

IMP Sizing

IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
0.040	1.000	391	426

IMP Name: IMP4
IMP Type: Bioretention Facility
Soil Group: IMP4

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 4	9,356	Concrete or Asphalt	1.00	9,356
DMA 4	15,570	Landscape	0.10	1,557
			Total	10,913
			Area	

IMP Sizing

IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
0.040	1.000	437	468

IMP Name: IMP5
IMP Type: Bioretention Facility
Soil Group: IMP5

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 5	15,041	Concrete or Asphalt	1.00	15,041
DMA 5	40,499	Landscape	0.10	4,050
			Total	19,091
			Area	

IMP Sizing

IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
0.040	1.000	764	825

IMP Name: IMP6
IMP Type: Bioretention Facility
Soil Group: IMP6

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 6	15,048	Concrete or Asphalt	1.00	15,048
DMA 6	38,987	Landscape	0.10	3,899
			Total	18,947
			Area	

IMP Sizing

IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
0.040	1.000	758	804

IMP Name: IMP7
IMP Type: Bioretention Facility
Soil Group: IMP7

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 7	5,695	Concrete or Asphalt	1.00	5,695
DMA 7	34,067	Landscape	0.10	3,407
			Total	9,102
			Area	

IMP Sizing

IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
0.040	1.000	364	397

Report generated on 12/20/2019 12:00:00 AM by the Contra Costa Clean Water Program IMP Sizing Tool software (version 1.3.1.0).

Appendix H:
Noise Supporting Information

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H.1 - Compiled Noise Data

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Summary									
Filename	LxT_Data.421								
Serial Number	4228								
Model	SoundTrack LxT®								
Firmware Version	2.206								
User									
Location									
Job Description									
Note									
Measurement Description									
Start	10/02/2019 11:43:09								
Stop	10/03/2019 13:44:36								
Duration	1 Day 02:01:27.2								
Run Time	1 Day 02:01:27.2								
Pause	0:00:00.0								
Pre Calibration	10/02/2019 11:39:00								
Post Calibration	None								
Calibration Deviation	---								
Overall Settings									
RMS Weight	A Weighting								
Peak Weight	A Weighting								
Detector	Slow								
Preamp	PRMLxT2B								
Microphone Correction	Off								
Integration Method	Exponential								
Overload	145.7 dB								
	A		**C**		**Z**				
Under Range Peak	**101.8**		98.8		103.8 dB				
Under Range Limit	**37.9**		35.9		43.9 dB				
Noise Floor	25.3		25.8		33.1 dB				
Results									
LASeq	66.7 dB								
LASE	116.5 dB								
EAS	49.239 mPa²h								
EAS8	15.136 mPa²h								
EAS40	75.682 mPa²h								
LApeak (max)	10/02/2019 12:32:47		114.3 dB						
LASmax	10/02/2019 12:32:47		103.5 dB						
LASmin	10/02/2019 23:39:00		34.3 dB						
SEA	-99.9 dB								
LAS > 85.0 dB (Exceedence Counts / Duration)	35		419.5 s						
LAS > 115.0 dB (Exceedence Counts / Duration)	0		0.0 s						
LApeak > 135.0 dB (Exceedence Counts / Duration)	0		0.0 s						
LApeak > 137.0 dB (Exceedence Counts / Duration)	0		0.0 s						
LApeak > 140.0 dB (Exceedence Counts / Duration)	0		0.0 s						
Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**		
	72.8	67.0	66.3	72.9	67.5	63.7	66.3		
LCSeq	72.9 dB								
LASeq	66.7 dB								
LCSeq - LASeq	6.2 dB								
LAleq	69.2 dB								
LAeq	66.7 dB								
LAleq - LAeq	2.5 dB								
# Overloads	0								
Overload Duration	0.0 s								
Dose Settings									
Dose Name	OSHA-1	OSHA-2							
Exch. Rate	5	5 dB							
Threshold	90	80 dB							
Criterion Level	90	90 dB							
Criterion Duration	8	8 h							
Results									
Dose	0.48	1.51 %							
Projected Dose	0.15	0.46 %							
TWA (Projected)	42.9	51.2 dB							
TWA (t)	51.4	59.7 dB							
Lep (t)	71.9	71.9 dB							
Statistics									
LAS5.00	56.8 dB								
LAS10.00	52.9 dB								
LAS33.30	47.9 dB								
LAS50.00	45.9 dB								
LAS75.00	42.6 dB								
LAS90.00	39.6 dB								

TABLE Existing-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/18/2020
ROADWAY SEGMENT: Giant Highway - north of Giant Road
NOTES: Richmond Country Club Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6700 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.45

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	0.0	81.3	174.9

TABLE Existing-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/18/2020
ROADWAY SEGMENT: Giant Road - Richmond Parkway Ramp to Giant Highway
NOTES: Richmond Country Club Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7800 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	0.0	90.0	193.5

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Appendix I:
Transportation Supporting Information

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I.1 - Draft Transportation Impact Analysis

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Draft Report

Transportation Impact Analysis for the Richmond Country Club

Prepared for the
City of Richmond

May 6, 2020

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505 17th Street, 2nd Floor **OAKLAND**, CA 94612 510.444.2600
1276 Lincoln Avenue, Suite 204 **SAN JOSE**, CA 95125 650.314.8313
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Table of Contents

Executive Summary 1

Introduction 2

Transportation Setting 3

Capacity Analysis 8

Alternative Modes 32

Access and Circulation 33

Parking 36

Conclusions and Recommendations 37

Study Participants and References 39

Figures

1. Study Area and Existing Lane Configurations 5
2. Existing Traffic Volumes 14
3. Background Traffic Volumes 16
4. Cumulative Traffic Volumes 18
5. Site Plan 20
6. Project Traffic Volumes 24
7. Existing plus Project Traffic Volumes 25
8. Background plus Project Traffic Volumes 27
9. Cumulative plus Project Traffic Volumes 29

Tables

1. Bicycle Facility Summary 6
2. Intersection Level of Service Criteria 9
3. Existing Peak Hour Intersection Levels of Service 15
4. Background Peak Hour Intersection Levels of Service 17
5. Cumulative Peak Hour Intersection Levels of Service 19
6. Trip Generation Summary 19
7. Trip Distribution Assumptions 21
8. Citywide Vehicle Miles Traveled 22
9. Existing and Existing plus Project Peak Hour Intersection Levels of Service 23
10. Background and Background plus Project Peak Hour Intersection Levels of Service 26
11. Cumulative and Cumulative plus Project Peak Hour Intersection Levels of Service 28
12. Cumulative 2040 Conditions Delay Index on CMP Routes 31
13. Parking Analysis Summary 36

DRAFT

Appendices

A. Intersection Level of Service Calculations
B. Turn Lane Warrant Analyses
C. Signal Warrant Analyses

DRAFT

Executive Summary

The proposed project includes the construction of 102 single-family homes on the western portion of the Richmond Country Club site.

The analysis addresses potential impacts at ten study intersections. The intersection of Castro Street/I-580 West Ramps currently operates at an unacceptable level of service during the p.m. peak hour and would be expected to continue doing so with the addition of project-generated trips and under Background (Existing plus Approved) Conditions. The intersection of San Pablo Avenue/Richmond Parkway currently operates at an unacceptable level of service during both the a.m. and p.m. peak hours and would be expected to continue doing so with the addition of project-generated trips and under Background Conditions. The intersections of Castro Street/I-580 West Ramps, Canal Boulevard/I-580 East Ramps, San Pablo Avenue/ Richmond Parkway, and Blume Drive-I-80 South Ramps/Richmond Parkway would operate at unacceptable levels of service with or without the project under Cumulative conditions. The impact of the project on the study intersections would be within the range of added delay that is considered acceptable under applicable standards.

The project VMT rate is expected to be less than the citywide average, indicating that the project would be expected to have a less-than-significant impact on vehicle miles traveled. The project should implement a TDM plan to encourage smarter travel and reduce the amount of congestion generated by the project.

The operation at the at-grade railroad crossing at Giant Road/Giant Highway would be minimally impacted by the project. Signage at the intersection should be improved.

The project is not expected to increase the Delay Index above significant levels identified in the CCTA Technical Procedures or above 5 percent, therefore the project will not cause a significant impact to the CMP routes.

Access for pedestrians will be adequate upon construction of sidewalks between the project site and the nearest transit stop. Bicycle and transit facilities are adequate to serve the project site.

A left-turn lane on Markovich Lane at the new street connection is not warranted under Cumulative plus Project volumes during either the a.m. or p.m. peak hour. Sight distances at the project driveway are adequate, as is internal vehicle circulation within the site. The Richmond Fire Department should be consulted to confirm that the site plan is consistent with their minimum standards for fire truck access.

DRAFT

Introduction

This report presents an analysis of the potential transportation impacts that would be associated with the proposed development of 102 single family homes to be located at the Richmond Country Club in the City of Richmond. The traffic study was completed in accordance with the criteria established by the City of Richmond and is consistent with standard traffic engineering techniques.

Prelude

The purpose of a traffic impact study is to provide City of Richmond staff and policy makers with data they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements that would be required to mitigate these impacts to a level of insignificance as defined by the City of Richmond's General Plan, West County Action Plan, or other policies. Vehicular traffic impacts are typically evaluated by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments. Impacts relative to access for pedestrians, bicyclists, and to transit are also addressed.

Project Profile

The proposed project includes construction of 102 single-family homes at the Richmond Country Club near the terminus of Markovich Lane in the City of Richmond.

DRAFT

Transportation Setting

Operational Analysis

Study Area and Periods

The study area consists of the following intersections:

1. Marine Street/I-580 East Ramps
2. Castro Street/I-580 West Ramps
3. Canal Boulevard/I-580 East Ramps
4. Canal Boulevard/I-580 West Ramps
5. Giant Highway/ Richmond Parkway Ramp to Giant Road
6. Giant Road/Giant Highway
7. Markovich Lane/Richmond Parkway Ramp to Giant Road
8. San Pablo Avenue/Richmond Parkway
9. Blume Drive-I-80 South Ramps/Richmond Parkway
10. I-80 Northbound Ramps/Fitzgerald Drive

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

Study Intersections

Marine Street/I-580 East Ramps is a signalized tee intersection. The eastbound approach is the off-ramp for I-580. A crosswalk is provided on the west leg. This intersection is operated by Caltrans.

Castro Street/I-580 West Ramps is a signalized intersection with protected left-turn phasing on all four approaches. The Castro Street northbound right-turn onto the I-580 Westbound Ramp is channelized. Crosswalks are provided at all legs. This intersection is operated by Caltrans.

Canal Boulevard/I-580 East Ramps is a signalized intersection with protected left-turn phasing on the southbound approach of Canal Boulevard. Crosswalks are provided on the south, east and west legs. This intersection is operated by Caltrans.

Canal Boulevard/I-580 West Ramps is a signalized intersection with protected left-turn phasing for the northbound Canal Boulevard approach. Crosswalks are provided on the north, east and west sides only. This intersection is operated by Caltrans.

Giant Road/Richmond Parkway Ramp to Giant Road is a signalized tee intersection with protected left-turn phasing on the southbound approach of Giant Road. Crosswalks are provided on the north and east legs.

Giant Road/Giant Highway is an all-way stop-controlled intersection. An at-grade railroad crossing is present on the westbound Giant Road leg between the stop bar for the westbound approach and the other three approaches of the intersection. There are no crosswalks provided at the intersection.

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Markovich Lane/Richmond Parkway Ramp to Giant Road is stop-controlled on the southbound Markovich Lane approach. There is a dedicated left-turn lane on the eastbound Richmond Parkway Ramp approach and a crosswalk provided on the north leg.

San Pablo Avenue/Richmond Parkway is a signalized intersection with protected left-turn phasing on all four approaches. The right-turn from westbound Richmond Parkway to San Pablo Avenue is channelized. Crosswalks are provided on the south, east, and west legs.

Blume Drive-I-80 South Ramps/Richmond Parkway is a signalized intersection with protected left-turn phasing on all four approaches. Crosswalks are provided on the south and east legs only. The westbound right turn from Richmond Parkway to I-80 South is channelized by a "pork-chop" island. This intersection is operated by Caltrans.

I-80 North Ramps/Fitzgerald Drive is a signalized intersection. A crosswalk is provided along the channelized westbound right turn from Fitzgerald Drive to I-80 North. This intersection is operated by Caltrans.

The locations of the study intersections and the existing lane configurations and controls are shown in Figure 1.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. Pedestrian amenities are generally not provided in the vicinity of the proposed project site. Sidewalks are not provided on Markovich Lane in the immediate vicinity of the project site.

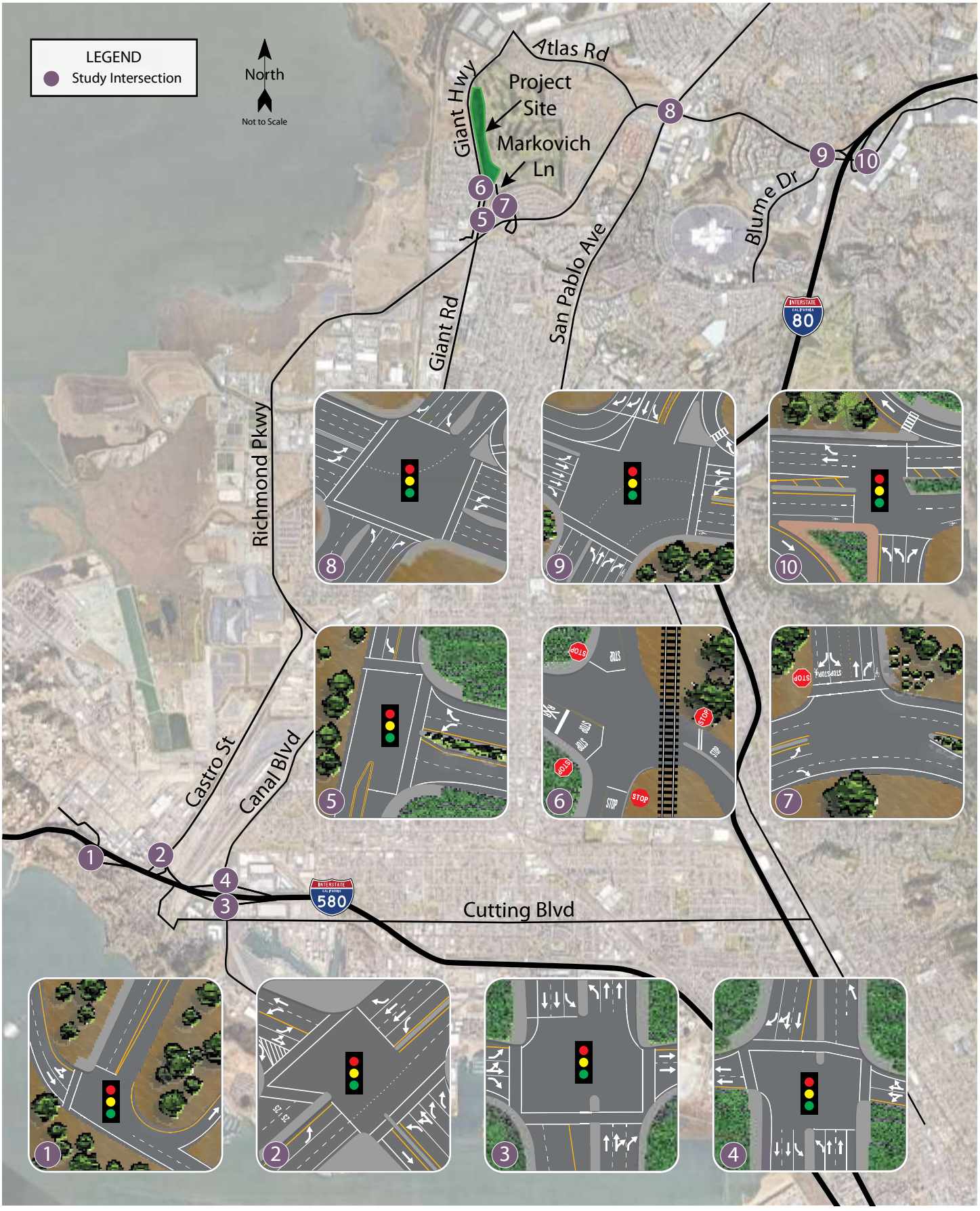
Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2017, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

Within the project site, bicyclists ride in the street. The San Francisco Bay Trail runs adjacent to the Richmond Country Club, to the west of Giant Road and Giant Highway. The Bay Trail provides over 350 miles of paved and gravel paths, bike lanes, and sidewalks, and links 47 cities across the nine Bay Area counties. Table 1 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the City of Richmond Bicycle Master Plan.

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ric022.ai 2/20

Transportation Impact Analysis for the Richmond Country Club Project

Figure 1 – Study Area and Existing Lane Configurations

Table 1 – Bicycle Facility Summary				
Status **Facility**	**Class**	**Length (miles)**	**Begin Point**	**End Point**
Existing				
Markovich Lane	II	0.3	Wood Glen Dr	Richmond Pkwy Ramp
Wood Glen Dr	II	0.4	Park Ridge Dr	Park Ridge Dr
Richmond Pkwy Ramp WB	II	0.2	Markovich Ln	Giant Rd
Planned				
Richmond Pkwy	II	1.6	Collins Ave	I-80
Giant Rd/Hwy	III	2.4	Atlas Rd	Brookside Dr

Source: *City of Richmond Bicycle Master Plan*, November 2011

Transit Facilities

Alameda-Contra Costa Transit District (AC Transit)

The Alameda-Contra Costa County Transit (AC Transit) provides fixed route bus service in Alameda and Contra Costa Counties. Two bicycles can be carried on most AC Transit buses. Bike rack space is on a first come, first served basis. Additional bicycles are allowed on AC Transit buses at the discretion of the driver.

AC Transit Route 71 provides north-south service between the El Cerrito Plaza BART Station, Richmond BART/ Amtrak Station and the Richmond Parkway Transit Center. The route serves stops along Richmond Parkway, Rumrill Boulevard, Harbour Way and Carlson Boulevard and operates between 5:00 a.m. and 8:00 p.m. with 30-minute headways on weekdays. The bus stop nearest the project site is near the intersection of Giant Road/ Stanton Avenue, approximately 0.6 miles from the project site.

AC Transit Route 376 provides north-south service between the El Cerrito/Del Norte BART Station, Richmond BART/Amtrak Station, the Hilltop Mall and the Richmond Parkway Transit Center. The route serves stops along Richmond Parkway, Rumrill Boulevard, Harbour Way and Cutting Boulevard and operates between 8:00 p.m. and 3:00 a.m. with 30-minute headways on weekdays. The bus stop nearest the project site is approximately 0.6 miles from the project site at the intersection of Giant Road/John Avenue.

Bay Area Rapid Transit (BART)

The BART system provides regional rail service between San Mateo, San Francisco, Alameda, and Contra Costa counties, with one station in Richmond. The nearest station is located at 1700 Nevin Avenue, which is approximately four miles from the project site. This station is served by the Richmond-Warm Springs/South Fremont and Richmond-Daly City/Millbrae lines. On weekdays during peak commute periods, trains have a 15-minute headway. During all other times (off-peak periods and weekends), trains operate at 20-minute headways. Typical hours of operation for BART are between the hours of 5:00 a.m. to midnight during the weekday, 6:00 a.m. to midnight on Saturdays and 8:00 a.m. to midnight on Sundays.

Amtrak

Amtrak is a passenger railroad service that provides medium- and long-distance service between cities in the United States and Canada with a station in Richmond located approximately four miles from the project site at 1700 Nevin Avenue. The Richmond Amtrak Station is served by the Capitol Corridor, California Zephyr and San Joaquin passenger train services.

San Francisco Bay Area Water Emergency Transportation Authority (WETA)

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) operates ferry service between the existing San Francisco Ferry Terminal and the terminal on the Ford Peninsula in the City of Richmond. The ferry service operates on weekdays from approximately 6:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 8:00 p.m. The ferry terminal is located approximately five miles from the project site.

Paratransit

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. The City of Richmond is served by two agencies that offer paratransit services. R-Transit and East Bay Paratransit are designed to serve the needs of individuals with disabilities within the City of Richmond and Alameda and Contra Costa Counties.

On-Demand Transportation Services

On-demand private taxi services are available in Richmond 24 hours a day. Taxis can be used for trips within the Planning Area and adjacent destinations, including nearby airports. Other ride-hailing applications are also available in Richmond and provide transportation throughout the Bay Area.

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Capacity Analysis

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The Levels of Service for the intersections with side street stop controls, or those which are unsignalized and have one or two approaches stop controlled, were analyzed using the "Two-Way Stop-Controlled" intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersections with stop signs on all approaches were analyzed using the "All-Way Stop-Controlled" Intersection methodology from the HCM. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole and is then related to a Level of Service.

The study intersections that are currently controlled by a traffic signal were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether the signals are coordinated or not, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using signal timing obtained from either the City of Richmond or Caltrans.

The ranges of delay associated with the various levels of service are indicated in Table 2.

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Table 2 – Intersection Level of Service Criteria			
LOS	**Two-Way Stop-Controlled**	**All-Way Stop-Controlled**	**Signalized**
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach and wait for vehicle to clear from one or more approaches prior to entering the intersection.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 50 seconds. Drivers enter long queues on all approaches.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual,* Transportation Research Board, 2010

Traffic Operation Standards/Significance Criteria

The City of Richmond has established criteria to determine the level of significance of traffic impacts based on standards set in the *West County Action Plan for Routes of Regional Significance* by the West Contra Costa Transportation Advisory Committee (WCCTAC) and the *Richmond General Plan 2030*. Based on these planning documents, a traffic impact is considered significant if:

a) The Project would conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. A significant impact could be identified:
   - If a signalized intersection is projected to operate within expected delay ranges (i.e., LOS D or better with an average control delay of equal to or less than 55 seconds per vehicle) without the Project and the Project is expected to cause the facility to operate at an unacceptable LOS (LOS E or F);

- If an intersection is projected to operate at or over capacity (i.e., LOS E or F) without the Project, and the Project is expected to increase the average control delay by more than 5 seconds or deteriorates from LOS E to LOS F; or
- If the operation of an unsignalized study intersection is projected to decline with the addition of Project traffic, and if the installation of a traffic signal would be warranted based on the Peak Hour Signal Warrant (Warrant 3) as published in the *California Manual on Uniform Traffic Control Devices* (CA-MUTCD), Caltrans 2014.

Caltrans Facility Operation

Intersections of ramps from I-580 or I-80 are under the jurisdiction of Caltrans. Under their adopted standards and as stated in the Guide for the Preparation of Traffic Impact Studies, Caltrans "endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D"…" Based on previous discussions with Caltrans staff, it is understood that the standard is to be applied to the overall average intersection delay and not that associated with any single movement or approach. Under this approach, if one movement experiences very high delay and has moderate to high traffic volumes, the overall delay and level of service (LOS) should reflect the critical nature of the condition. However, if one movement is expected to experience high delay, but has very low traffic volumes, the overall intersection operation will likely still meet Caltrans standards.

Regulatory Framework

The City of Richmond General Plan along with a variety of regional, State, and federal plans, legislation, and policy directives provide guidelines for the safe operation of streets and transportation facilities in Richmond. While the City of Richmond has primary responsibility for the maintenance and operation of transportation facilities within the City, City staff works on a continuous basis with responsible regional, State, and federal agencies including Contra Costa County, the California Department of Transportation (Caltrans), and the Federal Highway Administration (FHWA), as well as others, to maintain, improve, and balance the competing transportation needs of the community and the region.

This section describes transportation policies, laws, and regulations that would apply to the proposed project and provides a context for the impact discussion related to consistency with applicable regulatory conditions.

General Plan 2030

The City of Richmond's General Plan (Adopted on April 25, 2012) provides a framework for development within the City. Policies and strategies that are pertinent to the transportation analysis for the proposed project are listed below.

- **Goal CR1: An Expanded Multimodal Circulation System** – Make conditions safer and more attractive for all modes of transportation including travel by foot and bicycle, public transit and automobiles. Evaluate streets and potential enhancements based on surrounding land use, street function and desired character and by relying on the place-based approach to circulation planning articulated in the General Plan. Take potential improvement measures ranging from physical design treatment of the street environment to social and programmatic responses appropriate to the particular street context.
    - **Policy CR1.1: Balanced Modes of Travel and Equitable Access** – Encourage multiple circulation options in the City and work with transit operators to ensure equitable access for all members of the community.
    - **Policy CR1.2: An Interconnected Street System** – Promote an interconnected system of streets that adequately serves current and future travel needs.
    - **Policy CR1.3: Local and Regional Transportation Linkages** – Enhance circulation linkages within the City and region.

- **Policy CR1.4: Expanded and Affordable Public Transit** – Coordinate with regional transportation agencies and support enhanced and expanded public transit to improve mobility options for residents and visitors.
- **Policy CR1.5: Safe and Convenient Walking and Bicycling** – Promote walking and bicycling as a safe and convenient mode of transportation.
- **Policy CR1.6: Comprehensive Network of Multi-Use Trails** – Develop a comprehensive network of multi-use trails including to enhance bicycle and pedestrian connectivity throughout the City and the region.
- **Policy CR1.8: Place-Based Circulation Approach** – Promote the place-based planning approach and classification system.
- **Policy CR1.9: Place-Based Circulation Classification System and Multi-Modal Level of Service Standards** – Classify all streets in the City to conform to the Place-Based Circulation Classification System discussed in the Circulation Element of the General Plan and adopt multi-modal level of service (MMLOS) standards that are consistent with each street type's intended function and character.
- **Policy CR1.10: Vehicular Level of Service Standards for West County Routes of Regional Significance** – Maintain vehicular level of service (LOS) standards for signalized intersections consistent with the Contra Costa Transportation Authority's (CCTA) West County Action Plan for Routes of Regional Significance.

- **Goal CR2: Walkable Neighborhoods and Complete Streets** -- Activate the public right-of-way and improve the experience of moving people between key destinations at the pedestrian level. In order to make walking and bicycling a more attractive options, enhance connectivity between neighborhoods, schools, the workplace, and daily goods and services so that reaching key destinations is safer and more convenient. Contribute to walkability and livability by promoting mixed-use and complete streets, high-quality pedestrian environments, context-based street design, and efficient public transit.
  - **Policy CR2.2: Complete Streets** – Promote mixed-use urban streets that balance public transit, walking and bicycling with other modes of travel.
  - **Policy CR2.3: Integrated Bicycle and Pedestrian System** – Plan, construct and maintain a safe, comprehensive and integrated bicycle and pedestrian system.
- **Goal CR3: A Safe and Well-maintained Circulation System** – In order to create a safe and efficient circulation system, emphasize on-going street maintenance and safety improvements that consider all modes of transportation including walking, bicycling, and public transit. Require new facilities and infrastructure as development occurs in order to meet the needs of all users while enhancing mobility and connectivity.
  - **Policy CR3.1: Safety and Accessibility** – Enhance safety and accessibility for pedestrians, bicyclists and transit riders.
  - **Policy CR3.3: Concurrent Infrastructure Development** – Require concurrent infrastructure development for new and redevelopment projects that may have a significant impact on the existing circulation system including streets, trails, sidewalks, bicycle paths and public transit.
- **Goal CR5: Sustainable and Green Practices** – In order to create sustainable and clean circulation options, encourage the use of low-impact alternative fuels and new technologies and implement transportation demand management programs. Encourage measures to treat and retain storm water in the design of pedestrian and parking amenities.
  - **Policy CR5.1: Transportation Demand Management** – Promote transportation demand management (TDM) strategies among residents and businesses to reduce reliance on automobiles.
  - **Policy CR5.2: Renewable Energy and Clean Technology** – Promote the use of renewable energy, including non-fossil fuels, and clean technology for transportation including public transit and goods movement.
  - **Policy CR5.3: Green Streets** – Promote the development of street design elements that incorporate natural storm water drainage and landscaping in new and retrofitted streets.

Bicycle Master Plan

Like the *Richmond General Plan 2030*, the *City of Richmond Bicycle Master Plan* (November 1, 2011) outlines action items necessary to complete the planned bikeway system and supporting facilities within the City. The *Bicycle Master Plan* contains the following goals and objectives:

- **Goal 1:** Expand the city's bicycle routes and parking facilities into an extensive, well-connected and well-designed network, and improve and maintain these facilities over time.
  - **Objective:** Increase the number of bikeway miles by 75 percent, complete all gaps in the Bay Trail and double the number of bicycle parking spaces.
- **Goal 2:** Increase the number of people of all ages and backgrounds who bicycle for transportation, recreation and health.
  - **Objective:** Double the number of trips made by bicycle.
- **Goal 3:** Make the streets safer for bicyclists, not only during the day but also at night.
  - **Objective:** Reduce the number of bicycle fatalities and injuries by 25 percent (even as the number of bicyclists increases).
- **Goal 4:** Incorporate the needs and concerns of cyclists in all transportation and development projects.
  - **Objective:** Adopt, institutionalize and have relevant City departments implement a "Complete Streets" policy and bicycle-friendly design standards and guidelines for streets and developments.

Pedestrian Plan

The *City of Richmond Pedestrian Plan* (November 1, 2011) provides guidance to improve the safety, convenience and appeal of walking throughout the City of Richmond. The *Pedestrian Plan* contains the following goals:

- **Increased Safety.** Streets will be developed and retrofitted to accommodate all types of users. Designs and devices will produce speed moderation, visibility, awareness and communication for motorists and non-motorists alike.
- **Improved Security.** Streets, trails and other public spaces will be designed and improved to create active places that are watched over, maintained and that project a sense of control and community ownership.
- **Improved Connectivity**. A range of strategies and solutions will address physical barriers to walking, such as dead-end streets, railroad right of ways, wide roadways, and wide, complex intersections.
- I**ncreased Equity**. Walking, the cheapest form of transportation, will be a safe, viable and convenient choice for those who cannot afford, are unable, or choose not to drive a car.
- **Improved Health**. Walking and bicycling, the healthiest forms of transportation, will become desirable alternatives for trips to daily destinations.
- **Increased Sustainability.** Walking and bicycling in the city will reduce the number of vehicle miles Richmond residents and visitors travel, and will reduce associated climate change, air and water quality impacts from vehicle emissions. Opportunities will be identified to convert excess paved rights of way to lower impact spaces with trees and landscaping.
- **Neighborhood and Downtown Revitalization**. Improvements to the streets and pedestrian realm will beautify the public realm and set the stage for new investment in private property that can help fund improvements and attract development that supports walking, bicycling and the use of transit.

Contra Costa Transportation Authority (CCTA) and West Contra Costa Transportation Advisory Committee (WCCTAC)

The CCTA is the County agency established to implement Measure C passed by voters in 1998 and its extension, Measure J, passed in 2004. These measures increased sales tax by one-half percent to fund a list of specific transportation improvement projects in Contra Costa County. Measure C also required the development of a Growth Management Program (GMP) to help control the spread of congestion.

CCTA serves as the Congestion Management Agency (CMA) for Contra Costa County. CCTA adopted the county's first Congestion Management Program (CMP) in October 1991. The most recent CMP was adopted by CCTA in 2013. The CMP requires an analysis of any project that is expected to generate more than 100 peak hour vehicle trips. The project would generate 101 trips during the p.m. peak hour, therefore an analysis of CMP facilities in the study area was conducted.

The CCTA includes several Regional Transportation Planning Committees that cover specific sub-areas of the County. Richmond is within the purview of the West Contra Costa County Transportation Advisory Committee (WCCTAC). The WCCTAC regularly updates the *West County Action Plan for Routes of Regional Significance*. The Action Plan assesses transportation issues within West Contra Costa County and outlines a recommended package of goals, objectives and actions for addressing those issues. The final draft of the *West County Action Plan for Routes of Regional Significance* was adopted in September 2017.

The Action Plan designates Routes of Regional Significance and sets Multi-modal Traffic Service Objectives (MTSOs) for each route. The Routes of Regional Significance near the project site are Richmond Parkway, I-580, and I-80. The MTSO for Richmond Parkway is to maintain a signalized intersection delay of LOS D or better. The MTSO for I-580 is to maintain a Delay Index of 2.5 or less, Delay Index defined as the ratio between travel time on a segment of road during congested conditions, and the travel time on the same segment during uncongested, free-flow conditions. The MTSO for I-80 is to maintain a Delay Index of 3.0 or less and increase HOV lane usage by 10 percent over 2013 levels.

Transportation Demand Management

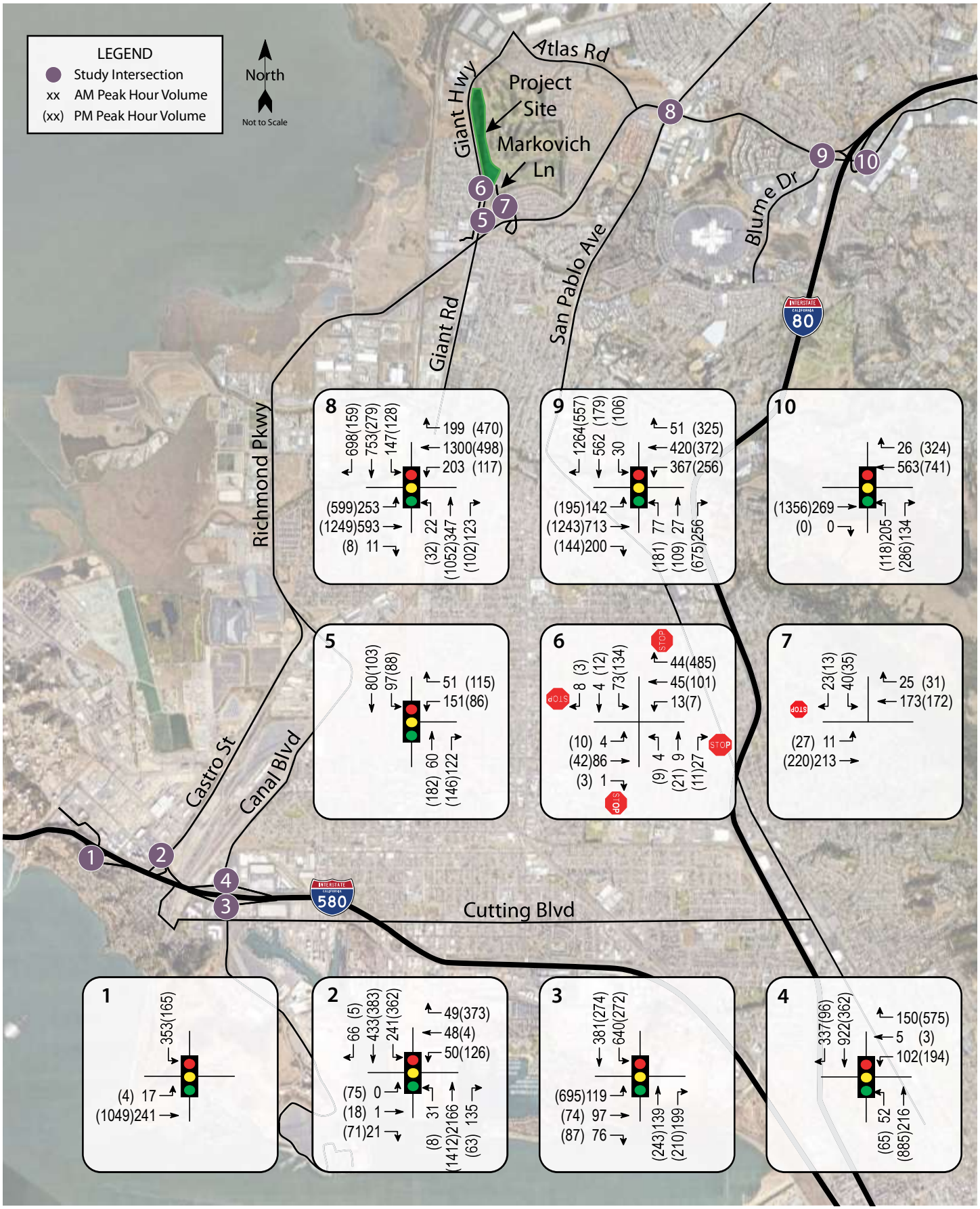
The Richmond Municipal Code (adopted September 10, 2019) contains Article 15.04.612 on Transportation Demand Management. The specific purposes of the Article are to promote maximum efficiency in the existing transportation system, and to further the transportation goals of the Measure C and Measure J Growth Management Programs, Contra Costa's Countywide Transportation Plan and Congestion Management Program, and the San Francisco Bay Area Clean Air Plan, including reducing total vehicle miles traveled (VMT), while enhancing access and expanding mobility. The requirements of the Article apply to new multi-unit developments of ten units or more. The performance requirements are as follows:

- All projects subject to the requirements of this Article shall incorporate measures to reduce to the extent feasible single-occupant vehicle trip generation rates 15 percent below the standard rates as established in the most recent edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual by promoting walking, cycling, public transit, and ridesharing/vanpooling, and/or discouraging single-occupant vehicle travel, ensure that the average VMT by residents or workers in the development, or students or workers in schools, is less than the average citywide VMT. This performance target is consistent with the General Plan and the version of Plan Bay Area effective in 2016.
- **GreenTRIP Certification**. Residential developments that obtain GreenTRIP Certification from TransForm, or other equivalent certification, prior to issuance of a certificate of occupancy, shall be deemed to have met this performance requirement.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes.

Under existing conditions, all study intersections operate at acceptable levels of service during the a.m. and p.m. peak hours, except that San Pablo Avenue/Richmond Parkway operates at LOS E during the a.m. peak hour and Castro Street/I-580 West Ramps and San Pablo Avenue/Richmond Parkway operate at LOS F and E, respectively, during the p.m. peak hour. Castro Street/I-580 West Ramps is under the jurisdiction of Caltrans, so the p.m. operation of LOS F does not meet the adopted standards. The existing traffic volumes are shown in Figure 2.



ric022.ai 2/20

Transportation Impact Analysis for the Richmond Country Club Project

Figure 2 – Existing Traffic Volumes

A summary of the intersection level of service calculations is contained in Table 3, and copies of the Level of Service calculations are provided in Appendix A.

Table 3 – Existing Peak Hour Intersection Levels of Service

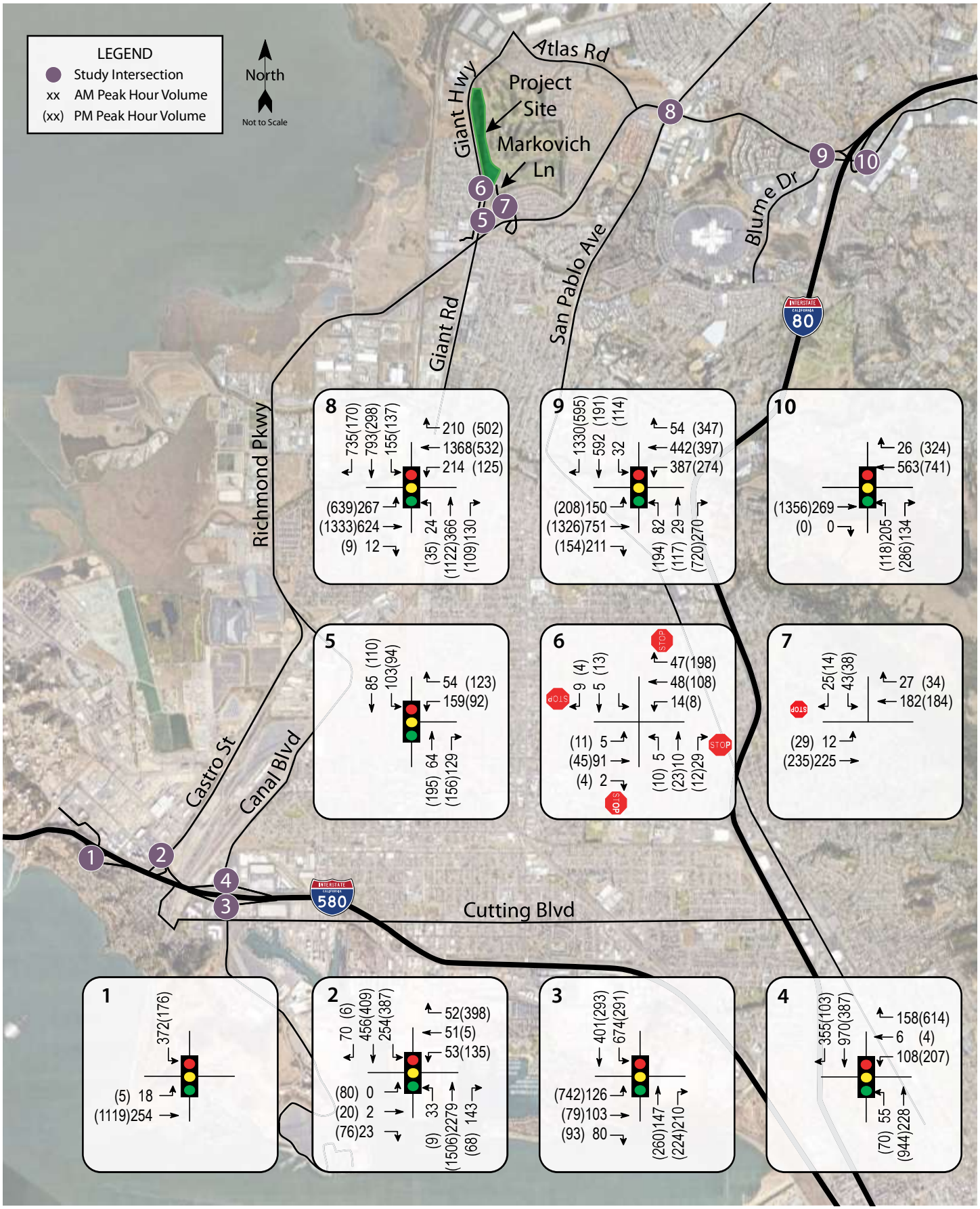
Study Intersection *Approach*	AM Peak		PM Peak	
	Delay	**LOS**	**Delay**	**LOS**
1. Marine St/I-580 East Ramps	1.3	A	1.5	A
2. Castro St/I-580 West Ramps	41.7	D	**95.7**	**F**
3. Canal Blvd/I-580 East Ramps	36.2	D	11.6	B
4. Canal Blvd/I-580 West Ramps	8.2	A	14.4	B
5. Giant Rd/Richmond Pkwy Ramp to Giant Rd	6.5	A	6.5	A
6. Giant Rd/Giant Hwy	8.6	A	10.8	B
7. Markovich Ln/Richmond Pkwy Ramp to Giant Rd	1.5	A	1.4	A
Southbound (Markovich Ln) Approach	*10.4*	*B*	*10.8*	*B*
8. San Pablo Ave/Richmond Pkwy	**73.9**	**E**	**58.7**	**E**
9. Blume Dr-I-80 South Ramps/Richmond Pkwy	41.8	D	36.6	D
10. I-80 North Ramps/Fitzgerald Dr	8.3	A	9.9	A

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold** text = deficient operation

Background Conditions

Recent a.m. and p.m. peak hour forecasts from the Contra Costa County Travel Demand model were reviewed for roadway segments in the study area. The 2018 and 2040 growth forecasts (roadway segment link volumes) were used to derive an annual growth rate. It was assumed that the roadway network would be the same under background conditions and cumulative conditions as under existing conditions; in other words, no improvements at any of the study intersections were assumed. Background operating conditions include existing vehicle turning movements plus the five-year estimated growth between the existing and cumulative model runs using the Contra Costa County Travel Demand model outputs. Under these conditions, all study intersections would be expected to continue operating at acceptable levels of service except San Pablo Avenue/Richmond Parkway, which would operate unacceptably at LOS F during the a.m. peak hour and Castro Street/I-580 West Ramps and San Pablo Avenue/Richmond Parkway which would continue to operate at LOS F and E, respectively, during the p.m. peak hour. These results are summarized in Table 4 and Background volumes are shown in Figure 3.

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ric022.ai 2/20

Transportation Impact Analysis for the Richmond Country Club Project

Figure 3 – Background Traffic Volumes

Table 4 – Background Peak Hour Intersection Levels of Service					
Study Intersection *Approach*		**AM Peak**		**PM Peak**	
		Delay	**LOS**	**Delay**	**LOS**
1.	Marine St/I-580 East Ramps	1.3	A	1.5	A
2.	Castro St/I-580 West Ramps	41.5	D	**115.1**	**F**
3.	Canal Blvd/I-580 East Ramps	48.1	D	12.7	B
4.	Canal Blvd/I-580 West Ramps	8.6	A	17.0	B
5.	Giant Rd/Richmond Pkwy Ramp to Giant Rd	6.6	A	6.7	A
6.	Giant Rd/Giant Hwy	8.7	A	11.3	B
7.	Markovich Ln/Richmond Pkwy Ramp to Giant Rd	1.6	A	1.5	A
	Southbound (Markovich Ln) Approach	*10.6*	*B*	*11.0*	*B*
8.	San Pablo Ave/Richmond Pkwy	**82.4**	**F**	**68.7**	**E**
9.	Blume Dr-I-80 South Ramps/Richmond Pkwy	45.4	D	41.8	D
10.	I-80 North Ramps/Fitzgerald Dr	8.3	A	11.0	B

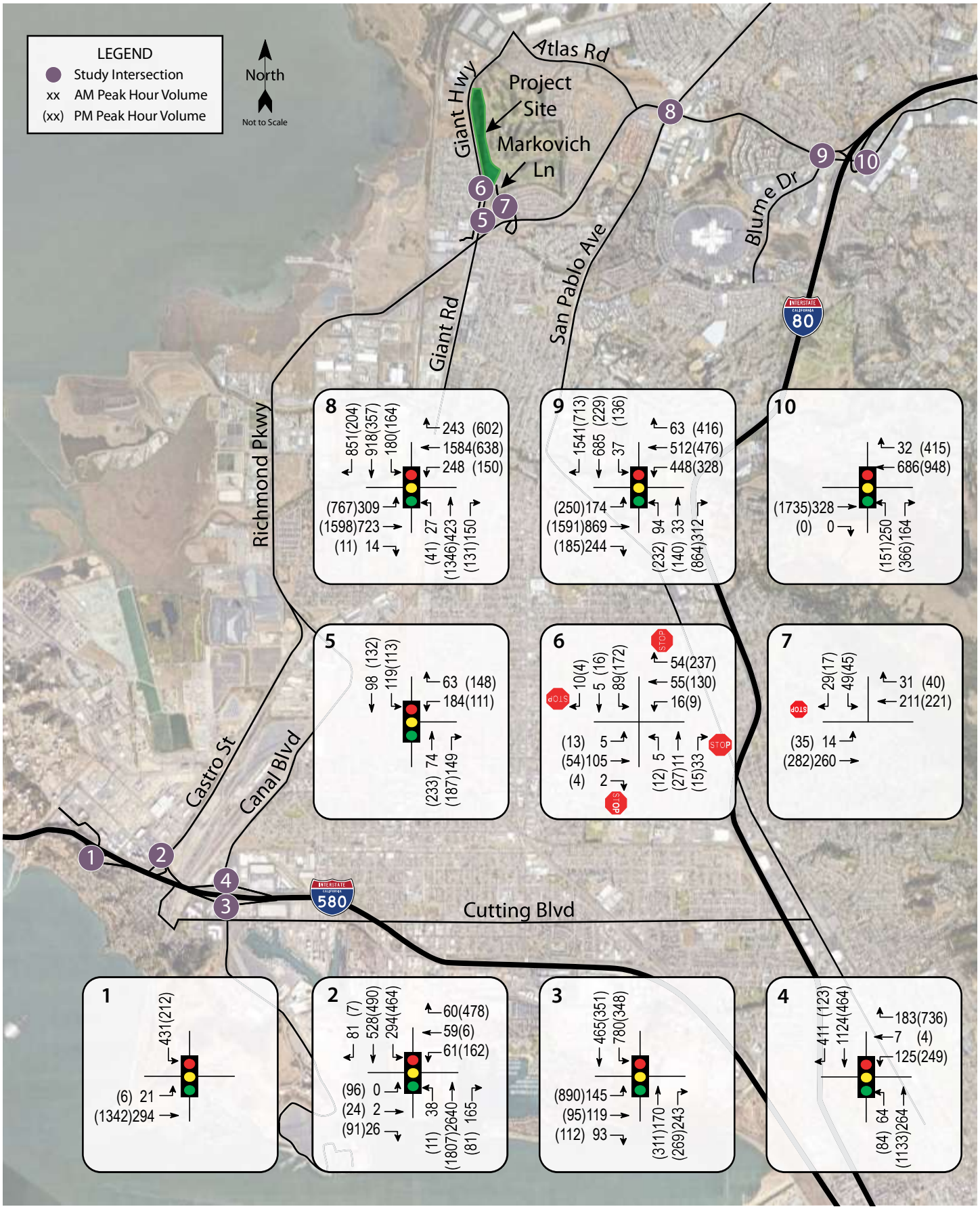
Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold** text = deficient operation

Cumulative Conditions

The annual growth rates derived from the Contra Costa County Travel Demand model are 1.04 percent for the a.m. peak hour and 1.33 percent for the p.m. peak hour. Since these growth rates were based on the County Travel Demand model, they account for any potential future development contained in the regional plan, which includes projects not yet identified or approved as well as overall regional traffic growth. These growth rates were applied to existing volumes for both the a.m. and p.m. peak hours to forecast the cumulative condition future traffic demand.

Under the anticipated Cumulative volumes, the study intersections would be expected to continue operating at acceptable Levels of Service except for Castro Street/I-580 East Ramps and San Pablo Avenue/Richmond Parkway, which would be expected to operate at LOS E and F, respectively, during the a.m. peak hour, and Castro Street/I-580 West Ramps, San Pablo Avenue/Richmond Parkway, and Blume Drive-I-80 South Ramps/Richmond Parkway, which would be expected to operate at LOS E or F during the p.m. peak hour. Cumulative volumes are shown in Figure 4 and operating conditions are summarized in Table 5.

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ric022.ai 2/20

Transportation Impact Analysis for the Richmond Country Club Project

Figure 4 – Cumulative Traffic Volumes

Table 5 – Cumulative Peak Hour Intersection Levels of Service				
Study Intersection ***Approach***	**AM Peak**		**PM Peak**	
	Delay	**LOS**	**Delay**	**LOS**
1. Marine St/I-580 East Ramps	1.3	A	1.5	A
2. Castro St/I-580 West Ramps	41.4	D	**133.2**	**F**
3. Canal Blvd/I-580 East Ramps	61.1	E	16.8	B
4. Canal Blvd/I-580 West Ramps	9.1	A	25.9	C
5. Giant Rd/Richmond Pkwy Ramp to Giant Rd	6.7	A	6.9	A
6. Giant Rd/Giant Hwy	8.8	A	12.3	B
7. Markovich Ln/Richmond Pkwy Ramp to Giant Rd	1.6	A	1.6	A
Southbound (Markovich Ln) Approach	*10.7*	*B*	*11.6*	*B*
8. San Pablo Ave/Richmond Pkwy	**98.2**	**F**	**93.4**	**F**
9. Blume Dr-I-80 South Ramps/Richmond Pkwy	52.1	D	60.8	E
10. I-80 North Ramps/Fitzgerald Dr	8.5	A	14.4	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold** text = deficient operation.

Project Description

The proposed project would include construction of 102 single family homes on the Richmond County Club near the terminus of Markovich Lane in the City of Richmond. The project site is 27.05 acres in size and is located on the western portion of the Richmond Country Club site. The site consists of undeveloped land and a portion of the golf course. The proposed project site plan is shown in Figure 5.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the ITE in *Trip Generation Manual*, 10th Edition, 2017 for Single Family Detached Housing (Land Use #210), as this description most closely matches the proposed project. The site is currently undeveloped and therefore not generating any trips. The proposed project is not anticipated to be subject to any internal capture trip or pass-by trip credits. Based on application of these assumptions, the proposed project is expected to generate an average of 963 trips per day, including 75 a.m. peak hour trips and 101 trips during the p.m. peak hour. These results are summarized in Table 6.

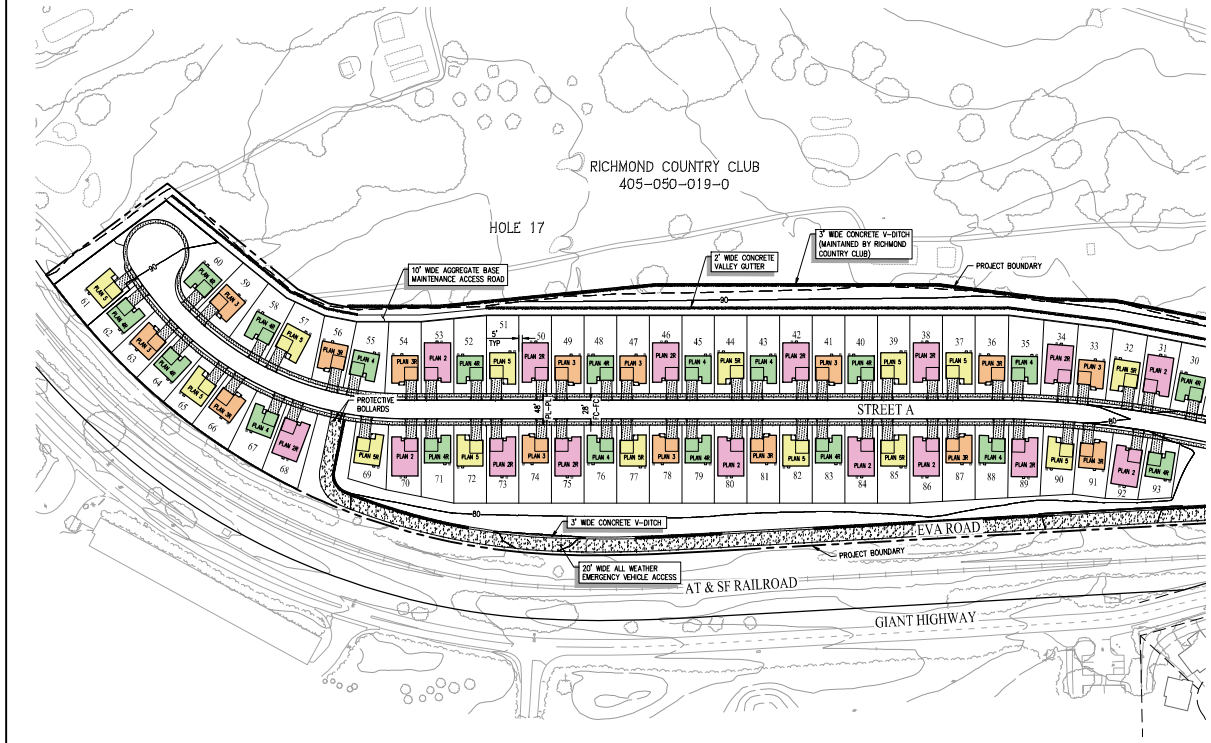
Table 6 – Trip Generation Summary											
Land Use	**Units**	**Daily**		**AM Peak Hour**				**PM Peak Hour**			
		Rate	**Trips**	**Rate**	**Trips**	**In**	**Out**	**Rate**	**Trips**	**In**	**Out**
Single Family Detached Housing	102 du	9.44	963	0.74	75	19	56	0.99	101	64	37

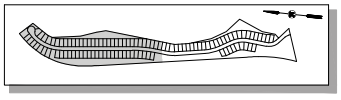
Note: du = dwelling unit

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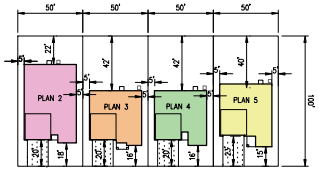
Transportation Impact Analysis for the Richmond Country Club Project

Figure 5 – Site Plan





KEY MAP
NOT TO SCALE



TYPICAL LOT SETBACKS

MINIMUM SETBACKS	
FRONT	15'
GARAGE	20'
SIDE	5'
REAR	20'

UNIT MIX SUMMARY		
PLAN	UNIT COUNT	% MIX
PLAN 2	26	25%
PLAN 3	25	25%
PLAN 4	26	25%
PLAN 5	25	25%
TOTAL	102	100%

LOT COVERAGE		
PLAN NUMBER	BUILDING FOOTPRINT*	** TYP LOT COVERAGE
PLAN 2	2,329 SF	46.6%
PLAN 3	1,581 SF	31.6%
PLAN 4	1,547 SF	30.9%
PLAN 5	1,699 SF	34.0%

* DOES NOT INCLUDE PORCH AREA
** PERCENT COVERAGE IS BASED ON TYPICAL LOT SIZE OF 50' X 100'

PRELIMINARY DEVELOPMENT PLAN

RICHMOND COUNTRY CLUB

SUBDIVISION 9528

CITY OF RICHMOND CONTRA COSTA COUNTY CALIFORNIA

0' 80' 240' 320'

SCALE: 1" = 80'

DATE: DECEMBER 2019

cbg CIVIL ENGINEERS • SURVEYORS • PLANNERS

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SHEET NO. P1.1 OF 13 SHEETS

P:\2024\RMCI-DTM\P1.1 & P1.2.DWG

Source: MLC Holdings, Inc. 12/19

ric022.ai 2/20

Trip Distribution

The Contra Costa County Travel Demand Model was used to estimate relative trip distribution patterns within the study area by comparing relative vehicle demands at major roadways and then applying manual adjustments for rounding. Since major modifications to the roadway network in Richmond are not anticipated, the same trip distribution was used for all study periods and conditions. The applied distribution assumptions and resulting trips are shown in Table 7.

Table 7 – Trip Distribution Assumptions

Route	Percent	Daily Trips	AM Trips	PM Trips
To/From I-80 (North)	30%	289	23	31
To/From I-80 (South)	25%	241	19	25
To/From I-580 (West)	14%	135	10	14
To/From Canal Blvd (South)	1%	10	1	1
To/From I-580 (East)	14%	135	10	14
To/From San Pablo Ave (North)	5%	48	4	5
To/From Fitzgerald Dr (North)	4%	38	3	4
To/From Giant Road (North)	3%	29	2	3
To/From Giant Road (South)	4%	38	3	4
TOTAL	**100%**	**963**	**75**	**101**

Vehicle Miles Traveled

Average Citywide VMT

To estimate the average citywide VMT, commuting to work data available from the US Census (2017) for the City of Richmond was used. This data summarizes the "home to work" distance traveled within the study area and does not include nuisances like short distance mid-day trips, school-related trips or chained trips between the workplace and home. According to this data, the majority (38.4 percent) of workers in the study area travel less than 10 miles between their home and work. This data is summarized in Table 8. The average VMT for a project generating 963 net-new daily trips in the City of Richmond would be 21,720 vehicle-miles daily. This is equivalent to an average distance of 22.6 miles per trip per day.

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Table 8 – Citywide Vehicle Miles Traveled			
Estimated Home to Work Trip Distance	**Percent**	**Daily Trips**	**VMT (rounded up to nearest 10)**
Less than 10 miles	38.4%	370	1,850
10 to 24 miles	30.9%	298	5,070
25 to 50 miles	15.2%	146	5,480
Greater than 50 miles	15.5%	149	9,320
TOTAL	**100%**	**963**	**21,720**

Notes:
1) VMT = Vehicle Miles Traveled
2) Source for home to work percent estimates are: https://onthemap.ces.census.gov/
3) A representative mid-point distance was used within each distance range to calculate VMT from daily number of trips; a distance of 62.5 miles was used for the "greater than 50 miles" category.

Project Generated VMT

To estimate the project generated VMT, the proposed project was evaluated using the California Emissions Estimator Model (CalEEMod, version 2016.3.1). CalEEMod is a statewide land use emissions model used to quantify potential emissions impacts associated with a variety of land use projects. The model quantifies direct emissions, including vehicle use, and indirect emissions, including energy and water use. The model was developed for California Air Pollution Control Officers Association (CAPCOA) and incorporates the mitigation measures outlined in Quantifying Greenhouse Gas Mitigation Measures, CAPCOA 2010.

CalEEMod estimates vehicle travel as a function of land use and geographic location using ITE standard trip generation rates and trip length data collected from various jurisdictions around the State of California. Using this data, CalEEMod is able to determine the number of VMT for a given development. The model output includes both unmitigated and mitigated annual VMT calculated using the same average trip length. The unmitigated VMT is expected to be 6,097 vehicle-miles daily, or approximately 6.3 miles traveled per vehicle per day.

Per the Richmond Municipal Code, the average VMT by residents in the proposed development should be less than the average citywide VMT. The expected VMT for the proposed project is 15,623 fewer daily vehicle-miles than the average VMT for a project generating the same number of trips in the City of Richmond.

Finding – The proposed project is expected to be compliant with Richmond Municipal Code, because the estimated project generated VMT is less than the average VMT expected for a project generating the same number of trips in the City of Richmond. Therefore, the project will not cause a significant impact to the regional VMT.

Vehicle Trip Reduction

The City of Richmond has adopted serval measures in the Municipal Code to reduce vehicle trips through TDM strategies. A well-lighted path or sidewalk utilizing the most direct route to the nearest transit stop from the project site is a measure to promote use of non-auto and shared mobility options. The project should incorporate measures to reduce single-occupant vehicle trips by implementing a TDM plan. Additionally, the project developer should seek GreenTRIP Certification from TransForm or other equivalent certification.

Recommendation – The project should implement a TDM plan in effort to reduce VMT. The project developer should pursue measures to have the residential development deemed GreenTRIP certified prior to the issuance of a certificate of occupancy

Intersection Operation

Existing plus Project Conditions

Upon adding project-related traffic to Existing volumes the study intersections are expected to continue operating at the same Levels of Service as without the project-generated trips. These results are summarized in Table 9. Project traffic volumes are shown in Figure 6 and Existing plus Project volumes are shown in Figure 7.

Table 9 – Existing and Existing plus Project Peak Hour Intersection Levels of Service

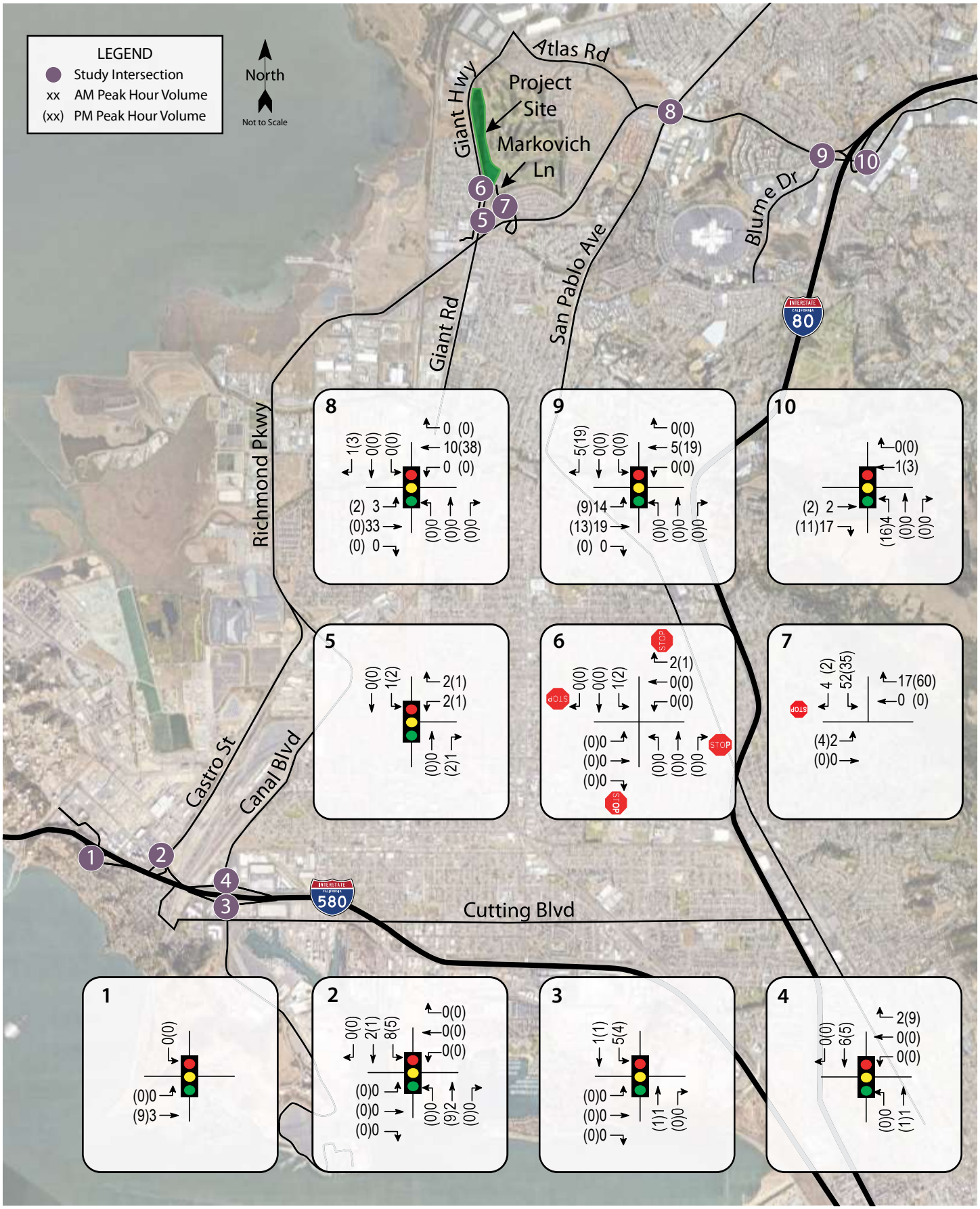
Study Intersection *Approach*	Existing Conditions				Existing plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Marine St/I-580 East Ramps	1.3	A	1.5	A	1.3	A	1.5	A
2. Castro St/I-580 West Ramps	41.7	D	**95.7**	**F**	41.6	D	**97.9**	**F**
3. Canal Blvd/I-580 East Ramps	36.2	D	11.6	B	37.8	D	11.7	B
4. Canal Blvd/I-580 West Ramps	8.2	A	14.4	B	8.2	A	14.7	B
5. Giant Rd/Richmond Pkwy Ramp to Giant Rd	6.5	A	6.5	A	6.5	A	6.6	A
6. Giant Rd/Giant Hwy	8.6	A	10.8	B	8.6	A	10.8	B
7. Markovich Ln/Richmond Pkwy Ramp to Giant Rd	1.5	A	1.4	A	2.6	A	2.1	A
Southbound (Markovich Ln) Approach	*10.4*	*B*	*10.8*	*B*	*11.4*	*B*	*11.8*	*B*
8. San Pablo Ave/Richmond Pkwy	**73.9**	**E**	**58.7**	**E**	**74.2**	**E**	**59.4**	**E**
9. Blume Dr-I-80 South Ramps/ Richmond Pkwy	41.8	D	36.6	D	41.8	D	37.0	D
10. I-80 North Ramps/Fitzgerald Dr	8.3	A	9.9	A	8.3	A	10.0	B

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold** text = deficient operation.

It should be noted that with the addition of project-related traffic volumes, average delay at Castro Street/I-580 West Ramps would be expected to decrease during the a.m. peak hour. While this is counter-intuitive, this condition occurs when a project adds trips to movements that are currently underutilized or have delays that are below the intersection average, resulting in a better balance between approaches and lower overall average delay. The conclusion could incorrectly be drawn that the project actually improves operation based on this data alone; however, it is more appropriate to conclude that the project trips are expected to make use of excess capacity, so drivers will experience little, if any, change in conditions as a result of the project.

Although the intersection of San Pablo Avenue/Richmond Parkway would operate at LOS E during both the a.m. and p.m. peak hours and Castro Street/I-580 West Ramps would operate at LOS F during the p.m. peak hour, the impacts at these intersections are considered acceptable under the applicable criteria wherein the average control delay for intersections operating at LOS E or worse without the project must increase by more than 5 seconds or deteriorate from LOS E to LOS F. The change in delay at these intersections is less than five seconds.

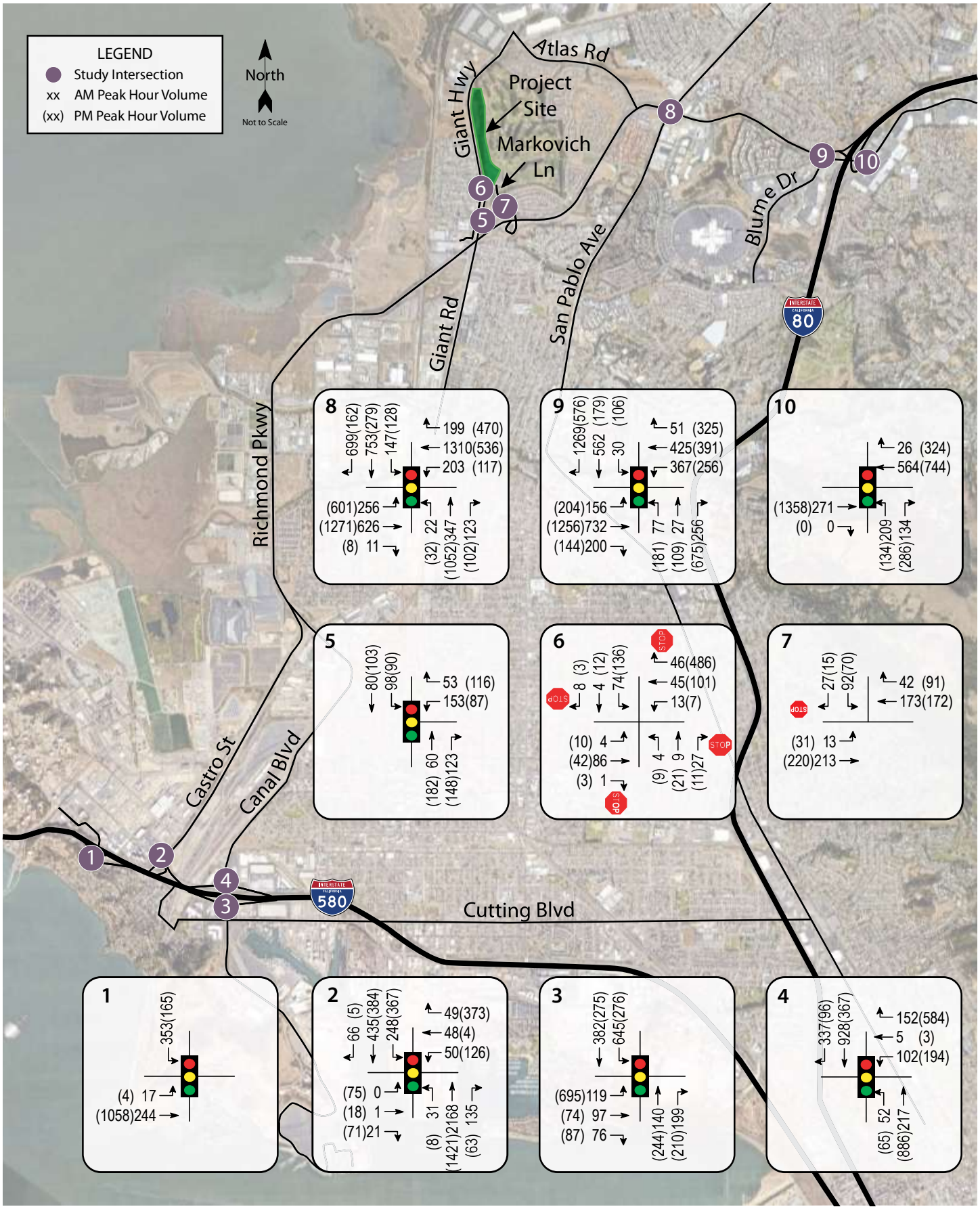
Finding – The study intersections are expected to continue operating at acceptable levels of service upon the addition of project-generated traffic, except Castro Street/I-580 West Ramps and San Pablo Avenue/Richmond Parkway, which operate at LOS E or F with or without the addition of project-generated traffic. Although these



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Figure 6 – Project Traffic Volumes



ric022.ai 2/20

Transportation Impact Analysis for the Richmond Country Club Project

Figure 7 – Existing plus Project Traffic Volumes

intersections would operate below level of service standards, because the project would be expected to increase the delay by less than five seconds, the impact is considered acceptable.

Background plus Project Conditions

With project-generated traffic added to Background volumes the study intersections would be expected to continue operating at the same Levels of Service as without the project. Again, San Pablo Avenue/Richmond Parkway is expected to operate at LOS F without or with the project during the a.m. peak hour. Castro Street/I-580 West Ramps and San Pablo Avenue/Richmond Parkway are expected to operate at LOS F and E, respectively, during the p.m. peak hour, with or without the project. The resulting increase in delay at these intersections due to project-related traffic is less than five seconds during both peak hours thus the impact is considered acceptable. These results are summarized in Table 10, and Background plus Project volumes are shown in Figure 8.

Table 10 – Background and Background plus Project Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Background Conditions				Background plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Marine St/I-580 East Ramps	1.3	A	1.5	A	1.3	A	1.5	A
2. Castro St/I-580 West Ramps	41.5	D	**115.1**	**F**	41.4	D	**117.5**	**F**
3. Canal Blvd/I-580 East Ramps	48.1	D	12.7	B	49.6	D	12.8	B
4. Canal Blvd/I-580 West Ramps	8.6	A	17.0	B	8.6	A	17.5	B
5. Giant Rd/Richmond Pkwy Ramp to Giant Rd	6.6	A	6.7	A	6.6	A	6.7	A
6. Giant Rd/Giant Hwy	8.7	A	11.3	B	8.7	A	11.4	B
7. Markovich Ln/Richmond Pkwy Ramp to Giant Rd	1.6	A	1.5	A	2.6	A	2.1	A
Southbound (Markovich Ln) Approach	*10.6*	*B*	*11.0*	*B*	*11.6*	*B*	*12.2*	*B*
8. San Pablo Ave/Richmond Pkwy	**82.4**	**F**	**68.7**	**E**	**82.6**	**F**	**69.5**	**E**
9. Blume Dr-I-80 South Ramps/ Richmond Pkwy	45.4	D	41.8	D	45.6	D	42.3	D
10. I-80 North Ramps/Fitzgerald Dr	8.3	A	11.0	B	8.4	A	11.0	B

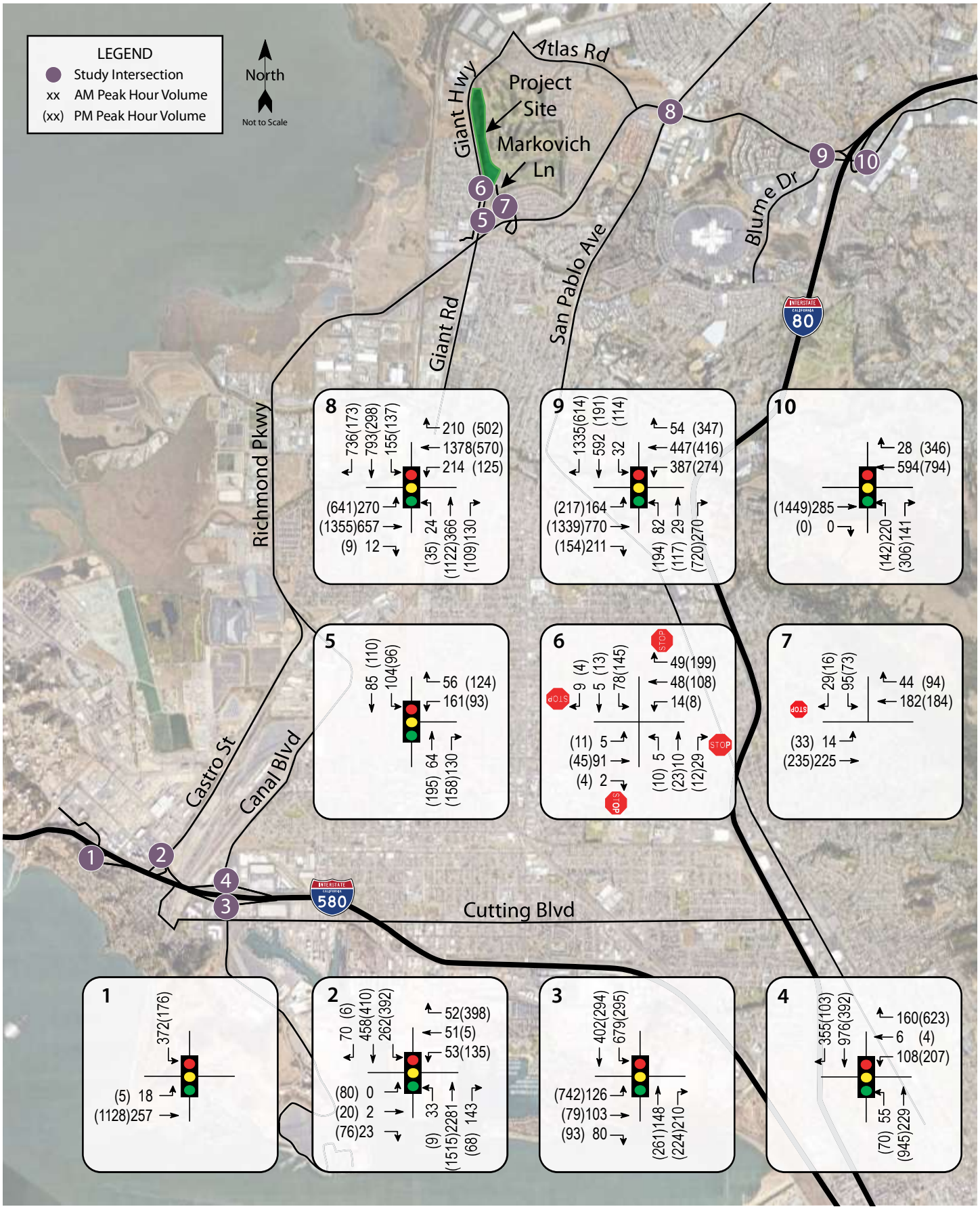
Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold** text = deficient operation.

Finding – The study intersections are expected to continue operating at acceptable levels of service upon the addition of project-generated traffic except at Castro Street/I-580 West Ramps and San Pablo Avenue/Richmond Parkway. Although these intersections would operate below the level of service standards, because the increase in delay is less than five seconds, under the applicable criterion it is considered an acceptable impact.

Cumulative plus Project Conditions

Upon the addition of project-generated traffic to the anticipated Cumulative volumes, all the study intersections would be expected to operate at acceptable levels of service, with the exceptions of Castro Street/I-580 East Ramps and San Pablo Avenue/Richmond Parkway, which are expected to operate at LOS F and F, respectively, during the a.m. peak hour, and Castro Street/I-580 West Ramps, San Pablo Avenue/Richmond Parkway, and Blume Drive-I-80 South Ramps/Richmond Parkway, which are expected to operate at LOS E or F during the p.m. peak

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ric022.ai 2/20

Transportation Impact Analysis for the Richmond Country Club Project

Figure 8 – Background plus Project Traffic Volumes

hour. The Cumulative plus Project operating conditions are summarized in Table 11, and Cumulative plus Project volumes are shown in Figure 9.

Table 11 – Cumulative and Cumulative plus Project Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Cumulative Conditions				Cumulative plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Marine St/I-580 East Ramps	1.3	A	1.5	A	1.3	A	1.5	A
2. Castro St/I-580 West Ramps	41.4	D	**133.2**	**F**	41.4	D	**135.4**	**F**
3. Canal Blvd/I-580 East Ramps	61.1	E	16.8	B	62.8	E	17.0	B
4. Canal Blvd/I-580 West Ramps	9.1	A	25.9	C	9.1	A	26.9	C
5. Giant Rd/Richmond Pkwy Ramp to Giant Rd	6.7	A	6.9	A	6.8	A	7.0	A
6. Giant Rd/Giant Hwy	8.8	A	12.3	B	8.8	A	12.4	B
7. Markovich Ln/Richmond Pkwy Ramp to Giant Rd	1.6	A	1.6	A	2.6	A	2.2	A
Southbound (Markovich Ln) Approach	*10.7*	*B*	*11.6*	*B*	*11.8*	*B*	*12.9*	*B*
8. San Pablo Ave/Richmond Pkwy	**98.2**	**F**	**93.4**	**F**	**98.5**	**F**	**94.4**	**F**
9. Blume Dr-I-80 South Ramps/ Richmond Pkwy	52.1	D	60.8	E	52.5	D	61.8	E
10. I-80 North Ramps/Fitzgerald Dr	8.5	A	14.4	B	8.5	A	14.5	B

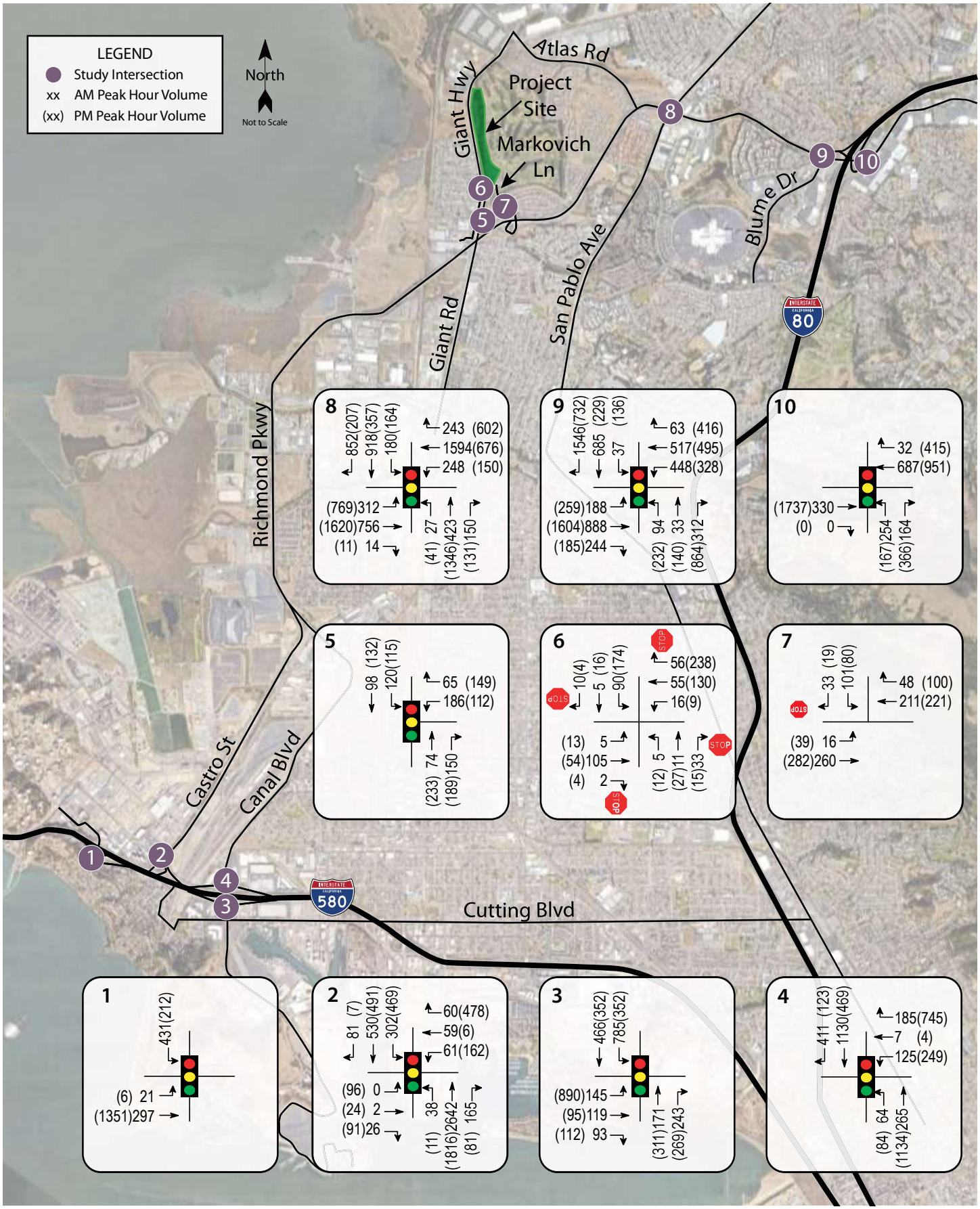
Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics;* **Bold** text = deficient operation.

Finding – The study intersections are expected to continue operating at acceptable levels of service upon the addition of project-generated traffic to cumulative volumes except at the intersections of Castro Street/I-580 West Ramps, Canal Boulevard/I-580 East Ramps, San Pablo Avenue/Richmond Parkway, and Blume Drive-I-80 South Ramps/Richmond Parkway, which operate at LOS E or F without or with project-generated traffic added. Because the project would increase average control delay by less than five seconds, under the applicable criteria this is considered an acceptable impact.

At-Grade Railroad Crossing

The Burlington-Northern Santa Fe (BNSF) Railway operates freight service within the project vicinity on railroads owned by Union Pacific Railroad (UPRR). BNSF operates longer trains that block road crossings for extended periods of time. According to an agreement between the City of Richmond and BNSF, trains are not permitted to block crossings for longer than 10 minutes unless they are continuously moving through the crossing in the same direction or if no vehicle or pedestrian is waiting at the crossing. Of the study intersections, only Giant Road/Giant Highway is subject to train blockages. There are an estimated 26 train movements crossing this at-grade location per day, with 13 train movements occurring between 6:00 a.m. and 6:00 p.m. This is approximately one train movement per hour.

The at-grade crossing has existing regulatory signs such as crossbuck (R15-1) signs, railroad crossing (W10-1 and W10-2) signs, and no train horn (W10-9) signs. A review of existing conditions in the field determined that the northbound approach W10-9 sign is partially obscured by paint, and there is no eastbound approach W10-9 sign. Chapter 8B of the CA-MUTCD provides guidance on signage and markings at the location of a grade crossing. At



ric022.ai 2/20

Transportation Impact Analysis for the Richmond Country Club Project

Figure 9 – Cumulative plus Project Traffic Volumes

grade crossings, the "Look" (R15-8) sign should be mounted as a supplemental plaque on the crossbuck support, or on a separate post in the immediate vicinity of the crossing. It is recommended that R15-8 "Look" signs be installed on all four approaches to the Giant Road/Giant Highway intersection, and that W10-9 "No Train Horn" signs be installed on the northbound and eastbound approaches.

The effect of railroad gate down-time is that drivers are delayed as they wait to cross the tracks and vehicle queues form on the streets. During peak commute times when traffic volumes are higher, there is increased potential for conflicts and safety concerns associated with vehicles, bicyclists, and pedestrians, which must stay clear of the tracks. Train blockages at Giant Road/Giant Highway during peak hours occur infrequently (approximately once per hour) and cause brief queues that do not back up to upstream intersections.

Finding – Intersection operations during the a.m. and p.m. peak hour at Giant Road/Giant Highway is minimally impacted due to train crossings.

Recommendation – Signage near the at-grade railroad crossing at the intersection of Giant Road/Giant Highway should be improved by installing W10-9 "No Train Horn" signs on the northbound and eastbound approaches and R15-8 "Look" signs on all four approaches to the intersection.

Delay Index along Routes of Regional Significance

The methodology used to calculate the Delay Index (DI) is defined by the CCTA Technical Procedures. The projected performance of the DI is calculated by estimating the additional congested travel time caused by the project on the key CMP routes. This estimation is based on the assigned networks from the CCTA Countywide Travel Demand Model during a.m. and p.m. peak hours, which contain a congested travel time and an uncongested, or free-flow, travel time for each link. This increase in travel time was compared to the no-build results to determine if the project impact on the Delay Index would be significant. While CCTA has not established a threshold for impact, a 5-percent change in delay index with the project over the no-project could be considered an impact

The following steps have been taken to calculate the Delay Index (DI).

1. Prepare a.m. and p.m. peak-period runs of the CCTA Countywide Travel Demand Model for the 2040 no-build condition.
2. Estimate the congested travel time for the key CMP routes by summing the congested travel time for all links of the study segments on these routes.
3. Divide the estimated future year no-build congested travel time by the estimate of uncongested travel time for the key CMP routes to get the no-build scenario estimate of Delay Index for the route.
4. Prepare a.m. and p.m. peak-period runs of the CCTA Countywide Travel Demand Model for the 2040 build (2040 no-build plus Project) condition.
5. Estimate the congested travel time for the routes of regional significance by summing the congested travel time for all links of the study segments on these routes.
6. Divide the estimated of "build" congested travel time by the estimated uncongested travel time for the routes to get the build scenario estimate of Delay Index for the routes.

Table 12 summarizes the Delay Indices and congested speeds calculated based on the 2040 no-build and 2040 build scenarios from the CCTA Countywide Travel Demand Model with Association of Bay Area Governments (ABAG) Plan Bay Area sociodemographic assumptions. The Delay Index was computed for the following three key Regional CMP Routes within West Contra Costa that the project could potentially impact.

- Richmond Parkway
- Interstate 80
- Interstate 580

Table 12 – Cumulative 2040 Conditions Delay Index on CMP Routes

Roadway Segment	Peak Hour	2040 No Project Condition		2040 Project Condition		Change in Delay Index	Significant Impact?
		Speed (mph)	Delay Index	Speed (mph)	Delay Index		
Richmond Parkway between I-80 and I-580-Northbound	AM	43	1.0	43	1.0	0.0	No
	PM	28	1.6	27	1.6	0.0	No
Richmond Parkway between I-80 and I-580-Southbound	AM	14	3.0	15	2.9	-0.1	No
	PM	43	1.0	43	1.0	0.0	No
I-80 between Richmond Parkway and City Boundary (Cerrito Creek) - Northbound	AM	35	1.6	35	1.6	0.0	No
	PM	14	3.9	14	4.0	0.1	No
I-80 between Richmond Parkway and City Boundary (Cerrito Creek) - Southbound	AM	11	5.6	11	5.6	0.0	No
	PM	33	1.8	34	1.8	0.0	No
I-580 between Richmond Parkway and City Boundary (Cerrito Creek) - Eastbound	AM	30	2.0	31	2.0	0.0	No
	PM	47	1.3	47	1.3	0.0	No
I-580 between Richmond Parkway and City Boundary (Cerrito Creek) - Westbound	AM	49	1.2	49	1.2	0.0	No
	PM	28	2.1	28	2.2	0.1	No

Source: CCTA Decennial Model & Kittelson and Associates, Inc., 2020
Note: Speed and Delay Index computed by the CCTA Travel Demand Model

Finding – Based on the results shown in Table 12, the Project is not expected to increase the Delay Index above significant levels identified in the CCTA Technical Procedures and the threshold of 5-percent established above, therefore the Project will cause a less-than-significant impact to the CMP routes.

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Alternative Modes

Pedestrian Facilities

The proposed site plan identifies sidewalks and one crosswalk to be constructed within the project site, connecting the residences to each other. Sidewalks and crosswalks are not generally provided on Markovich Lane in the area immediately outside of the site. Pedestrians walking to or from the site would be limited to using undeveloped road shoulders.

Project Site – Walking access within the site is generally acceptable. Sidewalks are located throughout the site.

Finding – Pedestrian access between the project site and Markovich Lane is inadequate.

Recommendation – The applicant should construct sidewalk along Markovich Lane between the site and the nearest transit stop to enable pedestrian access. Upon completion of the construction of sidewalk, pedestrian facilities serving the site would be adequate.

Bicycle Facilities

Existing bicycle facilities on the Richmond Parkway Ramp to Giant Road together with shared use of minor streets provide adequate access for bicyclists.

Finding – Bicycle facilities serving the project site are adequate.

Transit

Existing transit routes are adequate to accommodate potential project-generated transit trips based on the number of routes and frequency of service. Existing stops on Giant Road are within approximately one-half mile walking distance of the site. Based on field observations, ridership on buses serving Routes 71 and 376 is relatively low with many seats observed to be unoccupied. The volume of riders expected to be generated by the project would likely not exceed the carrying capacity of the existing bus service near the project site. However, the most direct route between the bus stops and the project site involves using Richmond Parkway Ramp to Giant Road and Giant Road, which both have unimproved shoulders with no sidewalks.

Finding – Transit facilities serving the project site are adequate.

Recommendation – Pedestrian connectivity between the project site and the nearest transit facility should be improved along Richmond Parkway Ramp to Giant Road and Giant Road to accommodate project-generated transit trips.

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Access and Circulation

Site Access

The project would be accessed via one new public street connection with Markovich Lane. The existing Richmond Country Club entry gate would be relocated approximately 140 feet to the north, so that residents of the single-family homes would have unrestricted access to the new street connection. The new street would be 28 feet wide with continuous sidewalks along both sides and one lane of travel in each direction, terminating in a cul-de-sac at the northern end.

Finding – Site ingress and egress would be provided via Markovich Lane and a proposed new street connection. Access to the project site would be adequate.

Sight Distance

Sight distance along Markovich Lane at the location of the proposed street connection was evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distance at intersections of public streets is based on corner sight distances, while recommended sight distances for minor street approaches that are either a private road or a driveway are based on stopping sight distance. Both use the approach travel speeds as the basis for determining the recommended sight distance. Additionally, the stopping sight distance needed for a following driver to stop if there is a vehicle waiting to turn into a side street or driveway is evaluated based on stopping sight distance criterion and the approach speed on the major street.

For the posted 15-mph speed limit on Markovich Lane, the recommended corner sight distance is 165 feet and the recommended stopping sight distance is 100 feet. Based on a review of field conditions, sight lines at the proposed street connection extend more than 200 feet in each direction, which would be more than adequate for the posted speed limit.

Finding – Adequate corner and stopping sight distances would be available to accommodate turns into and out of the project site.

Access Analysis

Left-Turn Lane Warrants

The need for a left-turn lane on Markovich Lane at the new street connection was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as an update of the methodology developed by the Washington State Department of Transportation and published in the *Method For Prioritizing Intersection Improvements*, January 1997. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected or actual traffic volumes in order to determine the need for a left-turn pocket based on safety issues.

Based on Cumulative plus Project volumes, as well as safety criteria, a left-turn lane would not be warranted on Markovich Lane at the new street connection. A sensitivity analysis indicates that volumes on Markovich Lane as well as turning into the site would need to more than quadruple before a left-turn lane would be warranted. Copies of the Turn Lane Warrant Spreadsheets are provided in Appendix B.

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Finding – A left-turn lane on Markovich Lane at the new street connections would not be warranted under volumes for the Cumulative plus Project scenarios during both the a.m. and p.m. peak hours.

Traffic Signal Warrants

A signal warrant study was performed for the intersections of Giant Road/Giant Highway and Markovich Lane/ Richmond Parkway Ramp to Giant Road. Chapter 4C of the CA-MUTCD provides guidance on when a traffic signal should be considered. There are nine different warrants, or criteria, but for the purposes of this study, only Warrant 3 (the peak hour warrant) was evaluated.

Warrant 3: Under the Peak Hour Warrant the need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:

A. If all three of the following conditions exist for the same one hour (any four consecutive 15-minute periods) of an average day:

    1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: four vehicle-hours for a one-lane approach; or five vehicle-hours for a two-lane approach, and
    2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
    3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for one hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

The intersections of Giant Road/Giant Highway and Markovich Lane/Richmond Parkway Ramp to Giant Road would not warrant a traffic signal under Cumulative plus Project volumes during both the a.m. and p.m. peak hours. Copies of the Signal Warrant Spreadsheets are provided in Appendix C.

Finding – The Peak Hour Volume warrant would not be met under either a.m. or p.m. peak hour Cumulative plus Project volumes at the intersections of Giant Road/Giant Highway and Markovich Lane/Richmond Parkway Ramp to Giant Road.

On-Site Circulation

On-site circulation was evaluated to determine if the layout would provide adequate circulation for vehicles maneuvering through the new street connection. Based on a review of the site plan, the new street connection is expected to provide an acceptable circulation system. The planned width of the new street connection, 28 feet, would not provide enough width for on- street parking on both sides of the street. It is recommended that parking be restricted to only one side of the street, in addition to driveways and private garages.

Emergency Vehicle Access

The proposed site plan would provide a 20-foot wide all-weather emergency vehicle access road from Giant Road to the northern end of the new street connection. The access road would not be accessible to the public; the terminus on the new street connection would be barred by protective bollards, and the terminus on Giant Road

would be gated with a Knox Box. It is recommended that Richmond Fire Department review this site plan to confirm compliance with their minimum requirements for fire truck access.

Finding – On-site circulation is expected to operate acceptably.

Recommendations – The applicant should consult with the Richmond Fire Department to confirm that the site plan is consistent with minimum standards for fire truck access. On-street parking should be prohibited on one side of the new street connection.

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Parking

The project was analyzed to determine whether the proposed parking supply would be sufficient to satisfy City of Richmond parking supply requirements which are based on the City of Richmond Municipal Code, Article 15.04.607; Parking and Loading Standards. The proposed project would provide each single-family home with an attached garage with capacity for two standard vehicles. Additionally, each residence would have a driveway with a minimum 20-foot setback that has the potential to accommodate two additional vehicles. The proposed parking supply of 204 internal garage spaces, with 204 additional driveway parking spaces, is anticipated to adequately accommodate the estimated parking demand based on City Code, as shown in Table 13.

Table 13 – Parking Analysis Summary

Land Use	Units	Supply (spaces)	City Requirements	
			Rate	Spaces Required
Residential Single Unit	102 du	204 garage spaces 204 driveway spaces	2.0 per du	204

Notes: du = dwelling unit

Finding – The proposed parking supply for the project, in addition to on-street parking, would be adequate to meet the City's parking requirements and substantially exceeds the requirement.

Bicycle Parking

The City of Richmond's Municipal Code also stipulates the City's bicycle parking requirements for new developments. According to the City of Richmond Municipal Code, bicycle parking is not required for Single Unit dwellings. For the proposed project, bicycle parking would not be required, however bicycle parking would be adequate because the units have private garages for bicycle storage.

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Conclusions and Recommendations

Conclusions

- The proposed project would generate an average of 963 daily trips, including 75 new trips during the a.m. peak hour and 101 new trips during the p.m. peak hour.
- The unmitigated annual VMT for the proposed project is 6,097 vehicle-miles daily, which is less than the citywide average VMT for a project generating the same number of trips in the City of Richmond.
- All study intersections are expected to continue operating acceptably under Existing and Background conditions without and with the project, except for the intersections of Castro Street/I-580 West Ramps during the p.m. peak hour and San Pablo Avenue/Richmond Parkway during both the a.m. and p.m. peak hours, which operate at LOS E or F.
- Under Cumulative conditions, the intersections of Castro Street/I-580 West Ramps, Canal Boulevard/I-580 East Ramps, San Pablo Avenue/Richmond Parkway, and Blume Drive-I-80 South Ramps/Richmond Parkway would operate at unacceptable levels of service with or without the project.
- The project's impact on the study intersections would be within the range of added delay that is considered acceptable under the applicable standards.
- The at-grade railroad in the vicinity of the project intersection at Giant Road/Giant Highway would minimally impact intersection operation during the a.m. and p.m. peak hour.
- The project is not expected to increase the Delay Index above significant levels identified in the CCTA Technical Procedures or above 5 percent, therefore the project will not cause a significant impact to the CMP routes.
- Bicycle and transit facilities are adequate to serve the project site.
- Pedestrian facilities within the vicinity of the project site are not adequate.
- Site access and circulation is expected to operate acceptably.
- A dedicated left-turn lane would not be warranted on Markovich Lane at the new street connection created by the project.
- The Peak Hour Volume Warrant indicating potential need for a traffic signal was not met under Cumulative plus Project volumes during both the a.m. and p.m. peak hours at Giant Road/Giant Highway and Markovich Lane/Richmond Parkway Ramp to Giant Road.
- The proposed parking supply satisfies City requirements. Bicycle parking is not necessary because private garages would provide adequate bicycle storage.

Recommendations

- The project should implement a TDM plan and the developer should obtain GreenTRIP (or equivalent) certification prior to the issuance of a certificate of occupancy.

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- Sidewalk should be constructed between the project site and the nearest transit stop to enable pedestrian access and project-generated transit trips.

- The applicant should consult with the Richmond Fire Department to confirm that the site plan is consistent with minimum standards for fire truck access.

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Study Participants and References

Study Participants

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Appendix A

Intersection Level of Service Calculations

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HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/24/2020

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	241	0	0	353	0
Future Volume (veh/h)	17	241	0	0	353	0
Number	7	4			1	16
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	22	305			447	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	0.79	0.79			0.79	0.79
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	130	1901			0	0
Arrive On Green	0.56	0.56			0.00	0.00
Sat Flow, veh/h	233	3481			0	
Grp Volume(v), veh/h	175	152			0.0	
Grp Sat Flow(s),veh/h/ln	1851	1770				
Q Serve(g_s), s	0.5	0.5				
Cycle Q Clear(g_c), s	0.5	0.5				
Prop In Lane	0.13					
Lane Grp Cap(c), veh/h	1039	993				
V/C Ratio(X)	0.17	0.15				
Avail Cap(c_a), veh/h	7169	6853				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.2	1.2				
Incr Delay (d2), s/veh	0.1	0.1				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.3	0.2				
LnGrp Delay(d),s/veh	1.3	1.3				
LnGrp LOS	A	A				
Approach Vol, veh/h		327				
Approach Delay, s/veh		1.3				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				11.6				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				45.0				
Max Q Clear Time (g_c+I1), s				2.5				
Green Ext Time (p_c), s				2.1				

Intersection Summary	
HCM 2010 Ctrl Delay	1.3
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	21	50	48	49	31	216	135	241	433	66
Future Volume (veh/h)	0	1	21	50	48	49	31	216	135	241	433	66
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	1	24	56	56	56	35	245	0	274	492	75
Adj No. of Lanes	1	1	1	1	1	2	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	904	768	106	1094	1860	168	335	244	354	707	316
Arrive On Green	0.00	0.49	0.49	0.06	0.59	0.59	0.09	0.09	0.00	0.20	0.20	0.20
Sat Flow, veh/h	1774	1863	1583	1774	1863	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	1	24	56	56	56	35	245	0	274	492	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	3.4	1.4	0.8	2.0	7.4	0.0	16.1	14.2	4.4
Cycle Q Clear(g_c), s	0.0	0.0	0.9	3.4	1.4	0.8	2.0	7.4	0.0	16.1	14.2	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	904	768	106	1094	1860	168	335	244	354	707	316
V/C Ratio(X)	0.00	0.00	0.03	0.53	0.05	0.03	0.21	0.73	0.00	0.77	0.70	0.24
Avail Cap(c_a), veh/h	177	904	768	150	1094	1860	295	589	358	529	1055	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	14.6	14.8	50.2	9.7	9.5	46.0	48.4	0.0	41.7	40.9	37.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	3.8	0.0	0.0	0.6	3.1	0.0	4.1	1.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	1.8	0.7	0.4	1.0	3.7	0.0	8.3	7.1	2.0
LnGrp Delay(d),s/veh	0.0	14.6	14.9	54.0	9.7	9.5	46.6	51.5	0.0	45.7	42.2	37.4
LnGrp LOS		B	B	D	A	A	D	D		D	D	D
Approach Vol, veh/h		25			168			280			841	
Approach Delay, s/veh		14.9			24.4			50.9			42.9	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	58.0		26.2	0.0	69.2		14.6
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	9.3	31.9		* 33	* 11	30.2		18.3
Max Q Clear Time (g_c+I1), s	5.4	2.9		18.1	0.0	3.4		9.4
Green Ext Time (p_c), s	0.0	0.0		3.9	0.0	0.5		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 EB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	97	76	0	0	0	0	139	199	640	381	0
Future Volume (veh/h)	119	97	76	0	0	0	0	139	199	640	381	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	119	124	84				0	153	219	703	419	0
Adj No. of Lanes	1	1	1				0	1	2	1	2	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	249	262	221				0	361	614	635	2269	0
Arrive On Green	0.14	0.14	0.14				0.00	0.20	0.20	0.36	0.65	0.00
Sat Flow, veh/h	1757	1845	1561				0	1845	3136	1757	3597	0
Grp Volume(v), veh/h	119	124	84				0	153	219	703	419	0
Grp Sat Flow(s),veh/h/ln	1757	1845	1561				0	1845	1568	1757	1752	0
Q Serve(g_s), s	2.1	2.1	1.6				0.0	2.4	2.0	12.0	1.6	0.0
Cycle Q Clear(g_c), s	2.1	2.1	1.6				0.0	2.4	2.0	12.0	1.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	249	262	221				0	361	614	635	2269	0
V/C Ratio(X)	0.48	0.47	0.38				0.00	0.42	0.36	1.11	0.18	0.00
Avail Cap(c_a), veh/h	1296	1361	1152				0	1027	1746	635	3535	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.1	13.1	12.9				0.0	11.7	11.5	10.6	2.3	0.0
Incr Delay (d2), s/veh	0.5	0.5	0.4				0.0	1.1	0.5	69.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.1	0.7				0.0	1.3	0.9	17.8	0.8	0.0
LnGrp Delay(d),s/veh	13.7	13.6	13.3				0.0	12.8	12.0	79.6	2.4	0.0
LnGrp LOS	B	B	B					B	B	F	A	
Approach Vol, veh/h		327						372			1122	
Approach Delay, s/veh		13.6						12.4			50.7	
Approach LOS		B						B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	10.5		7.7		25.5		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.0	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	14.0	4.4		4.1		3.6		
Green Ext Time (p_c), s	0.0	2.1		0.7		3.0		

Intersection Summary	
HCM 2010 Ctrl Delay	36.2
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	102	5	150	52	216	0	0	922	337
Future Volume (veh/h)	0	0	0	102	5	150	52	216	0	0	922	337
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				111	5	163	57	235	0	0	1002	366
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				294	13	273	124	2281	0	0	1866	791
Arrive On Green				0.17	0.17	0.17	0.07	0.65	0.00	0.00	0.51	0.51
Sat Flow, veh/h				1685	76	1565	1757	3597	0	0	3689	1565
Grp Volume(v), veh/h				116	0	163	57	235	0	0	1002	366
Grp Sat Flow(s),veh/h/ln				1760	0	1565	1757	1752	0	0	1845	1565
Q Serve(g_s), s				2.3	0.0	3.8	1.2	1.0	0.0	0.0	7.4	6.0
Cycle Q Clear(g_c), s				2.3	0.0	3.8	1.2	1.0	0.0	0.0	7.4	6.0
Prop In Lane				0.96		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				307	0	273	124	2281	0	0	1866	791
V/C Ratio(X)				0.38	0.00	0.60	0.46	0.10	0.00	0.00	0.54	0.46
Avail Cap(c_a), veh/h				1208	0	1074	351	3366	0	0	2531	1074
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				14.6	0.0	15.2	17.9	2.6	0.0	0.0	6.7	6.4
Incr Delay (d2), s/veh				0.6	0.0	1.5	1.0	0.0	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	1.7	0.6	0.5	0.0	0.0	3.7	2.7
LnGrp Delay(d),s/veh				15.2	0.0	16.8	18.9	2.6	0.0	0.0	7.1	7.0
LnGrp LOS				B		B	B	A			A	A
Approach Vol, veh/h					279			292			1368	
Approach Delay, s/veh					16.1			5.8			7.0	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		30.1			5.8	24.3		10.0
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		38.5			8.0	27.5		27.5
Max Q Clear Time (g_c+I1), s		3.0			3.2	9.4		5.8
Green Ext Time (p_c), s		1.6			0.0	10.9		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	8.2
HCM 2010 LOS	A

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	151	51	60	122	97	80
Future Volume (veh/h)	151	51	60	122	97	80
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	164	55	65	133	105	87
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	355	317	197	403	658	681
Arrive On Green	0.20	0.20	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1774	1583	539	1102	1180	1863
Grp Volume(v), veh/h	164	55	0	198	105	87
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1640	1180	1863
Q Serve(g_s), s	1.8	0.6	0.0	1.9	1.5	0.7
Cycle Q Clear(g_c), s	1.8	0.6	0.0	1.9	3.4	0.7
Prop In Lane	1.00	1.00		0.67	1.00	
Lane Grp Cap(c), veh/h	355	317	0	600	658	681
V/C Ratio(X)	0.46	0.17	0.00	0.33	0.16	0.13
Avail Cap(c_a), veh/h	2027	1809	0	2249	1844	2554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	7.2	0.0	5.0	6.3	4.6
Incr Delay (d2), s/veh	0.9	0.3	0.0	0.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.3	0.0	0.9	0.5	0.4
LnGrp Delay(d),s/veh	8.6	7.5	0.0	5.3	6.4	4.7
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	219		198			192
Approach Delay, s/veh	8.4		5.3			5.6
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.0				13.0		8.9
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		3.9				5.4		3.8
Green Ext Time (p_c), s		1.2				0.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	86	1	13	45	44	4	9	27	73	4	8
Future Vol, veh/h	4	86	1	13	45	44	4	9	27	73	4	8
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	90	1	14	47	46	4	9	28	76	4	8
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.5	8.6	8.1	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	10%	4%	0%	13%	95%	0%
Vol Thru, %	22%	96%	0%	44%	5%	0%
Vol Right, %	68%	0%	100%	43%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	90	1	102	77	8
LT Vol	4	4	0	13	73	0
Through Vol	9	86	0	45	4	0
RT Vol	27	0	1	44	0	8
Lane Flow Rate	42	94	1	106	80	8
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.055	0.13	0.001	0.141	0.124	0.01
Departure Headway (Hd)	4.774	4.998	4.273	4.767	5.549	4.37
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	751	720	840	754	648	821
Service Time	2.796	2.713	1.988	2.783	3.267	2.088
HCM Lane V/C Ratio	0.056	0.131	0.001	0.141	0.123	0.01
HCM Control Delay	8.1	8.5	7	8.6	9.1	7.1
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.4	0	0.5	0.4	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	213	173	25	40	23
Future Vol, veh/h	11	213	173	25	40	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	232	188	27	43	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	215	0	-	0	342	108
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	140	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1352	-	-	-	628	925
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	872	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1352	-	-	-	622	925
Mov Cap-2 Maneuver	-	-	-	-	622	-
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	872	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1352	-	-	-	622	925
HCM Lane V/C Ratio	0.009	-	-	-	0.07	0.027
HCM Control Delay (s)	7.7	-	-	-	11.2	9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	593	11	203	1300	199	22	347	123	147	753	698
Future Volume (veh/h)	253	593	11	203	1300	199	22	347	123	147	753	698
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	269	631	12	216	1383	0	23	369	131	156	801	743
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	317	1758	33	202	1590	495	52	1019	456	180	1275	570
Arrive On Green	0.09	0.34	0.34	0.06	0.31	0.00	0.03	0.29	0.29	0.10	0.36	0.36
Sat Flow, veh/h	3442	5138	98	3442	5085	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	269	416	227	216	1383	0	23	369	131	156	801	743
Grp Sat Flow(s),veh/h/ln	1721	1695	1846	1721	1695	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	10.5	12.5	12.6	8.0	34.9	0.0	1.7	11.3	8.7	11.8	25.5	49.0
Cycle Q Clear(g_c), s	10.5	12.5	12.6	8.0	34.9	0.0	1.7	11.3	8.7	11.8	25.5	49.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	317	1160	632	202	1590	495	52	1019	456	180	1275	570
V/C Ratio(X)	0.85	0.36	0.36	1.07	0.87	0.00	0.44	0.36	0.29	0.86	0.63	1.30
Avail Cap(c_a), veh/h	331	1208	658	202	1641	511	274	1392	623	222	1275	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.8	33.6	33.6	64.0	44.1	0.0	64.9	38.5	37.6	60.2	36.0	43.5
Incr Delay (d2), s/veh	17.4	0.3	0.6	82.3	5.5	0.0	4.3	0.4	0.6	23.2	1.3	148.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	5.9	6.5	6.1	17.2	0.0	0.9	5.6	3.9	6.9	12.7	45.0
LnGrp Delay(d),s/veh	78.3	33.9	34.2	146.3	49.7	0.0	69.2	38.9	38.2	83.4	37.3	192.4
LnGrp LOS	E	C	C	F	D		E	D	D	F	D	F
Approach Vol, veh/h		912			1599			523			1700	
Approach Delay, s/veh		47.0			62.7			40.1			109.3	
Approach LOS		D			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	54.1	10.0	57.0	19.0	50.0	19.8	47.2
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	8.0	48.5	21.0	49.0	13.1	43.9	17.0	* 54
Max Q Clear Time (g_c+I1), s	10.0	14.6	3.7	51.0	12.5	36.9	13.8	13.3
Green Ext Time (p_c), s	0.0	7.2	0.0	0.0	0.0	5.6	0.1	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	73.9
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	713	200	367	420	51	77	27	256	30	562	1264
Future Volume (veh/h)	142	713	200	367	420	51	77	27	256	30	562	1264
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	153	767	215	395	452	0	83	29	275	32	604	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	201	1985	618	392	729	620	202	581	862	49	799	629
Arrive On Green	0.11	0.39	0.39	0.12	0.40	0.00	0.11	0.31	0.31	0.03	0.23	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2739	1757	3505	2760
Grp Volume(v), veh/h	153	767	215	395	452	0	83	29	275	32	604	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1369	1757	1752	1380
Q Serve(g_s), s	9.5	12.3	10.9	13.0	22.2	0.0	5.0	1.2	8.6	2.0	18.1	0.0
Cycle Q Clear(g_c), s	9.5	12.3	10.9	13.0	22.2	0.0	5.0	1.2	8.6	2.0	18.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	1985	618	392	729	620	202	581	862	49	799	629
V/C Ratio(X)	0.76	0.39	0.35	1.01	0.62	0.00	0.41	0.05	0.32	0.65	0.76	0.00
Avail Cap(c_a), veh/h	347	1985	618	392	729	620	233	812	1206	95	1267	997
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.5	24.4	24.0	49.9	27.4	0.0	46.4	26.9	29.5	54.3	40.7	0.0
Incr Delay (d2), s/veh	2.3	0.6	1.5	47.1	3.9	0.0	0.5	0.0	0.2	5.3	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	5.8	4.9	8.6	12.1	0.0	2.4	0.6	3.3	1.1	9.0	0.0
LnGrp Delay(d),s/veh	50.8	25.0	25.6	97.0	31.3	0.0	46.9	27.0	29.7	59.6	42.8	0.0
LnGrp LOS	D	C	C	F	C		D	C	C	E	D	
Approach Vol, veh/h		1135			847			387			636	
Approach Delay, s/veh		28.6			62.0			33.2			43.6	
Approach LOS		C			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	49.6	16.7	29.9	16.6	49.7	6.9	39.7
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	15.0	14.3	7.0	20.1	11.5	24.2	4.0	10.6
Green Ext Time (p_c), s	0.0	7.8	0.0	5.6	0.1	2.3	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	41.8
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	269	0	0	563	26	205	0	134	0	0	0
Future Volume (veh/h)	0	269	0	0	563	26	205	0	134	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	292	0	0	612	0	223	0	146			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	2331	1043	0	2331	1043	499	0	229			
Arrive On Green	0.00	0.67	0.00	0.00	0.67	0.00	0.15	0.00	0.15			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	292	0	0	612	0	223	0	146			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	1.5	0.0	0.0	3.4	0.0	2.9	0.0	4.2			
Cycle Q Clear(g_c), s	0.0	1.5	0.0	0.0	3.4	0.0	2.9	0.0	4.2			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2331	1043	0	2331	1043	499	0	229			
V/C Ratio(X)	0.00	0.13	0.00	0.00	0.26	0.00	0.45	0.00	0.64			
Avail Cap(c_a), veh/h	0	2331	1043	0	2331	1043	1681	0	773			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	3.0	0.0	0.0	3.3	0.0	18.8	0.0	19.4			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.0	0.5	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.0	0.0	1.7	0.0	1.4	0.0	2.0			
LnGrp Delay(d),s/veh	0.0	3.1	0.0	0.0	3.6	0.0	19.3	0.0	21.6			
LnGrp LOS		A			A		B		C			
Approach Vol, veh/h		292			612			369				
Approach Delay, s/veh		3.1			3.6			20.2				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		11.3		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		3.5		6.2		5.4		
Green Ext Time (p_c), s		2.6		0.9		5.8		

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/24/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	1049	0	0	165	0
Future Volume (veh/h)	4	1049	0	0	165	0
Number	7	4			5	12
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	4	1179			185	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	0.89	0.89			0.89	0.89
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	8	2470			0	0
Arrive On Green	0.68	0.68			0.00	0.00
Sat Flow, veh/h	12	3713			0	
Grp Volume(v), veh/h	634	549			0.0	
Grp Sat Flow(s),veh/h/ln	1862	1770				
Q Serve(g_s), s	2.6	2.3				
Cycle Q Clear(g_c), s	2.6	2.3				
Prop In Lane	0.01					
Lane Grp Cap(c), veh/h	1271	1207				
V/C Ratio(X)	0.50	0.45				
Avail Cap(c_a), veh/h	2018	1918				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.2	1.2				
Incr Delay (d2), s/veh	0.3	0.3				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	1.3	1.2				
LnGrp Delay(d),s/veh	1.5	1.4				
LnGrp LOS	A	A				
Approach Vol, veh/h		1183				
Approach Delay, s/veh		1.5				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				16.1				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				17.4				
Max Q Clear Time (g_c+I1), s				4.6				
Green Ext Time (p_c), s				6.4				

Intersection Summary	
HCM 2010 Ctrl Delay	1.5
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	18	71	126	4	373	8	1412	63	362	383	5
Future Volume (veh/h)	75	18	71	126	4	373	8	1412	63	362	383	5
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	52	65	81	147	0	424	9	1605	0	411	435	6
Adj No. of Lanes	1	1	1	2	0	2	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	398	338	193	0	643	707	1411	718	382	762	341
Arrive On Green	0.06	0.21	0.21	0.05	0.00	0.20	0.40	0.40	0.00	0.22	0.22	0.22
Sat Flow, veh/h	1774	1863	1583	3548	0	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	52	65	81	147	0	424	9	1605	0	411	435	6
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.2	4.3	6.4	6.1	0.0	18.5	0.5	59.8	0.0	32.3	16.5	0.4
Cycle Q Clear(g_c), s	4.2	4.3	6.4	6.1	0.0	18.5	0.5	59.8	0.0	32.3	16.5	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	398	338	193	0	643	707	1411	718	382	762	341
V/C Ratio(X)	0.45	0.16	0.24	0.76	0.00	0.66	0.01	1.14	0.00	1.08	0.57	0.02
Avail Cap(c_a), veh/h	130	398	338	229	0	643	707	1411	718	382	762	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.6	48.1	48.9	69.9	0.0	55.0	27.3	45.1	0.0	58.9	52.6	46.4
Incr Delay (d2), s/veh	2.7	0.9	1.7	11.6	0.0	2.5	0.0	71.1	0.0	67.8	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.3	2.9	3.3	0.0	8.3	0.2	43.1	0.0	23.0	8.2	0.2
LnGrp Delay(d),s/veh	70.3	49.0	50.6	81.6	0.0	57.5	27.3	116.2	0.0	126.6	53.7	46.4
LnGrp LOS	E	D	D	F		E	C	F		F	D	D
Approach Vol, veh/h		198			571			1614			852	
Approach Delay, s/veh		55.2			63.7			115.7			88.8	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.9	36.6		36.5	14.4	35.1		64.0
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	8.3	30.5		* 32	* 11	29.2		59.8
Max Q Clear Time (g_c+I1), s	18.1	8.4		34.3	6.2	20.5		61.8
Green Ext Time (p_c), s	0.1	0.5		0.0	0.0	1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	95.7
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 Ramps/I-580 EB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	74	87	0	0	0	0	243	210	272	274	0
Future Volume (veh/h)	695	74	87	0	0	0	0	243	210	272	274	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	763	0	89				0	338	154	278	280	0
Adj No. of Lanes	2	0	1				0	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1049	0	467				0	831	353	351	1781	0
Arrive On Green	0.30	0.00	0.30				0.00	0.23	0.23	0.20	0.51	0.00
Sat Flow, veh/h	3514	0	1565				0	3689	1568	1757	3597	0
Grp Volume(v), veh/h	763	0	89				0	338	154	278	280	0
Grp Sat Flow(s),veh/h/ln	1757	0	1565				0	1845	1568	1757	1752	0
Q Serve(g_s), s	7.0	0.0	1.5				0.0	2.8	3.1	5.4	1.5	0.0
Cycle Q Clear(g_c), s	7.0	0.0	1.5				0.0	2.8	3.1	5.4	1.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1049	0	467				0	831	353	351	1781	0
V/C Ratio(X)	0.73	0.00	0.19				0.00	0.41	0.44	0.79	0.16	0.00
Avail Cap(c_a), veh/h	2376	0	1058				0	1884	801	582	3241	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.4	0.0	9.4				0.0	12.0	12.1	13.8	4.8	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.1				0.0	0.5	1.2	3.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	0.7				0.0	1.5	1.4	2.9	0.7	0.0
LnGrp Delay(d),s/veh	11.7	0.0	9.5				0.0	12.4	13.3	16.8	4.8	0.0
LnGrp LOS	B		A					B	B	B	A	
Approach Vol, veh/h		852						492			558	
Approach Delay, s/veh		11.5						12.7			10.8	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	10.2	12.2		13.8		22.4		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.0	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	7.4	5.1		9.0		3.5		
Green Ext Time (p_c), s	0.3	3.1		1.6		1.9		

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	194	3	575	65	885	0	0	362	96
Future Volume (veh/h)	0	0	0	194	3	575	65	885	0	0	362	96
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				206	3	612	69	941	0	0	385	102
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				793	12	717	132	1391	0	0	958	406
Arrive On Green				0.46	0.46	0.46	0.08	0.40	0.00	0.00	0.26	0.26
Sat Flow, veh/h				1733	25	1567	1757	3597	0	0	3689	1563
Grp Volume(v), veh/h				209	0	612	69	941	0	0	385	102
Grp Sat Flow(s),veh/h/ln				1758	0	1567	1757	1752	0	0	1845	1563
Q Serve(g_s), s				3.5	0.0	16.7	1.8	10.7	0.0	0.0	4.2	2.5
Cycle Q Clear(g_c), s				3.5	0.0	16.7	1.8	10.7	0.0	0.0	4.2	2.5
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				805	0	717	132	1391	0	0	958	406
V/C Ratio(X)				0.26	0.00	0.85	0.52	0.68	0.00	0.00	0.40	0.25
Avail Cap(c_a), veh/h				1003	0	894	292	2219	0	0	1493	632
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				8.0	0.0	11.6	21.5	12.0	0.0	0.0	14.7	14.1
Incr Delay (d2), s/veh				0.1	0.0	6.3	1.2	0.6	0.0	0.0	0.4	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.7	0.0	8.4	0.9	5.2	0.0	0.0	2.1	1.1
LnGrp Delay(d),s/veh				8.2	0.0	17.9	22.6	12.6	0.0	0.0	15.1	14.6
LnGrp LOS				A		B	C	B			B	B
Approach Vol, veh/h					821			1010			487	
Approach Delay, s/veh					15.4			13.2			15.0	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.1			6.6	16.5		25.1
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		30.5			8.0	19.5		27.5
Max Q Clear Time (g_c+I1), s		12.7			3.8	6.2		18.7
Green Ext Time (p_c), s		6.5			0.0	3.2		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.4
HCM 2010 LOS	B

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	86	115	182	146	88	103
Future Volume (veh/h)	86	115	182	146	88	103
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	93	125	198	159	96	112
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	325	290	366	294	555	712
Arrive On Green	0.18	0.18	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1774	1583	958	769	1020	1863
Grp Volume(v), veh/h	93	125	0	357	96	112
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1727	1020	1863
Q Serve(g_s), s	1.0	1.5	0.0	3.5	1.8	0.9
Cycle Q Clear(g_c), s	1.0	1.5	0.0	3.5	5.3	0.9
Prop In Lane	1.00	1.00		0.45	1.00	
Lane Grp Cap(c), veh/h	325	290	0	660	555	712
V/C Ratio(X)	0.29	0.43	0.00	0.54	0.17	0.16
Avail Cap(c_a), veh/h	2030	1812	0	2372	1566	2558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	7.9	0.0	5.3	7.3	4.4
Incr Delay (d2), s/veh	0.2	0.4	0.0	0.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.0	1.7	0.5	0.5
LnGrp Delay(d),s/veh	7.9	8.3	0.0	6.0	7.5	4.5
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	218		357			208
Approach Delay, s/veh	8.1		6.0			5.9
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.3				13.3		8.5
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		5.5				7.3		3.5
Green Ext Time (p_c), s		2.3				1.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	42	3	7	101	185	9	21	11	134	12	3
Future Vol, veh/h	10	42	3	7	101	185	9	21	11	134	12	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	45	3	8	109	199	10	23	12	144	13	3
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.7	11.4	9.1	10.7
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	22%	19%	0%	2%	92%	0%
Vol Thru, %	51%	81%	0%	34%	8%	0%
Vol Right, %	27%	0%	100%	63%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	52	3	293	146	3
LT Vol	9	10	0	7	134	0
Through Vol	21	42	0	101	12	0
RT Vol	11	0	3	185	0	3
Lane Flow Rate	44	56	3	315	157	3
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.069	0.086	0.004	0.424	0.26	0.004
Departure Headway (Hd)	5.609	5.543	4.739	4.845	5.971	4.803
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	634	644	750	740	600	740
Service Time	3.686	3.302	2.498	2.885	3.734	2.566
HCM Lane V/C Ratio	0.069	0.087	0.004	0.426	0.262	0.004
HCM Control Delay	9.1	8.8	7.5	11.4	10.8	7.6
HCM Lane LOS	A	A	A	B	B	A
HCM 95th-tile Q	0.2	0.3	0	2.1	1	0

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	220	172	31	35	13
Future Vol, veh/h	27	220	172	31	35	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	229	179	32	36	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	211	0	-	0	366	106
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	171	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1357	-	-	-	607	928
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	842	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1357	-	-	-	594	928
Mov Cap-2 Maneuver	-	-	-	-	594	-
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	842	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1357	-	-	-	594	928
HCM Lane V/C Ratio	0.021	-	-	-	0.061	0.015
HCM Control Delay (s)	7.7	-	-	-	11.5	8.9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	599	1249	8	117	498	470	32	1052	102	128	279	159
Future Volume (veh/h)	599	1249	8	117	498	470	32	1052	102	128	279	159
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	637	1329	9	124	530	0	34	1119	109	136	297	169
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	635	1623	11	163	904	281	58	1269	567	158	1469	656
Arrive On Green	0.18	0.31	0.31	0.05	0.18	0.00	0.03	0.36	0.36	0.09	0.42	0.42
Sat Flow, veh/h	3442	5211	35	3442	5085	1583	1774	3539	1579	1774	3539	1580
Grp Volume(v), veh/h	637	865	473	124	530	0	34	1119	109	136	297	169
Grp Sat Flow(s),veh/h/ln	1721	1695	1856	1721	1695	1583	1774	1770	1579	1774	1770	1580
Q Serve(g_s), s	27.2	34.8	34.8	5.2	14.1	0.0	2.8	43.7	7.0	11.1	7.9	10.3
Cycle Q Clear(g_c), s	27.2	34.8	34.8	5.2	14.1	0.0	2.8	43.7	7.0	11.1	7.9	10.3
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	635	1056	578	163	904	281	58	1269	567	158	1469	656
V/C Ratio(X)	1.00	0.82	0.82	0.76	0.59	0.00	0.59	0.88	0.19	0.86	0.20	0.26
Avail Cap(c_a), veh/h	635	1138	623	163	1028	320	253	1332	595	181	1469	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.1	46.9	46.9	69.4	55.6	0.0	70.3	44.3	32.6	66.2	27.5	28.2
Incr Delay (d2), s/veh	36.5	5.1	8.9	17.7	1.1	0.0	6.8	7.4	0.3	28.3	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	17.1	19.3	2.9	6.7	0.0	1.5	22.6	3.1	6.7	3.9	4.6
LnGrp Delay(d),s/veh	96.6	52.0	55.8	87.1	56.7	0.0	77.1	51.7	32.8	94.5	27.6	28.6
LnGrp LOS	F	D	E	F	E		E	D	C	F	C	C
Approach Vol, veh/h		1975			654			1262			602	
Approach Delay, s/veh		67.3			62.5			50.8			43.0	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	53.4	10.8	69.2	33.7	33.7	19.1	60.9
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	7.0	49.5	21.0	49.0	27.2	29.8	15.0	* 56
Max Q Clear Time (g_c+I1), s	7.2	36.8	4.8	12.3	29.2	16.1	13.1	45.7
Green Ext Time (p_c), s	0.0	9.1	0.0	4.7	0.0	4.2	0.0	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	58.7
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1243	144	256	372	325	181	109	675	106	179	557
Future Volume (veh/h)	195	1243	144	256	372	325	181	109	675	106	179	557
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	201	1281	148	264	384	0	187	112	696	109	185	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	234	1772	552	412	626	532	246	549	819	108	766	603
Arrive On Green	0.13	0.35	0.35	0.12	0.34	0.00	0.14	0.30	0.30	0.06	0.22	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2754	1757	3505	2760
Grp Volume(v), veh/h	201	1281	148	264	384	0	187	112	696	109	185	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1377	1757	1752	1380
Q Serve(g_s), s	11.1	21.9	6.7	7.3	17.2	0.0	10.2	4.5	23.6	6.1	4.3	0.0
Cycle Q Clear(g_c), s	11.1	21.9	6.7	7.3	17.2	0.0	10.2	4.5	23.6	6.1	4.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	1772	552	412	626	532	246	549	819	108	766	603
V/C Ratio(X)	0.86	0.72	0.27	0.64	0.61	0.00	0.76	0.20	0.85	1.01	0.24	0.00
Avail Cap(c_a), veh/h	395	2259	703	447	654	556	266	924	1380	108	1441	1135
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.1	27.9	23.0	41.6	27.3	0.0	41.0	26.1	32.8	46.6	32.0	0.0
Incr Delay (d2), s/veh	4.2	0.9	0.3	2.8	1.8	0.0	9.6	0.2	2.7	89.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	10.2	2.9	3.6	9.1	0.0	5.6	2.3	9.3	5.6	2.1	0.0
LnGrp Delay(d),s/veh	46.3	28.9	23.3	44.3	29.1	0.0	50.6	26.3	35.4	135.7	32.2	0.0
LnGrp LOS	D	C	C	D	C		D	C	D	F	C	
Approach Vol, veh/h		1630			648			995			294	
Approach Delay, s/veh		30.5			35.3			37.3			70.6	
Approach LOS		C			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	40.0	17.6	25.9	16.9	38.8	9.8	33.7
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	19.3	23.9	12.2	6.3	13.1	19.2	8.1	25.6
Green Ext Time (p_c), s	0.3	11.0	0.1	1.7	0.2	2.3	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	36.6
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1356	0	0	741	324	118	0	286	0	0	0
Future Volume (veh/h)	0	1356	0	0	741	324	118	0	286	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	1443	0	0	788	0	126	0	304			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	2083	932	0	2083	932	809	0	372			
Arrive On Green	0.00	0.59	0.00	0.00	0.59	0.00	0.24	0.00	0.24			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	1443	0	0	788	0	126	0	304			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	15.3	0.0	0.0	6.4	0.0	1.6	0.0	9.9			
Cycle Q Clear(g_c), s	0.0	15.3	0.0	0.0	6.4	0.0	1.6	0.0	9.9			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2083	932	0	2083	932	809	0	372			
V/C Ratio(X)	0.00	0.69	0.00	0.00	0.38	0.00	0.16	0.00	0.82			
Avail Cap(c_a), veh/h	0	2083	932	0	2083	932	1502	0	691			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.6	0.0	0.0	5.7	0.0	16.3	0.0	19.5			
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.5	0.0	0.1	0.0	3.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	7.5	0.0	0.0	3.2	0.0	0.7	0.0	4.6			
LnGrp Delay(d),s/veh	0.0	8.7	0.0	0.0	6.3	0.0	16.4	0.0	22.8			
LnGrp LOS		A			A		B		C			
Approach Vol, veh/h		1443			788			430				
Approach Delay, s/veh		8.7			6.3			20.9				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		17.0		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		17.3		11.9		8.4		
Green Ext Time (p_c), s		10.5		0.9		7.5		

Intersection Summary	
HCM 2010 Ctrl Delay	9.9
HCM 2010 LOS	A

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/24/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	243	0	0	353	0
Future Volume (veh/h)	17	243	0	0	353	0
Number	7	4			1	16
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	22	308			447	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	0.79	0.79			0.79	0.79
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	130	1909			0	0
Arrive On Green	0.56	0.56			0.00	0.00
Sat Flow, veh/h	230	3483			0	
Grp Volume(v), veh/h	177	153			0.0	
Grp Sat Flow(s),veh/h/ln	1851	1770				
Q Serve(g_s), s	0.5	0.5				
Cycle Q Clear(g_c), s	0.5	0.5				
Prop In Lane	0.12					
Lane Grp Cap(c), veh/h	1042	996				
V/C Ratio(X)	0.17	0.15				
Avail Cap(c_a), veh/h	7139	6824				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.2	1.2				
Incr Delay (d2), s/veh	0.1	0.1				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.3	0.2				
LnGrp Delay(d),s/veh	1.3	1.3				
LnGrp LOS	A	A				
Approach Vol, veh/h		330				
Approach Delay, s/veh		1.3				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				11.7				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				45.0				
Max Q Clear Time (g_c+I1), s				2.5				
Green Ext Time (p_c), s				2.1				

Intersection Summary	
HCM 2010 Ctrl Delay	1.3
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	21	50	48	49	31	218	135	249	435	66
Future Volume (veh/h)	0	1	21	50	48	49	31	218	135	249	435	66
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	1	24	56	56	56	35	248	0	283	494	75
Adj No. of Lanes	1	1	1	1	1	2	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	893	759	106	1084	1843	170	338	246	363	723	324
Arrive On Green	0.00	0.48	0.48	0.06	0.58	0.58	0.10	0.10	0.00	0.20	0.20	0.20
Sat Flow, veh/h	1774	1863	1583	1774	1863	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	1	24	56	56	56	35	248	0	283	494	75
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.0	0.9	3.4	1.4	0.8	2.0	7.5	0.0	16.6	14.2	4.4
Cycle Q Clear(g_c), s	0.0	0.0	0.9	3.4	1.4	0.8	2.0	7.5	0.0	16.6	14.2	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	893	759	106	1084	1843	170	338	246	363	723	324
V/C Ratio(X)	0.00	0.00	0.03	0.53	0.05	0.03	0.21	0.73	0.00	0.78	0.68	0.23
Avail Cap(c_a), veh/h	177	893	759	150	1084	1843	295	589	358	529	1055	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	14.9	15.1	50.2	9.9	9.8	45.9	48.4	0.0	41.4	40.5	36.6
Incr Delay (d2), s/veh	0.0	0.0	0.1	3.8	0.0	0.0	0.6	3.1	0.0	4.6	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	1.8	0.7	0.4	1.0	3.8	0.0	8.6	7.0	1.9
LnGrp Delay(d),s/veh	0.0	14.9	15.2	54.0	9.9	9.8	46.5	51.4	0.0	46.0	41.6	36.9
LnGrp LOS		B	B	D	A	A	D	D		D	D	D
Approach Vol, veh/h		25			168			283			852	
Approach Delay, s/veh		15.2			24.6			50.8			42.7	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	57.3		26.7	10.0	68.6		14.7
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	9.3	31.9		* 33	* 11	30.2		18.3
Max Q Clear Time (g_c+I1), s	5.4	2.9		18.6	0.0	3.4		9.5
Green Ext Time (p_c), s	0.0	0.0		3.9	0.0	0.5		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.6
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 EB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	97	76	0	0	0	0	140	199	645	382	0
Future Volume (veh/h)	119	97	76	0	0	0	0	140	199	645	382	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	119	124	84				0	154	219	709	420	0
Adj No. of Lanes	1	1	1				0	1	2	1	2	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	249	261	221				0	362	616	634	2270	0
Arrive On Green	0.14	0.14	0.14				0.00	0.20	0.20	0.36	0.65	0.00
Sat Flow, veh/h	1757	1845	1561				0	1845	3136	1757	3597	0
Grp Volume(v), veh/h	119	124	84				0	154	219	709	420	0
Grp Sat Flow(s),veh/h/ln	1757	1845	1561				0	1845	1568	1757	1752	0
Q Serve(g_s), s	2.1	2.1	1.6				0.0	2.4	2.0	12.0	1.6	0.0
Cycle Q Clear(g_c), s	2.1	2.1	1.6				0.0	2.4	2.0	12.0	1.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	249	261	221				0	362	616	634	2270	0
V/C Ratio(X)	0.48	0.47	0.38				0.00	0.42	0.36	1.12	0.19	0.00
Avail Cap(c_a), veh/h	1295	1359	1151				0	1027	1745	634	3532	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.1	13.1	12.9				0.0	11.7	11.5	10.6	2.3	0.0
Incr Delay (d2), s/veh	0.5	0.5	0.4				0.0	1.1	0.5	72.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.1	0.7				0.0	1.4	0.9	18.5	0.8	0.0
LnGrp Delay(d),s/veh	13.7	13.6	13.3				0.0	12.8	12.0	83.4	2.4	0.0
LnGrp LOS	B	B	B					B	B	F	A	
Approach Vol, veh/h		327						373			1129	
Approach Delay, s/veh		13.6						12.4			53.2	
Approach LOS		B						B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	10.5		7.7		25.5		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.0	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	14.0	4.4		4.1		3.6		
Green Ext Time (p_c), s	0.0	2.1		0.7		3.0		

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	102	5	150	52	217	0	0	927	337
Future Volume (veh/h)	0	0	0	102	5	150	52	217	0	0	927	337
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				111	5	163	57	236	0	0	1008	366
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				294	13	273	123	2283	0	0	1869	793
Arrive On Green				0.17	0.17	0.17	0.07	0.65	0.00	0.00	0.51	0.51
Sat Flow, veh/h				1685	76	1565	1757	3597	0	0	3689	1565
Grp Volume(v), veh/h				116	0	163	57	236	0	0	1008	366
Grp Sat Flow(s),veh/h/ln				1760	0	1565	1757	1752	0	0	1845	1565
Q Serve(g_s), s				2.3	0.0	3.9	1.3	1.0	0.0	0.0	7.5	6.1
Cycle Q Clear(g_c), s				2.3	0.0	3.9	1.3	1.0	0.0	0.0	7.5	6.1
Prop In Lane				0.96		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				307	0	273	123	2283	0	0	1869	793
V/C Ratio(X)				0.38	0.00	0.60	0.46	0.10	0.00	0.00	0.54	0.46
Avail Cap(c_a), veh/h				1204	0	1071	350	3357	0	0	2524	1071
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				14.7	0.0	15.3	18.0	2.6	0.0	0.0	6.7	6.4
Incr Delay (d2), s/veh				0.6	0.0	1.6	1.0	0.0	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	1.7	0.6	0.5	0.0	0.0	3.9	2.7
LnGrp Delay(d),s/veh				15.2	0.0	16.8	19.0	2.6	0.0	0.0	7.1	7.0
LnGrp LOS				B		B	B	A			A	A
Approach Vol, veh/h					279			293			1374	
Approach Delay, s/veh					16.2			5.8			7.1	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		30.2			5.8	24.4		10.0
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		38.5			8.0	27.5		27.5
Max Q Clear Time (g_c+I1), s		3.0			3.3	9.5		5.9
Green Ext Time (p_c), s		1.6			0.0	10.9		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	8.2
HCM 2010 LOS	A

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	153	53	60	123	98	80
Future Volume (veh/h)	153	53	60	123	98	80
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	166	58	65	134	107	87
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	358	319	195	403	655	680
Arrive On Green	0.20	0.20	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	1583	536	1104	1179	1863
Grp Volume(v), veh/h	166	58	0	199	107	87
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1640	1179	1863
Q Serve(g_s), s	1.8	0.7	0.0	1.9	1.6	0.7
Cycle Q Clear(g_c), s	1.8	0.7	0.0	1.9	3.5	0.7
Prop In Lane	1.00	1.00		0.67	1.00	
Lane Grp Cap(c), veh/h	358	319	0	598	655	680
V/C Ratio(X)	0.46	0.18	0.00	0.33	0.16	0.13
Avail Cap(c_a), veh/h	2023	1806	0	2244	1838	2549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	7.3	0.0	5.0	6.3	4.6
Incr Delay (d2), s/veh	0.9	0.3	0.0	0.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.3	0.0	0.9	0.5	0.4
LnGrp Delay(d),s/veh	8.6	7.5	0.0	5.4	6.4	4.7
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	224		199			194
Approach Delay, s/veh	8.4		5.4			5.7
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.0				13.0		8.9
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		3.9				5.5		3.8
Green Ext Time (p_c), s		1.2				0.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	86	1	13	45	46	4	9	27	74	4	8
Future Vol, veh/h	4	86	1	13	45	46	4	9	27	74	4	8
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	90	1	14	47	48	4	9	28	77	4	8
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.5	8.6	8.1	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	10%	4%	0%	12%	95%	0%
Vol Thru, %	22%	96%	0%	43%	5%	0%
Vol Right, %	68%	0%	100%	44%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	90	1	104	78	8
LT Vol	4	4	0	13	74	0
Through Vol	9	86	0	45	4	0
RT Vol	27	0	1	46	0	8
Lane Flow Rate	42	94	1	108	81	8
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.055	0.13	0.001	0.143	0.125	0.01
Departure Headway (Hd)	4.779	5.001	4.276	4.762	5.553	4.374
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	751	719	839	755	648	820
Service Time	2.8	2.717	1.992	2.778	3.271	2.092
HCM Lane V/C Ratio	0.056	0.131	0.001	0.143	0.125	0.01
HCM Control Delay	8.1	8.5	7	8.6	9.1	7.1
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.4	0	0.5	0.4	0

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	213	173	41	92	27
Future Vol, veh/h	13	213	173	41	92	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	232	188	45	100	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	233	0	-	0	355	117
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	144	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1332	-	-	-	617	913
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	868	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1332	-	-	-	610	913
Mov Cap-2 Maneuver	-	-	-	-	610	-
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	868	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1332	-	-	-	610	913
HCM Lane V/C Ratio	0.011	-	-	-	0.164	0.032
HCM Control Delay (s)	7.7	-	-	-	12.1	9.1
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	626	11	203	1310	199	22	347	123	147	753	699
Future Volume (veh/h)	256	626	11	203	1310	199	22	347	123	147	753	699
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	272	666	12	216	1394	0	23	369	131	156	801	744
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	1767	32	202	1592	496	52	1016	455	180	1272	569
Arrive On Green	0.09	0.34	0.34	0.06	0.31	0.00	0.03	0.29	0.29	0.10	0.36	0.36
Sat Flow, veh/h	3442	5144	93	3442	5085	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	272	439	239	216	1394	0	23	369	131	156	801	744
Grp Sat Flow(s),veh/h/ln	1721	1695	1846	1721	1695	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	10.6	13.3	13.3	8.0	35.4	0.0	1.7	11.3	8.8	11.8	25.5	49.0
Cycle Q Clear(g_c), s	10.6	13.3	13.3	8.0	35.4	0.0	1.7	11.3	8.8	11.8	25.5	49.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	319	1165	634	202	1592	496	52	1016	455	180	1272	569
V/C Ratio(X)	0.85	0.38	0.38	1.07	0.88	0.00	0.44	0.36	0.29	0.87	0.63	1.31
Avail Cap(c_a), veh/h	331	1206	657	202	1638	510	273	1389	621	221	1272	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	33.7	33.8	64.2	44.3	0.0	65.1	38.7	37.8	60.3	36.2	43.7
Incr Delay (d2), s/veh	17.9	0.3	0.6	83.0	5.9	0.0	4.3	0.4	0.6	23.4	1.3	150.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	6.3	6.9	6.1	17.4	0.0	0.9	5.6	3.9	7.0	12.7	45.2
LnGrp Delay(d),s/veh	78.8	34.1	34.4	147.1	50.2	0.0	69.4	39.0	38.4	83.7	37.4	194.3
LnGrp LOS	E	C	C	F	D		E	D	D	F	D	F
Approach Vol, veh/h		950			1610			523			1701	
Approach Delay, s/veh		47.0			63.2			40.2			110.3	
Approach LOS		D			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	54.3	10.0	57.0	19.2	50.2	19.9	47.1
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	8.0	48.5	21.0	49.0	13.1	43.9	17.0	* 54
Max Q Clear Time (g_c+I1), s	10.0	15.3	3.7	51.0	12.6	37.4	13.8	13.3
Green Ext Time (p_c), s	0.0	7.6	0.0	0.0	0.0	5.3	0.1	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	74.2
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	732	200	367	425	51	77	27	256	30	562	1269
Future Volume (veh/h)	156	732	200	367	425	51	77	27	256	30	562	1269
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	168	787	215	395	457	0	83	29	275	32	604	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	201	1985	618	392	728	619	202	581	862	49	799	629
Arrive On Green	0.11	0.39	0.39	0.12	0.39	0.00	0.11	0.31	0.31	0.03	0.23	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2739	1757	3505	2760
Grp Volume(v), veh/h	168	787	215	395	457	0	83	29	275	32	604	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1369	1757	1752	1380
Q Serve(g_s), s	10.6	12.7	10.9	13.0	22.5	0.0	5.0	1.2	8.6	2.0	18.1	0.0
Cycle Q Clear(g_c), s	10.6	12.7	10.9	13.0	22.5	0.0	5.0	1.2	8.6	2.0	18.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	1985	618	392	728	619	202	581	862	49	799	629
V/C Ratio(X)	0.83	0.40	0.35	1.01	0.63	0.00	0.41	0.05	0.32	0.65	0.76	0.00
Avail Cap(c_a), veh/h	347	1985	618	392	728	619	233	812	1206	95	1267	997
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.9	24.6	24.0	49.9	27.5	0.0	46.4	26.9	29.5	54.3	40.7	0.0
Incr Delay (d2), s/veh	3.5	0.6	1.5	47.1	4.1	0.0	0.5	0.0	0.2	5.3	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	5.9	4.9	8.6	12.2	0.0	2.4	0.6	3.3	1.1	9.0	0.0
LnGrp Delay(d),s/veh	52.4	25.2	25.6	97.0	31.6	0.0	46.9	27.0	29.7	59.6	42.8	0.0
LnGrp LOS	D	C	C	F	C		D	C	C	E	D	
Approach Vol, veh/h		1170			852			387			636	
Approach Delay, s/veh		29.1			61.9			33.2			43.6	
Approach LOS		C			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	49.6	16.7	29.9	16.6	49.7	6.9	39.7
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	15.0	14.7	7.0	20.1	12.6	24.5	4.0	10.6
Green Ext Time (p_c), s	0.0	8.0	0.0	5.6	0.1	2.3	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	41.8
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	271	17	0	564	26	209	0	134	0	0	0
Future Volume (veh/h)	0	271	17	0	564	26	209	0	134	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	295	0	0	613	0	227	0	146			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	2331	1043	0	2331	1043	499	0	230			
Arrive On Green	0.00	0.66	0.00	0.00	0.66	0.00	0.15	0.00	0.15			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	295	0	0	613	0	227	0	146			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	1.5	0.0	0.0	3.4	0.0	2.9	0.0	4.2			
Cycle Q Clear(g_c), s	0.0	1.5	0.0	0.0	3.4	0.0	2.9	0.0	4.2			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2331	1043	0	2331	1043	499	0	230			
V/C Ratio(X)	0.00	0.13	0.00	0.00	0.26	0.00	0.45	0.00	0.64			
Avail Cap(c_a), veh/h	0	2331	1043	0	2331	1043	1680	0	773			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	3.0	0.0	0.0	3.3	0.0	18.8	0.0	19.4			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.0	0.5	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.0	0.0	1.7	0.0	1.4	0.0	2.0			
LnGrp Delay(d),s/veh	0.0	3.1	0.0	0.0	3.6	0.0	19.3	0.0	21.5			
LnGrp LOS		A			A		B		C			
Approach Vol, veh/h		295			613			373				
Approach Delay, s/veh		3.1			3.6			20.2				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		11.3		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		3.5		6.2		5.4		
Green Ext Time (p_c), s		2.6		0.9		5.8		

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/24/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	1058	0	0	165	0
Future Volume (veh/h)	4	1058	0	0	165	0
Number	7	4			5	12
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	4	1189			185	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	0.89	0.89			0.89	0.89
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	8	2476			0	0
Arrive On Green	0.68	0.68			0.00	0.00
Sat Flow, veh/h	12	3713			0	
Grp Volume(v), veh/h	640	553			0.0	
Grp Sat Flow(s),veh/h/ln	1862	1770				
Q Serve(g_s), s	2.7	2.3				
Cycle Q Clear(g_c), s	2.7	2.3				
Prop In Lane	0.01					
Lane Grp Cap(c), veh/h	1274	1210				
V/C Ratio(X)	0.50	0.46				
Avail Cap(c_a), veh/h	2008	1908				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.2	1.2				
Incr Delay (d2), s/veh	0.3	0.3				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	1.4	1.2				
LnGrp Delay(d),s/veh	1.5	1.4				
LnGrp LOS	A	A				
Approach Vol, veh/h		1193				
Approach Delay, s/veh		1.5				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				16.1				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				17.4				
Max Q Clear Time (g_c+I1), s				4.7				
Green Ext Time (p_c), s				6.4				

Intersection Summary	
HCM 2010 Ctrl Delay	1.5
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	18	71	126	4	373	8	1421	63	367	384	5
Future Volume (veh/h)	75	18	71	126	4	373	8	1421	63	367	384	5
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	52	65	81	147	0	424	9	1615	0	417	436	6
Adj No. of Lanes	1	1	1	2	0	2	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	398	338	193	0	643	707	1411	718	382	762	341
Arrive On Green	0.06	0.21	0.21	0.05	0.00	0.20	0.40	0.40	0.00	0.22	0.22	0.22
Sat Flow, veh/h	1774	1863	1583	3548	0	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	52	65	81	147	0	424	9	1615	0	417	436	6
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.2	4.3	6.4	6.1	0.0	18.5	0.5	59.8	0.0	32.3	16.5	0.4
Cycle Q Clear(g_c), s	4.2	4.3	6.4	6.1	0.0	18.5	0.5	59.8	0.0	32.3	16.5	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	398	338	193	0	643	707	1411	718	382	762	341
V/C Ratio(X)	0.45	0.16	0.24	0.76	0.00	0.66	0.01	1.14	0.00	1.09	0.57	0.02
Avail Cap(c_a), veh/h	130	398	338	229	0	643	707	1411	718	382	762	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.6	48.1	48.9	69.9	0.0	55.0	27.3	45.1	0.0	58.9	52.7	46.4
Incr Delay (d2), s/veh	2.7	0.9	1.7	11.6	0.0	2.5	0.0	74.0	0.0	72.9	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.3	2.9	3.3	0.0	8.3	0.2	43.7	0.0	23.6	8.2	0.2
LnGrp Delay(d),s/veh	70.3	49.0	50.6	81.6	0.0	57.5	27.3	119.1	0.0	131.8	53.7	46.4
LnGrp LOS	E	D	D	F		E	C	F		F	D	D
Approach Vol, veh/h		198			571			1624			859	
Approach Delay, s/veh		55.2			63.7			118.5			91.6	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.9	36.6		36.5	14.4	35.1		64.0
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	8.3	30.5		* 32	* 11	29.2		59.8
Max Q Clear Time (g_c+I1), s	18.1	8.4		34.3	6.2	20.5		61.8
Green Ext Time (p_c), s	0.1	0.5		0.0	0.0	1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	97.9
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 Ramps/I-580 EB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	695	74	87	0	0	0	0	244	210	276	275	0
Future Volume (veh/h)	695	74	87	0	0	0	0	244	210	276	275	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	763	0	89				0	338	154	282	281	0
Adj No. of Lanes	2	0	1				0	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1048	0	467				0	829	352	356	1786	0
Arrive On Green	0.30	0.00	0.30				0.00	0.22	0.22	0.20	0.51	0.00
Sat Flow, veh/h	3514	0	1565				0	3689	1568	1757	3597	0
Grp Volume(v), veh/h	763	0	89				0	338	154	282	281	0
Grp Sat Flow(s),veh/h/ln	1757	0	1565				0	1845	1568	1757	1752	0
Q Serve(g_s), s	7.1	0.0	1.5				0.0	2.8	3.1	5.6	1.6	0.0
Cycle Q Clear(g_c), s	7.1	0.0	1.5				0.0	2.8	3.1	5.6	1.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1048	0	467				0	829	352	356	1786	0
V/C Ratio(X)	0.73	0.00	0.19				0.00	0.41	0.44	0.79	0.16	0.00
Avail Cap(c_a), veh/h	2364	0	1053				0	1875	797	579	3225	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.5	0.0	9.5				0.0	12.0	12.1	13.8	4.8	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.1				0.0	0.5	1.2	3.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.7				0.0	1.5	1.4	3.0	0.8	0.0
LnGrp Delay(d),s/veh	11.8	0.0	9.6				0.0	12.5	13.3	16.8	4.8	0.0
LnGrp LOS	B		A					B	B	B	A	
Approach Vol, veh/h		852						492			563	
Approach Delay, s/veh		11.6						12.8			10.8	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	10.4	12.2		13.9		22.6		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.6	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	7.6	5.1		9.1		3.6		
Green Ext Time (p_c), s	0.3	3.1		1.6		1.9		

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	194	3	584	65	886	0	0	366	96
Future Volume (veh/h)	0	0	0	194	3	584	65	886	0	0	366	96
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				206	3	621	69	943	0	0	389	102
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				799	12	722	131	1387	0	0	957	405
Arrive On Green				0.46	0.46	0.46	0.07	0.40	0.00	0.00	0.26	0.26
Sat Flow, veh/h				1733	25	1567	1757	3597	0	0	3689	1563
Grp Volume(v), veh/h				209	0	621	69	943	0	0	389	102
Grp Sat Flow(s),veh/h/ln				1758	0	1567	1757	1752	0	0	1845	1563
Q Serve(g_s), s				3.5	0.0	17.3	1.8	10.9	0.0	0.0	4.3	2.5
Cycle Q Clear(g_c), s				3.5	0.0	17.3	1.8	10.9	0.0	0.0	4.3	2.5
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				810	0	722	131	1387	0	0	957	405
V/C Ratio(X)				0.26	0.00	0.86	0.53	0.68	0.00	0.00	0.41	0.25
Avail Cap(c_a), veh/h				991	0	883	288	2191	0	0	1475	625
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				8.0	0.0	11.7	21.7	12.2	0.0	0.0	15.0	14.3
Incr Delay (d2), s/veh				0.1	0.0	6.9	1.2	0.6	0.0	0.0	0.4	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.7	0.0	8.6	0.9	5.2	0.0	0.0	2.2	1.1
LnGrp Delay(d),s/veh				8.2	0.0	18.7	22.9	12.8	0.0	0.0	15.3	14.8
LnGrp LOS				A		B	C	B			B	B
Approach Vol, veh/h					830			1012			491	
Approach Delay, s/veh					16.0			13.5			15.2	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.3			6.6	16.7		25.5
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		30.5			8.0	19.5		27.5
Max Q Clear Time (g_c+I1), s		12.9			3.8	6.3		19.3
Green Ext Time (p_c), s		6.4			0.0	3.2		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	87	116	182	148	90	103
Future Volume (veh/h)	87	116	182	148	90	103
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	95	126	198	161	98	112
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	324	289	366	298	555	716
Arrive On Green	0.18	0.18	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1774	1583	952	774	1018	1863
Grp Volume(v), veh/h	95	126	0	359	98	112
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1726	1018	1863
Q Serve(g_s), s	1.0	1.6	0.0	3.5	1.8	0.9
Cycle Q Clear(g_c), s	1.0	1.6	0.0	3.5	5.4	0.9
Prop In Lane	1.00	1.00		0.45	1.00	
Lane Grp Cap(c), veh/h	324	289	0	664	555	716
V/C Ratio(X)	0.29	0.44	0.00	0.54	0.18	0.16
Avail Cap(c_a), veh/h	2022	1805	0	2361	1557	2548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	8.0	0.0	5.2	7.3	4.4
Incr Delay (d2), s/veh	0.2	0.4	0.0	0.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.0	1.7	0.5	0.5
LnGrp Delay(d),s/veh	7.9	8.4	0.0	5.9	7.5	4.5
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	221		359			210
Approach Delay, s/veh	8.2		5.9			5.9
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.4				13.4		8.5
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		5.5				7.4		3.6
Green Ext Time (p_c), s		2.4				1.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	42	3	7	101	186	9	21	11	136	12	3
Future Vol, veh/h	10	42	3	7	101	186	9	21	11	136	12	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	45	3	8	109	200	10	23	12	146	13	3
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.7	11.5	9.1	10.8
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	22%	19%	0%	2%	92%	0%
Vol Thru, %	51%	81%	0%	34%	8%	0%
Vol Right, %	27%	0%	100%	63%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	52	3	294	148	3
LT Vol	9	10	0	7	136	0
Through Vol	21	42	0	101	12	0
RT Vol	11	0	3	186	0	3
Lane Flow Rate	44	56	3	316	159	3
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.069	0.086	0.004	0.426	0.264	0.004
Departure Headway (Hd)	5.615	5.55	4.747	4.85	5.973	4.805
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	633	642	749	740	598	739
Service Time	3.694	3.312	2.508	2.892	3.739	2.57
HCM Lane V/C Ratio	0.07	0.087	0.004	0.427	0.266	0.004
HCM Control Delay	9.1	8.8	7.5	11.5	10.9	7.6
HCM Lane LOS	A	A	A	B	B	A
HCM 95th-tile Q	0.2	0.3	0	2.1	1.1	0

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	220	172	91	70	15
Future Vol, veh/h	31	220	172	91	70	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	229	179	95	73	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	274	0	-	0	406	137
Stage 1	-	-	-	-	227	-
Stage 2	-	-	-	-	179	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1286	-	-	-	573	886
Stage 1	-	-	-	-	789	-
Stage 2	-	-	-	-	834	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1286	-	-	-	559	886
Mov Cap-2 Maneuver	-	-	-	-	559	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1286	-	-	-	559	886
HCM Lane V/C Ratio	0.025	-	-	-	0.13	0.018
HCM Control Delay (s)	7.9	-	-	-	12.4	9.1
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	601	1271	8	117	536	470	32	1052	102	128	279	162
Future Volume (veh/h)	601	1271	8	117	536	470	32	1052	102	128	279	162
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	639	1352	9	124	570	0	34	1119	109	136	297	172
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	633	1632	11	163	916	285	58	1267	565	158	1466	655
Arrive On Green	0.18	0.31	0.31	0.05	0.18	0.00	0.03	0.36	0.36	0.09	0.41	0.41
Sat Flow, veh/h	3442	5212	35	3442	5085	1583	1774	3539	1579	1774	3539	1580
Grp Volume(v), veh/h	639	879	482	124	570	0	34	1119	109	136	297	172
Grp Sat Flow(s),veh/h/ln	1721	1695	1857	1721	1695	1583	1774	1770	1579	1774	1770	1580
Q Serve(g_s), s	27.2	35.6	35.6	5.3	15.3	0.0	2.8	43.9	7.0	11.2	7.9	10.6
Cycle Q Clear(g_c), s	27.2	35.6	35.6	5.3	15.3	0.0	2.8	43.9	7.0	11.2	7.9	10.6
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	633	1062	581	163	916	285	58	1267	565	158	1466	655
V/C Ratio(X)	1.01	0.83	0.83	0.76	0.62	0.00	0.59	0.88	0.19	0.86	0.20	0.26
Avail Cap(c_a), veh/h	633	1134	621	163	1024	319	252	1327	592	180	1466	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.4	47.1	47.1	69.7	56.0	0.0	70.6	44.6	32.8	66.5	27.7	28.5
Incr Delay (d2), s/veh	38.3	5.5	9.5	18.1	1.4	0.0	6.9	7.6	0.3	28.5	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.3	17.4	19.7	2.9	7.3	0.0	1.5	22.8	3.1	6.8	3.9	4.7
LnGrp Delay(d),s/veh	98.7	52.6	56.7	87.8	57.5	0.0	77.5	52.2	33.1	95.0	27.8	28.8
LnGrp LOS	F	D	E	F	E		E	D	C	F	C	C
Approach Vol, veh/h		2000			694			1262			605	
Approach Delay, s/veh		68.3			62.9			51.2			43.2	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	53.8	10.8	69.3	33.7	34.1	19.2	61.0
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	7.0	49.5	21.0	49.0	27.2	29.8	15.0	* 56
Max Q Clear Time (g_c+I1), s	7.3	37.6	4.8	12.6	29.2	17.3	13.2	45.9
Green Ext Time (p_c), s	0.0	8.7	0.0	4.8	0.0	4.3	0.0	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.4
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	1256	144	256	391	325	181	109	675	106	179	576
Future Volume (veh/h)	204	1256	144	256	391	325	181	109	675	106	179	576
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	210	1295	148	264	403	0	187	112	696	109	185	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	243	1782	555	410	619	526	245	548	818	107	766	603
Arrive On Green	0.14	0.35	0.35	0.12	0.34	0.00	0.14	0.30	0.30	0.06	0.22	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2754	1757	3505	2760
Grp Volume(v), veh/h	210	1295	148	264	403	0	187	112	696	109	185	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1377	1757	1752	1380
Q Serve(g_s), s	11.7	22.3	6.7	7.4	18.5	0.0	10.2	4.5	23.7	6.1	4.3	0.0
Cycle Q Clear(g_c), s	11.7	22.3	6.7	7.4	18.5	0.0	10.2	4.5	23.7	6.1	4.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1782	555	410	619	526	245	548	818	107	766	603
V/C Ratio(X)	0.86	0.73	0.27	0.64	0.65	0.00	0.76	0.20	0.85	1.01	0.24	0.00
Avail Cap(c_a), veh/h	393	2248	700	444	651	554	264	920	1373	107	1434	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.0	28.0	23.0	41.8	28.1	0.0	41.3	26.2	33.0	46.8	32.1	0.0
Incr Delay (d2), s/veh	6.1	1.0	0.3	2.8	2.3	0.0	9.9	0.2	2.7	90.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	10.5	2.9	3.6	9.8	0.0	5.6	2.3	9.3	5.6	2.1	0.0
LnGrp Delay(d),s/veh	48.1	29.0	23.3	44.6	30.5	0.0	51.2	26.4	35.7	137.5	32.4	0.0
LnGrp LOS	D	C	C	D	C		D	C	D	F	C	
Approach Vol, veh/h		1653			667			995			294	
Approach Delay, s/veh		30.9			36.1			37.6			71.3	
Approach LOS		C			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	40.4	17.6	26.0	17.5	38.6	9.8	33.8
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	19.4	24.3	12.2	6.3	13.7	20.5	8.1	25.7
Green Ext Time (p_c), s	0.3	11.0	0.1	1.7	0.2	2.3	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	37.0
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1358	11	0	744	324	134	0	286	0	0	0
Future Volume (veh/h)	0	1358	11	0	744	324	134	0	286	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	1445	0	0	791	0	143	0	304			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	2081	931	0	2081	931	811	0	373			
Arrive On Green	0.00	0.59	0.00	0.00	0.59	0.00	0.24	0.00	0.24			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	1445	0	0	791	0	143	0	304			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	15.4	0.0	0.0	6.4	0.0	1.8	0.0	9.9			
Cycle Q Clear(g_c), s	0.0	15.4	0.0	0.0	6.4	0.0	1.8	0.0	9.9			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2081	931	0	2081	931	811	0	373			
V/C Ratio(X)	0.00	0.69	0.00	0.00	0.38	0.00	0.18	0.00	0.81			
Avail Cap(c_a), veh/h	0	2081	931	0	2081	931	1500	0	690			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.6	0.0	0.0	5.8	0.0	16.4	0.0	19.5			
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.5	0.0	0.1	0.0	3.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	7.6	0.0	0.0	3.2	0.0	0.8	0.0	4.6			
LnGrp Delay(d),s/veh	0.0	8.7	0.0	0.0	6.3	0.0	16.5	0.0	22.7			
LnGrp LOS		A			A		B		C			
Approach Vol, veh/h		1445			791			447				
Approach Delay, s/veh		8.7			6.3			20.7				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		17.1		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		17.4		11.9		8.4		
Green Ext Time (p_c), s		10.5		1.0		7.5		

Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/24/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	254	0	0	372	0
Future Volume (veh/h)	18	254	0	0	372	0
Number	7	4			1	16
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	23	322			471	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	0.79	0.79			0.79	0.79
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	132	1938			0	0
Arrive On Green	0.57	0.57			0.00	0.00
Sat Flow, veh/h	230	3483			0	
Grp Volume(v), veh/h	185	160			0.0	
Grp Sat Flow(s),veh/h/ln	1851	1770				
Q Serve(g_s), s	0.6	0.5				
Cycle Q Clear(g_c), s	0.6	0.5				
Prop In Lane	0.12					
Lane Grp Cap(c), veh/h	1058	1011				
V/C Ratio(X)	0.17	0.16				
Avail Cap(c_a), veh/h	6998	6689				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.2	1.2				
Incr Delay (d2), s/veh	0.1	0.1				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.3	0.2				
LnGrp Delay(d),s/veh	1.3	1.3				
LnGrp LOS	A	A				
Approach Vol, veh/h		345				
Approach Delay, s/veh		1.3				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				11.9				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				45.0				
Max Q Clear Time (g_c+I1), s				2.6				
Green Ext Time (p_c), s				2.2				

Intersection Summary	
HCM 2010 Ctrl Delay	1.3
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	23	53	51	52	33	228	143	254	456	70
Future Volume (veh/h)	0	2	23	53	51	52	33	228	143	254	456	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	2	26	59	59	59	38	259	0	289	518	80
Adj No. of Lanes	1	1	1	1	1	2	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	877	745	108	1070	1818	176	350	253	370	738	330
Arrive On Green	0.00	0.47	0.47	0.06	0.57	0.57	0.10	0.10	0.00	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	1583	1774	1863	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	2	26	59	59	59	38	259	0	289	518	80
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.1	1.0	3.6	1.5	0.9	2.2	7.8	0.0	16.9	14.9	4.6
Cycle Q Clear(g_c), s	0.0	0.1	1.0	3.6	1.5	0.9	2.2	7.8	0.0	16.9	14.9	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	877	745	108	1070	1818	176	350	253	370	738	330
V/C Ratio(X)	0.00	0.00	0.03	0.55	0.06	0.03	0.22	0.74	0.00	0.78	0.70	0.24
Avail Cap(c_a), veh/h	177	877	745	150	1070	1818	295	589	360	529	1055	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.4	15.7	50.2	10.3	10.2	45.6	48.2	0.0	41.1	40.3	36.3
Incr Delay (d2), s/veh	0.0	0.0	0.1	3.9	0.0	0.0	0.6	3.1	0.0	4.8	1.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	1.9	0.8	0.4	1.1	4.0	0.0	8.8	7.4	2.1
LnGrp Delay(d),s/veh	0.0	15.4	15.7	54.1	10.3	10.2	46.2	51.3	0.0	45.9	41.6	36.7
LnGrp LOS		B	B	D	B	B	D	D		D	D	D
Approach Vol, veh/h		28			177			297			887	
Approach Delay, s/veh		15.7			24.9			50.6			42.5	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	56.4		27.2	10.0	67.8		15.1
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	9.3	31.9		* 33	* 11	30.2		18.3
Max Q Clear Time (g_c+I1), s	5.6	3.0		18.9	0.0	3.5		9.8
Green Ext Time (p_c), s	0.0	0.1		4.0	0.0	0.5		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 EB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	103	80	0	0	0	0	147	210	674	401	0
Future Volume (veh/h)	126	103	80	0	0	0	0	147	210	674	401	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	126	130	88				0	162	231	741	441	0
Adj No. of Lanes	1	1	1				0	1	2	1	2	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	257	270	229				0	372	633	625	2265	0
Arrive On Green	0.15	0.15	0.15				0.00	0.20	0.20	0.36	0.65	0.00
Sat Flow, veh/h	1757	1845	1562				0	1845	3136	1757	3597	0
Grp Volume(v), veh/h	126	130	88				0	162	231	741	441	0
Grp Sat Flow(s),veh/h/ln	1757	1845	1562				0	1845	1568	1757	1752	0
Q Serve(g_s), s	2.2	2.2	1.7				0.0	2.6	2.1	12.0	1.7	0.0
Cycle Q Clear(g_c), s	2.2	2.2	1.7				0.0	2.6	2.1	12.0	1.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	257	270	229				0	372	633	625	2265	0
V/C Ratio(X)	0.49	0.48	0.39				0.00	0.44	0.37	1.19	0.19	0.00
Avail Cap(c_a), veh/h	1275	1339	1134				0	1011	1719	625	3479	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.2	13.2	13.0				0.0	11.8	11.6	10.9	2.4	0.0
Incr Delay (d2), s/veh	0.5	0.5	0.4				0.0	1.1	0.5	99.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.2	0.8				0.0	1.4	1.0	22.8	0.8	0.0
LnGrp Delay(d),s/veh	13.8	13.7	13.4				0.0	12.9	12.1	110.2	2.5	0.0
LnGrp LOS	B	B	B					B	B	F	A	
Approach Vol, veh/h		344						393			1182	
Approach Delay, s/veh		13.7						12.4			70.0	
Approach LOS		B						B			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	10.8		7.9		25.8		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.0	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	14.0	4.6		4.2		3.7		
Green Ext Time (p_c), s	0.0	2.2		0.7		3.1		

Intersection Summary	
HCM 2010 Ctrl Delay	48.1
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/24/2020

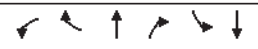


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	108	6	158	55	228	0	0	970	355
Future Volume (veh/h)	0	0	0	108	6	158	55	228	0	0	970	355
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				117	7	172	60	248	0	0	1054	386
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				300	18	282	127	2286	0	0	1876	796
Arrive On Green				0.18	0.18	0.18	0.07	0.65	0.00	0.00	0.51	0.51
Sat Flow, veh/h				1662	99	1565	1757	3597	0	0	3689	1565
Grp Volume(v), veh/h				124	0	172	60	248	0	0	1054	386
Grp Sat Flow(s),veh/h/ln				1762	0	1565	1757	1752	0	0	1845	1565
Q Serve(g_s), s				2.6	0.0	4.2	1.4	1.1	0.0	0.0	8.2	6.7
Cycle Q Clear(g_c), s				2.6	0.0	4.2	1.4	1.1	0.0	0.0	8.2	6.7
Prop In Lane				0.94		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				318	0	282	127	2286	0	0	1876	796
V/C Ratio(X)				0.39	0.00	0.61	0.47	0.11	0.00	0.00	0.56	0.49
Avail Cap(c_a), veh/h				1158	0	1029	336	3226	0	0	2426	1029
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				15.1	0.0	15.8	18.6	2.7	0.0	0.0	7.1	6.7
Incr Delay (d2), s/veh				0.6	0.0	1.6	1.0	0.0	0.0	0.0	0.4	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	1.9	0.7	0.5	0.0	0.0	4.2	3.0
LnGrp Delay(d),s/veh				15.7	0.0	17.4	19.7	2.7	0.0	0.0	7.5	7.4
LnGrp LOS				B		B	B	A			A	A
Approach Vol, veh/h					296			308			1440	
Approach Delay, s/veh					16.7			6.0			7.4	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		31.3			6.0	25.3		10.5
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		38.5			8.0	27.5		27.5
Max Q Clear Time (g_c+I1), s		3.1			3.4	10.2		6.2
Green Ext Time (p_c), s		1.7			0.0	11.0		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	159	54	64	129	103	85
Future Volume (veh/h)	159	54	64	129	103	85
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	173	59	70	140	112	92
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	365	326	199	397	642	676
Arrive On Green	0.21	0.21	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	1583	547	1095	1167	1863
Grp Volume(v), veh/h	173	59	0	210	112	92
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1642	1167	1863
Q Serve(g_s), s	1.9	0.7	0.0	2.1	1.7	0.7
Cycle Q Clear(g_c), s	1.9	0.7	0.0	2.1	3.8	0.7
Prop In Lane	1.00	1.00		0.67	1.00	
Lane Grp Cap(c), veh/h	365	326	0	596	642	676
V/C Ratio(X)	0.47	0.18	0.00	0.35	0.17	0.14
Avail Cap(c_a), veh/h	2013	1797	0	2236	1807	2536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	7.2	0.0	5.1	6.5	4.7
Incr Delay (d2), s/veh	1.0	0.3	0.0	0.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.3	0.0	1.0	0.6	0.4
LnGrp Delay(d),s/veh	8.7	7.5	0.0	5.5	6.6	4.8
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	232		210			204
Approach Delay, s/veh	8.4		5.5			5.8
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.0				13.0		9.0
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		4.1				5.8		3.9
Green Ext Time (p_c), s		1.3				0.9		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	91	2	14	48	47	5	10	29	77	5	9
Future Vol, veh/h	5	91	2	14	48	47	5	10	29	77	5	9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	95	2	15	50	49	5	10	30	80	5	9
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.6	8.7	8.2	9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	11%	5%	0%	13%	94%	0%
Vol Thru, %	23%	95%	0%	44%	6%	0%
Vol Right, %	66%	0%	100%	43%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	44	96	2	109	82	9
LT Vol	5	5	0	14	77	0
Through Vol	10	91	0	48	5	0
RT Vol	29	0	2	47	0	9
Lane Flow Rate	46	100	2	114	85	9
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.062	0.14	0.002	0.152	0.133	0.011
Departure Headway (Hd)	4.834	5.038	4.309	4.806	5.587	4.412
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	742	713	832	747	643	812
Service Time	2.86	2.758	2.029	2.826	3.31	2.135
HCM Lane V/C Ratio	0.062	0.14	0.002	0.153	0.132	0.011
HCM Control Delay	8.2	8.6	7	8.7	9.2	7.2
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0	0.5	0.5	0

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	225	182	27	43	25
Future Vol, veh/h	12	225	182	27	43	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	245	198	29	47	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	227	0	-	0	362	114
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	149	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1339	-	-	-	610	917
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1339	-	-	-	604	917
Mov Cap-2 Maneuver	-	-	-	-	604	-
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	863	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1339	-	-	-	604	917
HCM Lane V/C Ratio	0.01	-	-	-	0.077	0.03
HCM Control Delay (s)	7.7	-	-	-	11.5	9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	267	624	12	214	1368	210	24	366	130	155	793	735
Future Volume (veh/h)	267	624	12	214	1368	210	24	366	130	155	793	735
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	284	664	13	228	1455	0	26	389	138	165	844	782
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	1790	35	200	1603	499	52	988	442	189	1262	565
Arrive On Green	0.10	0.35	0.35	0.06	0.32	0.00	0.03	0.28	0.28	0.11	0.36	0.36
Sat Flow, veh/h	3442	5135	100	3442	5085	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	284	438	239	228	1455	0	26	389	138	165	844	782
Grp Sat Flow(s),veh/h/ln	1721	1695	1845	1721	1695	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.2	13.3	13.3	8.0	37.7	0.0	2.0	12.2	9.5	12.6	27.7	49.0
Cycle Q Clear(g_c), s	11.2	13.3	13.3	8.0	37.7	0.0	2.0	12.2	9.5	12.6	27.7	49.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	328	1182	643	200	1603	499	52	988	442	189	1262	565
V/C Ratio(X)	0.87	0.37	0.37	1.14	0.91	0.00	0.50	0.39	0.31	0.87	0.67	1.38
Avail Cap(c_a), veh/h	328	1197	651	200	1625	506	271	1378	616	219	1262	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	33.5	33.5	64.7	45.1	0.0	65.7	40.1	39.1	60.5	37.3	44.2
Incr Delay (d2), s/veh	20.4	0.3	0.6	105.6	8.1	0.0	5.5	0.4	0.7	26.2	1.7	184.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	6.3	6.9	6.7	18.8	0.0	1.1	6.1	4.2	7.6	13.8	50.3
LnGrp Delay(d),s/veh	81.7	33.8	34.1	170.3	53.2	0.0	71.2	40.5	39.8	86.7	39.0	228.2
LnGrp LOS	F	C	C	F	D		E	D	D	F	D	F
Approach Vol, veh/h		961			1683			553			1791	
Approach Delay, s/veh		48.0			69.1			41.8			126.0	
Approach LOS		D			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	55.4	10.0	57.0	19.6	50.8	20.6	46.4
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	8.0	48.5	21.0	49.0	13.1	43.9	17.0	* 54
Max Q Clear Time (g_c+I1), s	10.0	15.3	4.0	51.0	13.2	39.7	14.6	14.2
Green Ext Time (p_c), s	0.0	7.6	0.0	0.0	0.0	3.6	0.1	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	82.4
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	751	211	387	442	54	82	29	270	32	592	1330
Future Volume (veh/h)	150	751	211	387	442	54	82	29	270	32	592	1330
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	161	808	227	416	475	0	88	31	290	34	637	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	198	1957	609	387	718	610	202	596	885	51	831	655
Arrive On Green	0.11	0.39	0.39	0.11	0.39	0.00	0.11	0.32	0.32	0.03	0.24	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2739	1757	3505	2760
Grp Volume(v), veh/h	161	808	227	416	475	0	88	31	290	34	637	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1370	1757	1752	1380
Q Serve(g_s), s	10.2	13.4	11.9	13.0	24.3	0.0	5.3	1.3	9.2	2.2	19.4	0.0
Cycle Q Clear(g_c), s	10.2	13.4	11.9	13.0	24.3	0.0	5.3	1.3	9.2	2.2	19.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	1957	609	387	718	610	202	596	885	51	831	655
V/C Ratio(X)	0.81	0.41	0.37	1.08	0.66	0.00	0.44	0.05	0.33	0.67	0.77	0.00
Avail Cap(c_a), veh/h	342	1957	609	387	718	610	230	801	1189	94	1249	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.6	25.5	25.0	50.8	28.8	0.0	47.2	26.7	29.3	55.1	40.7	0.0
Incr Delay (d2), s/veh	3.0	0.6	1.7	67.3	4.7	0.0	0.6	0.0	0.2	5.6	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	6.3	5.4	9.7	13.2	0.0	2.6	0.7	3.5	1.1	9.6	0.0
LnGrp Delay(d),s/veh	52.6	26.1	26.8	118.0	33.5	0.0	47.8	26.7	29.5	60.7	42.9	0.0
LnGrp LOS	D	C	C	F	C		D	C	C	E	D	
Approach Vol, veh/h		1196			891			409			671	
Approach Delay, s/veh		29.8			73.0			33.3			43.8	
Approach LOS		C			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	49.6	16.8	31.4	16.6	49.7	7.0	41.2
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	15.0	15.4	7.3	21.4	12.2	26.3	4.2	11.2
Green Ext Time (p_c), s	0.0	8.3	0.1	5.8	0.1	2.2	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	45.4
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	283	0	0	593	28	216	0	141	0	0	0
Future Volume (veh/h)	0	283	0	0	593	28	216	0	141	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	308	0	0	645	0	235	0	153			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	2318	1037	0	2318	1037	516	0	237			
Arrive On Green	0.00	0.66	0.00	0.00	0.66	0.00	0.15	0.00	0.15			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	308	0	0	645	0	235	0	153			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	1.6	0.0	0.0	3.7	0.0	3.1	0.0	4.5			
Cycle Q Clear(g_c), s	0.0	1.6	0.0	0.0	3.7	0.0	3.1	0.0	4.5			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2318	1037	0	2318	1037	516	0	237			
V/C Ratio(X)	0.00	0.13	0.00	0.00	0.28	0.00	0.46	0.00	0.64			
Avail Cap(c_a), veh/h	0	2318	1037	0	2318	1037	1671	0	769			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	3.1	0.0	0.0	3.4	0.0	18.8	0.0	19.4			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.0	0.5	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.0	0.0	1.8	0.0	1.5	0.0	2.1			
LnGrp Delay(d),s/veh	0.0	3.2	0.0	0.0	3.7	0.0	19.2	0.0	21.6			
LnGrp LOS		A			A		B		C			
Approach Vol, veh/h		308			645			388				
Approach Delay, s/veh		3.2			3.7			20.2				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		11.5		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		3.6		6.5		5.7		
Green Ext Time (p_c), s		2.7		0.9		6.2		

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/24/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1119	0	0	176	0
Future Volume (veh/h)	5	1119	0	0	176	0
Number	7	4			5	12
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	6	1257			198	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	0.89	0.89			0.89	0.89
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	11	2513			0	0
Arrive On Green	0.70	0.70			0.00	0.00
Sat Flow, veh/h	16	3708			0	
Grp Volume(v), veh/h	677	586			0.0	
Grp Sat Flow(s),veh/h/ln	1862	1770				
Q Serve(g_s), s	2.9	2.5				
Cycle Q Clear(g_c), s	2.9	2.5				
Prop In Lane	0.01					
Lane Grp Cap(c), veh/h	1294	1230				
V/C Ratio(X)	0.52	0.48				
Avail Cap(c_a), veh/h	1937	1841				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.2	1.2				
Incr Delay (d2), s/veh	0.3	0.3				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	1.4	1.2				
LnGrp Delay(d),s/veh	1.6	1.4				
LnGrp LOS	A	A				
Approach Vol, veh/h		1263				
Approach Delay, s/veh		1.5				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				16.7				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				17.4				
Max Q Clear Time (g_c+I1), s				4.9				
Green Ext Time (p_c), s				6.7				

Intersection Summary	
HCM 2010 Ctrl Delay	1.5
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	20	76	135	5	398	9	1506	68	387	409	6
Future Volume (veh/h)	80	20	76	135	5	398	9	1506	68	387	409	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	71	86	157	0	452	10	1711	0	440	465	7
Adj No. of Lanes	1	1	1	2	0	2	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	393	334	203	0	638	707	1411	722	382	762	341
Arrive On Green	0.07	0.21	0.21	0.06	0.00	0.20	0.40	0.40	0.00	0.22	0.22	0.22
Sat Flow, veh/h	1774	1863	1583	3548	0	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	71	86	157	0	452	10	1711	0	440	465	7
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.6	4.7	6.8	6.5	0.0	19.9	0.5	59.8	0.0	32.3	17.8	0.5
Cycle Q Clear(g_c), s	4.6	4.7	6.8	6.5	0.0	19.9	0.5	59.8	0.0	32.3	17.8	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	393	334	203	0	638	707	1411	722	382	762	341
V/C Ratio(X)	0.48	0.18	0.26	0.77	0.00	0.71	0.01	1.21	0.00	1.15	0.61	0.02
Avail Cap(c_a), veh/h	130	393	334	229	0	638	707	1411	722	382	762	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	48.6	49.4	69.7	0.0	55.8	27.3	45.1	0.0	58.9	53.2	46.4
Incr Delay (d2), s/veh	3.0	1.0	1.9	13.5	0.0	3.6	0.0	102.5	0.0	94.2	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.5	3.2	3.6	0.0	9.0	0.3	49.3	0.0	25.8	8.9	0.2
LnGrp Delay(d),s/veh	70.6	49.6	51.3	83.2	0.0	59.4	27.3	147.6	0.0	153.1	54.6	46.4
LnGrp LOS	E	D	D	F		E	C	F		F	D	D
Approach Vol, veh/h		214			609			1721			912	
Approach Delay, s/veh		55.8			65.5			146.9			102.0	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.3	36.2		36.5	14.7	34.8		64.0
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	9.7	30.5		* 32	* 11	29.2		59.8
Max Q Clear Time (g_c+I1), s	8.5	8.8		34.3	6.6	21.9		61.8
Green Ext Time (p_c), s	0.1	0.6		0.0	0.0	1.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	115.1
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 Ramps/I-580 EB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	742	79	93	0	0	0	0	260	224	291	293	0
Future Volume (veh/h)	742	79	93	0	0	0	0	260	224	291	293	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	815	0	95				0	361	165	297	299	0
Adj No. of Lanes	2	0	1				0	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1083	0	482				0	834	354	368	1797	0
Arrive On Green	0.31	0.00	0.31				0.00	0.23	0.23	0.21	0.51	0.00
Sat Flow, veh/h	3514	0	1565				0	3689	1568	1757	3597	0
Grp Volume(v), veh/h	815	0	95				0	361	165	297	299	0
Grp Sat Flow(s),veh/h/ln	1757	0	1565				0	1845	1568	1757	1752	0
Q Serve(g_s), s	8.2	0.0	1.7				0.0	3.3	3.6	6.3	1.8	0.0
Cycle Q Clear(g_c), s	8.2	0.0	1.7				0.0	3.3	3.6	6.3	1.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1083	0	482				0	834	354	368	1797	0
V/C Ratio(X)	0.75	0.00	0.20				0.00	0.43	0.47	0.81	0.17	0.00
Avail Cap(c_a), veh/h	2204	0	982				0	1747	743	540	3006	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.2	0.0	10.0				0.0	13.0	13.1	14.7	5.1	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.1				0.0	0.5	1.4	4.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.7				0.0	1.7	1.6	3.5	0.8	0.0
LnGrp Delay(d),s/veh	12.6	0.0	10.0				0.0	13.5	14.4	19.4	5.1	0.0
LnGrp LOS	B		B					B	B	B	A	
Approach Vol, veh/h		910						526			596	
Approach Delay, s/veh		12.3						13.8			12.2	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	11.2	12.8		15.0		24.0		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.6	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	10.3	5.6		10.2		3.8		
Green Ext Time (p_c), s	0.3	3.3		1.8		2.0		

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/24/2020

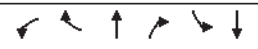


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	207	4	614	70	944	0	0	387	103
Future Volume (veh/h)	0	0	0	207	4	614	70	944	0	0	387	103
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				220	4	653	74	1004	0	0	412	110
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				805	15	730	132	1408	0	0	995	421
Arrive On Green				0.47	0.47	0.47	0.08	0.40	0.00	0.00	0.27	0.27
Sat Flow, veh/h				1727	31	1567	1757	3597	0	0	3689	1563
Grp Volume(v), veh/h				224	0	653	74	1004	0	0	412	110
Grp Sat Flow(s),veh/h/ln				1758	0	1567	1757	1752	0	0	1845	1563
Q Serve(g_s), s				4.1	0.0	20.2	2.2	12.7	0.0	0.0	4.9	2.9
Cycle Q Clear(g_c), s				4.1	0.0	20.2	2.2	12.7	0.0	0.0	4.9	2.9
Prop In Lane				0.98		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				819	0	730	132	1408	0	0	995	421
V/C Ratio(X)				0.27	0.00	0.89	0.56	0.71	0.00	0.00	0.41	0.26
Avail Cap(c_a), veh/h				914	0	815	266	2021	0	0	1360	576
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				8.6	0.0	12.9	23.6	13.3	0.0	0.0	15.9	15.2
Incr Delay (d2), s/veh				0.1	0.0	11.2	1.4	0.7	0.0	0.0	0.4	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.0	0.0	10.8	1.1	6.3	0.0	0.0	2.5	1.3
LnGrp Delay(d),s/veh				8.8	0.0	24.2	25.0	14.0	0.0	0.0	16.3	15.6
LnGrp LOS				A		C	C	B			B	B
Approach Vol, veh/h					877			1078			522	
Approach Delay, s/veh					20.2			14.7			16.1	
Approach LOS					C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		25.2			7.0	18.3		27.6
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		30.5			8.0	19.5		27.5
Max Q Clear Time (g_c+I1), s		14.7			4.2	6.9		22.2
Green Ext Time (p_c), s		6.5			0.0	3.4		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	17.0
HCM 2010 LOS	B

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	92	123	195	156	94	110
Future Volume (veh/h)	92	123	195	156	94	110
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	100	134	212	170	102	120
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	319	285	382	306	547	742
Arrive On Green	0.18	0.18	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1774	1583	959	769	997	1863
Grp Volume(v), veh/h	100	134	0	382	102	120
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1727	997	1863
Q Serve(g_s), s	1.1	1.7	0.0	3.8	2.0	0.9
Cycle Q Clear(g_c), s	1.1	1.7	0.0	3.8	5.8	0.9
Prop In Lane	1.00	1.00		0.45	1.00	
Lane Grp Cap(c), veh/h	319	285	0	688	547	742
V/C Ratio(X)	0.31	0.47	0.00	0.55	0.19	0.16
Avail Cap(c_a), veh/h	1968	1757	0	2300	1477	2480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.0	8.3	0.0	5.2	7.5	4.4
Incr Delay (d2), s/veh	0.2	0.5	0.0	0.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.8	0.0	1.9	0.6	0.5
LnGrp Delay(d),s/veh	8.2	8.7	0.0	5.9	7.6	4.5
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	234		382			222
Approach Delay, s/veh	8.5		5.9			5.9
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		14.0				14.0		8.6
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		5.8				7.8		3.7
Green Ext Time (p_c), s		2.5				1.1		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	45	4	8	108	198	10	23	12	143	13	4
Future Vol, veh/h	11	45	4	8	108	198	10	23	12	143	13	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	48	4	9	116	213	11	25	13	154	14	4
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.9	12.1	9.3	11.1
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	22%	20%	0%	3%	92%	0%
Vol Thru, %	51%	80%	0%	34%	8%	0%
Vol Right, %	27%	0%	100%	63%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	45	56	4	314	156	4
LT Vol	10	11	0	8	143	0
Through Vol	23	45	0	108	13	0
RT Vol	12	0	4	198	0	4
Lane Flow Rate	48	60	4	338	168	4
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.077	0.094	0.006	0.46	0.282	0.006
Departure Headway (Hd)	5.713	5.629	4.823	4.905	6.053	4.885
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	621	632	735	733	590	726
Service Time	3.806	3.402	2.596	2.956	3.828	2.66
HCM Lane V/C Ratio	0.077	0.095	0.005	0.461	0.285	0.006
HCM Control Delay	9.3	9	7.6	12.1	11.2	7.7
HCM Lane LOS	A	A	A	B	B	A
HCM 95th-tile Q	0.2	0.3	0	2.4	1.2	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	235	184	34	38	14
Future Vol, veh/h	29	235	184	34	38	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	245	192	35	40	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	227	0	-	0	393	114
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1339	-	-	-	584	917
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	830	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1339	-	-	-	571	917
Mov Cap-2 Maneuver	-	-	-	-	571	-
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	830	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1339	-	-	-	571	917
HCM Lane V/C Ratio	0.023	-	-	-	0.069	0.016
HCM Control Delay (s)	7.8	-	-	-	11.8	9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	639	1333	9	125	532	502	35	1122	109	137	298	170
Future Volume (veh/h)	639	1333	9	125	532	502	35	1122	109	137	298	170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	680	1418	10	133	566	0	37	1194	116	146	317	181
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	614	1632	12	158	936	291	60	1273	568	167	1487	664
Arrive On Green	0.18	0.31	0.31	0.05	0.18	0.00	0.03	0.36	0.36	0.09	0.42	0.42
Sat Flow, veh/h	3442	5210	37	3442	5085	1583	1774	3539	1579	1774	3539	1580
Grp Volume(v), veh/h	680	923	505	133	566	0	37	1194	116	146	317	181
Grp Sat Flow(s),veh/h/ln	1721	1695	1856	1721	1695	1583	1774	1770	1579	1774	1770	1580
Q Serve(g_s), s	27.2	39.2	39.2	5.8	15.6	0.0	3.1	49.7	7.7	12.4	8.7	11.4
Cycle Q Clear(g_c), s	27.2	39.2	39.2	5.8	15.6	0.0	3.1	49.7	7.7	12.4	8.7	11.4
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	614	1062	581	158	936	291	60	1273	568	167	1487	664
V/C Ratio(X)	1.11	0.87	0.87	0.84	0.60	0.00	0.62	0.94	0.20	0.87	0.21	0.27
Avail Cap(c_a), veh/h	614	1100	602	158	994	309	244	1288	575	174	1487	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	49.4	49.4	72.2	57.1	0.0	72.7	47.2	33.7	68.2	28.2	29.0
Incr Delay (d2), s/veh	69.6	7.9	13.3	31.1	1.3	0.0	7.4	13.2	0.3	33.8	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.8	19.5	22.2	3.5	7.4	0.0	1.7	26.5	3.4	7.7	4.3	5.1
LnGrp Delay(d),s/veh	132.2	57.3	62.8	103.3	58.5	0.0	80.0	60.3	34.0	102.0	28.3	29.3
LnGrp LOS	F	E	E	F	E		F	E	C	F	C	C
Approach Vol, veh/h		2108			699			1347			644	
Approach Delay, s/veh		82.8			67.0			58.6			45.3	
Approach LOS		F			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	55.3	11.2	72.1	33.7	35.6	20.4	62.9
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	7.0	49.5	21.0	49.0	27.2	29.8	15.0	* 56
Max Q Clear Time (g_c+I1), s	7.8	41.2	5.1	13.4	29.2	17.6	14.4	51.7
Green Ext Time (p_c), s	0.0	6.6	0.0	5.1	0.0	4.2	0.0	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	68.7
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	1326	154	274	397	347	194	117	720	114	191	595
Future Volume (veh/h)	208	1326	154	274	397	347	194	117	720	114	191	595
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	214	1367	159	282	409	0	200	121	742	118	197	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	246	1804	562	389	613	521	233	574	856	102	828	652
Arrive On Green	0.14	0.36	0.36	0.11	0.33	0.00	0.13	0.31	0.31	0.06	0.24	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2754	1757	3505	2760
Grp Volume(v), veh/h	214	1367	159	282	409	0	200	121	742	118	197	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1377	1757	1752	1380
Q Serve(g_s), s	12.5	25.1	7.6	8.4	20.0	0.0	11.7	5.1	26.7	6.1	4.8	0.0
Cycle Q Clear(g_c), s	12.5	25.1	7.6	8.4	20.0	0.0	11.7	5.1	26.7	6.1	4.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	1804	562	389	613	521	233	574	856	102	828	652
V/C Ratio(X)	0.87	0.76	0.28	0.73	0.67	0.00	0.86	0.21	0.87	1.16	0.24	0.00
Avail Cap(c_a), veh/h	373	2131	663	421	617	525	251	872	1302	102	1360	1071
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.3	29.7	24.1	45.0	30.1	0.0	44.6	26.7	34.2	49.5	32.5	0.0
Incr Delay (d2), s/veh	9.3	1.4	0.3	5.6	2.9	0.0	21.8	0.2	4.2	137.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	11.9	3.3	4.3	10.6	0.0	7.1	2.6	10.6	6.8	2.3	0.0
LnGrp Delay(d),s/veh	53.6	31.2	24.4	50.6	33.0	0.0	66.4	26.9	38.3	187.4	32.7	0.0
LnGrp LOS	D	C	C	D	C		E	C	D	F	C	
Approach Vol, veh/h		1740			691			1063			315	
Approach Delay, s/veh		33.3			40.2			42.3			90.7	
Approach LOS		C			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	42.8	17.7	29.0	18.4	40.1	9.8	36.9
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	10.4	27.1	13.7	6.8	14.5	22.0	8.1	28.7
Green Ext Time (p_c), s	0.2	10.5	0.0	1.8	0.2	2.3	0.0	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.8
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1447	0	0	791	346	126	0	306	0	0	0
Future Volume (veh/h)	0	1447	0	0	791	346	126	0	306	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	1539	0	0	841	0	134	0	326			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	2046	915	0	2046	915	854	0	393			
Arrive On Green	0.00	0.58	0.00	0.00	0.58	0.00	0.25	0.00	0.25			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	1539	0	0	841	0	134	0	326			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	17.9	0.0	0.0	7.2	0.0	1.7	0.0	10.8			
Cycle Q Clear(g_c), s	0.0	17.9	0.0	0.0	7.2	0.0	1.7	0.0	10.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2046	915	0	2046	915	854	0	393			
V/C Ratio(X)	0.00	0.75	0.00	0.00	0.41	0.00	0.16	0.00	0.83			
Avail Cap(c_a), veh/h	0	2046	915	0	2046	915	1475	0	679			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	8.5	0.0	0.0	6.3	0.0	16.1	0.0	19.5			
Incr Delay (d2), s/veh	0.0	1.7	0.0	0.0	0.6	0.0	0.1	0.0	3.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	9.0	0.0	0.0	3.6	0.0	0.8	0.0	5.0			
LnGrp Delay(d),s/veh	0.0	10.2	0.0	0.0	6.9	0.0	16.1	0.0	22.9			
LnGrp LOS		B			A		B		C			
Approach Vol, veh/h		1539			841			460				
Approach Delay, s/veh		10.2			6.9			20.9				
Approach LOS		B			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		18.0		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		19.9		12.8		9.2		
Green Ext Time (p_c), s		9.5		1.0		8.0		

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/24/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	256	0	0	372	0
Future Volume (veh/h)	18	256	0	0	372	0
Number	7	4			1	16
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	23	324			471	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	0.79	0.79			0.79	0.79
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	131	1942			0	0
Arrive On Green	0.57	0.57			0.00	0.00
Sat Flow, veh/h	229	3485			0	
Grp Volume(v), veh/h	186	161			0.0	
Grp Sat Flow(s),veh/h/ln	1851	1770				
Q Serve(g_s), s	0.6	0.5				
Cycle Q Clear(g_c), s	0.6	0.5				
Prop In Lane	0.12					
Lane Grp Cap(c), veh/h	1060	1013				
V/C Ratio(X)	0.18	0.16				
Avail Cap(c_a), veh/h	6980	6672				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.2	1.2				
Incr Delay (d2), s/veh	0.1	0.1				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.3	0.2				
LnGrp Delay(d),s/veh	1.3	1.3				
LnGrp LOS	A	A				
Approach Vol, veh/h		347				
Approach Delay, s/veh		1.3				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				11.9				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				45.0				
Max Q Clear Time (g_c+I1), s				2.6				
Green Ext Time (p_c), s				2.2				

Intersection Summary	
HCM 2010 Ctrl Delay	1.3
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	23	53	51	52	33	230	143	262	458	70
Future Volume (veh/h)	0	2	23	53	51	52	33	230	143	262	458	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	2	26	59	59	59	38	261	0	298	520	80
Adj No. of Lanes	1	1	1	1	1	2	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	867	737	108	1060	1802	177	352	254	378	755	338
Arrive On Green	0.00	0.47	0.47	0.06	0.57	0.57	0.10	0.10	0.00	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	1583	1774	1863	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	2	26	59	59	59	38	261	0	298	520	80
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.1	1.0	3.6	1.6	0.9	2.2	7.9	0.0	17.5	14.9	4.6
Cycle Q Clear(g_c), s	0.0	0.1	1.0	3.6	1.6	0.9	2.2	7.9	0.0	17.5	14.9	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	867	737	108	1060	1802	177	352	254	378	755	338
V/C Ratio(X)	0.00	0.00	0.04	0.55	0.06	0.03	0.22	0.74	0.00	0.79	0.69	0.24
Avail Cap(c_a), veh/h	177	867	737	150	1060	1802	295	589	360	529	1055	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.7	16.0	50.2	10.5	10.4	45.6	48.1	0.0	40.9	39.9	35.9
Incr Delay (d2), s/veh	0.0	0.0	0.1	3.9	0.0	0.0	0.6	3.1	0.0	5.3	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	1.9	0.8	0.4	1.1	4.0	0.0	9.1	7.4	2.0
LnGrp Delay(d),s/veh	0.0	15.7	16.1	54.1	10.6	10.4	46.2	51.2	0.0	46.2	41.0	36.2
LnGrp LOS		B	B	D	B	B	D	D		D	D	D
Approach Vol, veh/h		28			177			299			898	
Approach Delay, s/veh		16.0			25.0			50.6			42.3	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	55.8		27.7	0.0	67.2		15.1
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	9.3	31.9		* 33	* 11	30.2		18.3
Max Q Clear Time (g_c+I1), s	5.6	3.0		19.5	0.0	3.6		9.9
Green Ext Time (p_c), s	0.0	0.1		4.0	0.0	0.5		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 EB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	103	80	0	0	0	0	148	210	679	402	0
Future Volume (veh/h)	126	103	80	0	0	0	0	148	210	679	402	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	126	130	88				0	163	231	746	442	0
Adj No. of Lanes	1	1	1				0	1	2	1	2	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	257	270	228				0	373	634	624	2266	0
Arrive On Green	0.15	0.15	0.15				0.00	0.20	0.20	0.36	0.65	0.00
Sat Flow, veh/h	1757	1845	1562				0	1845	3136	1757	3597	0
Grp Volume(v), veh/h	126	130	88				0	163	231	746	442	0
Grp Sat Flow(s),veh/h/ln	1757	1845	1562				0	1845	1568	1757	1752	0
Q Serve(g_s), s	2.2	2.2	1.7				0.0	2.6	2.1	12.0	1.7	0.0
Cycle Q Clear(g_c), s	2.2	2.2	1.7				0.0	2.6	2.1	12.0	1.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	257	270	228				0	373	634	624	2266	0
V/C Ratio(X)	0.49	0.48	0.39				0.00	0.44	0.36	1.20	0.20	0.00
Avail Cap(c_a), veh/h	1274	1338	1133				0	1010	1718	624	3476	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.3	13.2	13.0				0.0	11.8	11.6	10.9	2.4	0.0
Incr Delay (d2), s/veh	0.5	0.5	0.4				0.0	1.1	0.5	102.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.2	0.8				0.0	1.4	1.0	23.4	0.8	0.0
LnGrp Delay(d),s/veh	13.8	13.7	13.4				0.0	12.9	12.1	113.8	2.5	0.0
LnGrp LOS	B	B	B					B	B	F	A	
Approach Vol, veh/h		344						394			1188	
Approach Delay, s/veh		13.7						12.4			72.4	
Approach LOS		B						B			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	10.8		7.9		25.8		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.0	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	14.0	4.6		4.2		3.7		
Green Ext Time (p_c), s	0.0	2.2		0.7		3.2		

Intersection Summary	
HCM 2010 Ctrl Delay	49.6
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	108	6	158	55	229	0	0	975	355
Future Volume (veh/h)	0	0	0	108	6	158	55	229	0	0	975	355
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				117	7	172	60	249	0	0	1060	386
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				300	18	282	126	2288	0	0	1879	797
Arrive On Green				0.18	0.18	0.18	0.07	0.65	0.00	0.00	0.51	0.51
Sat Flow, veh/h				1662	99	1565	1757	3597	0	0	3689	1565
Grp Volume(v), veh/h				124	0	172	60	249	0	0	1060	386
Grp Sat Flow(s),veh/h/ln				1762	0	1565	1757	1752	0	0	1845	1565
Q Serve(g_s), s				2.6	0.0	4.2	1.4	1.1	0.0	0.0	8.3	6.7
Cycle Q Clear(g_c), s				2.6	0.0	4.2	1.4	1.1	0.0	0.0	8.3	6.7
Prop In Lane				0.94		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				318	0	282	126	2288	0	0	1879	797
V/C Ratio(X)				0.39	0.00	0.61	0.47	0.11	0.00	0.00	0.56	0.48
Avail Cap(c_a), veh/h				1155	0	1027	335	3218	0	0	2420	1027
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				15.2	0.0	15.8	18.7	2.7	0.0	0.0	7.1	6.7
Incr Delay (d2), s/veh				0.6	0.0	1.6	1.0	0.0	0.0	0.0	0.4	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	1.9	0.7	0.5	0.0	0.0	4.2	3.0
LnGrp Delay(d),s/veh				15.7	0.0	17.4	19.7	2.7	0.0	0.0	7.5	7.4
LnGrp LOS				B		B	B	A			A	A
Approach Vol, veh/h					296			309			1446	
Approach Delay, s/veh					16.7			6.0			7.4	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		31.4			6.0	25.4		10.6
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		38.5			8.0	27.5		27.5
Max Q Clear Time (g_c+I1), s		3.1			3.4	10.3		6.2
Green Ext Time (p_c), s		1.7			0.0	11.1		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	161	56	64	130	104	85
Future Volume (veh/h)	161	56	64	130	104	85
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	175	61	70	141	113	92
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	367	328	197	398	639	675
Arrive On Green	0.21	0.21	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	1583	545	1097	1166	1863
Grp Volume(v), veh/h	175	61	0	211	113	92
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1641	1166	1863
Q Serve(g_s), s	1.9	0.7	0.0	2.1	1.7	0.7
Cycle Q Clear(g_c), s	1.9	0.7	0.0	2.1	3.8	0.7
Prop In Lane	1.00	1.00		0.67	1.00	
Lane Grp Cap(c), veh/h	367	328	0	595	639	675
V/C Ratio(X)	0.48	0.19	0.00	0.35	0.18	0.14
Avail Cap(c_a), veh/h	2010	1794	0	2231	1801	2532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	7.2	0.0	5.1	6.5	4.7
Incr Delay (d2), s/veh	1.0	0.3	0.0	0.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.3	0.0	1.0	0.6	0.4
LnGrp Delay(d),s/veh	8.7	7.5	0.0	5.5	6.7	4.8
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	236		211			205
Approach Delay, s/veh	8.4		5.5			5.8
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.0				13.0		9.1
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		4.1				5.8		3.9
Green Ext Time (p_c), s		1.3				0.9		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	91	2	14	48	49	5	10	29	78	5	9
Future Vol, veh/h	5	91	2	14	48	49	5	10	29	78	5	9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	95	2	15	50	51	5	10	30	81	5	9
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.6	8.7	8.2	9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	11%	5%	0%	13%	94%	0%
Vol Thru, %	23%	95%	0%	43%	6%	0%
Vol Right, %	66%	0%	100%	44%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	44	96	2	111	83	9
LT Vol	5	5	0	14	78	0
Through Vol	10	91	0	48	5	0
RT Vol	29	0	2	49	0	9
Lane Flow Rate	46	100	2	116	86	9
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.062	0.14	0.002	0.154	0.134	0.012
Departure Headway (Hd)	4.84	5.044	4.315	4.803	5.591	4.416
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	741	712	831	748	642	811
Service Time	2.866	2.764	2.034	2.823	3.314	2.139
HCM Lane V/C Ratio	0.062	0.14	0.002	0.155	0.134	0.011
HCM Control Delay	8.2	8.6	7	8.7	9.2	7.2
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0	0.5	0.5	0

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	225	182	43	95	29
Future Vol, veh/h	14	225	182	43	95	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	245	198	47	103	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	245	0	-	0	375	123
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	153	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1318	-	-	-	599	905
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	859	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1318	-	-	-	592	905
Mov Cap-2 Maneuver	-	-	-	-	592	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	859	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1318	-	-	-	592	905
HCM Lane V/C Ratio	0.012	-	-	-	0.174	0.035
HCM Control Delay (s)	7.8	-	-	-	12.4	9.1
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	657	12	214	1378	210	24	366	130	155	793	736
Future Volume (veh/h)	270	657	12	214	1378	210	24	366	130	155	793	736
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	287	699	13	228	1466	0	26	389	138	165	844	783
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	1794	33	200	1605	500	52	988	442	189	1261	564
Arrive On Green	0.10	0.35	0.35	0.06	0.32	0.00	0.03	0.28	0.28	0.11	0.36	0.36
Sat Flow, veh/h	3442	5141	95	3442	5085	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	287	461	251	228	1466	0	26	389	138	165	844	783
Grp Sat Flow(s),veh/h/ln	1721	1695	1846	1721	1695	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.3	14.1	14.1	8.0	38.1	0.0	2.0	12.2	9.5	12.6	27.7	49.0
Cycle Q Clear(g_c), s	11.3	14.1	14.1	8.0	38.1	0.0	2.0	12.2	9.5	12.6	27.7	49.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	328	1183	644	200	1605	500	52	988	442	189	1261	564
V/C Ratio(X)	0.88	0.39	0.39	1.14	0.91	0.00	0.50	0.39	0.31	0.87	0.67	1.39
Avail Cap(c_a), veh/h	328	1196	651	200	1624	506	271	1377	616	219	1261	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	33.7	33.7	64.7	45.3	0.0	65.8	40.1	39.1	60.5	37.4	44.2
Incr Delay (d2), s/veh	21.9	0.4	0.7	105.9	8.5	0.0	5.5	0.4	0.7	26.2	1.7	185.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	6.6	7.3	6.7	19.1	0.0	1.1	6.1	4.2	7.6	13.8	50.4
LnGrp Delay(d),s/veh	83.3	34.1	34.4	170.6	53.8	0.0	71.3	40.6	39.8	86.8	39.1	229.4
LnGrp LOS	F	C	C	F	D		E	D	D	F	D	F
Approach Vol, veh/h		999			1694			553			1792	
Approach Delay, s/veh		48.3			69.5			41.8			126.6	
Approach LOS		D			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	55.5	10.0	57.0	19.6	50.9	20.6	46.4
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	8.0	48.5	21.0	49.0	13.1	43.9	17.0	* 54
Max Q Clear Time (g_c+I1), s	10.0	16.1	4.0	51.0	13.3	40.1	14.6	14.2
Green Ext Time (p_c), s	0.0	8.0	0.0	0.0	0.0	3.3	0.1	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	82.6
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	770	211	387	447	54	82	29	270	32	592	1335
Future Volume (veh/h)	164	770	211	387	447	54	82	29	270	32	592	1335
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	176	828	227	416	481	0	88	31	290	34	637	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	205	1957	609	387	711	604	202	596	885	51	831	655
Arrive On Green	0.12	0.39	0.39	0.11	0.39	0.00	0.11	0.32	0.32	0.03	0.24	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2739	1757	3505	2760
Grp Volume(v), veh/h	176	828	227	416	481	0	88	31	290	34	637	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1370	1757	1752	1380
Q Serve(g_s), s	11.3	13.8	11.9	13.0	24.8	0.0	5.3	1.3	9.2	2.2	19.4	0.0
Cycle Q Clear(g_c), s	11.3	13.8	11.9	13.0	24.8	0.0	5.3	1.3	9.2	2.2	19.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	1957	609	387	711	604	202	596	885	51	831	655
V/C Ratio(X)	0.86	0.42	0.37	1.08	0.68	0.00	0.44	0.05	0.33	0.67	0.77	0.00
Avail Cap(c_a), veh/h	342	1957	609	387	711	604	230	801	1189	94	1249	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.6	25.6	25.0	50.8	29.2	0.0	47.2	26.7	29.3	55.1	40.7	0.0
Incr Delay (d2), s/veh	5.3	0.7	1.7	67.3	5.1	0.0	0.6	0.0	0.2	5.6	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	6.5	5.4	9.7	13.6	0.0	2.6	0.7	3.5	1.1	9.6	0.0
LnGrp Delay(d),s/veh	54.9	26.3	26.8	118.0	34.4	0.0	47.8	26.7	29.5	60.7	42.9	0.0
LnGrp LOS	D	C	C	F	C		D	C	C	E	D	
Approach Vol, veh/h		1231			897			409			671	
Approach Delay, s/veh		30.5			73.2			33.3			43.8	
Approach LOS		C			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	49.6	16.8	31.4	17.1	49.2	7.0	41.2
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	15.0	15.8	7.3	21.4	13.3	26.8	4.2	11.2
Green Ext Time (p_c), s	0.0	8.4	0.1	5.8	0.1	2.1	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	45.6
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	285	17	0	594	28	220	0	141	0	0	0
Future Volume (veh/h)	0	285	17	0	594	28	220	0	141	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	310	0	0	646	0	239	0	153			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	2317	1037	0	2317	1037	516	0	238			
Arrive On Green	0.00	0.66	0.00	0.00	0.66	0.00	0.15	0.00	0.15			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	310	0	0	646	0	239	0	153			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	1.6	0.0	0.0	3.7	0.0	3.1	0.0	4.5			
Cycle Q Clear(g_c), s	0.0	1.6	0.0	0.0	3.7	0.0	3.1	0.0	4.5			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2317	1037	0	2317	1037	516	0	238			
V/C Ratio(X)	0.00	0.13	0.00	0.00	0.28	0.00	0.46	0.00	0.64			
Avail Cap(c_a), veh/h	0	2317	1037	0	2317	1037	1670	0	769			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	3.1	0.0	0.0	3.4	0.0	18.8	0.0	19.4			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.0	0.5	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.0	0.0	1.9	0.0	1.5	0.0	2.1			
LnGrp Delay(d),s/veh	0.0	3.2	0.0	0.0	3.7	0.0	19.3	0.0	21.5			
LnGrp LOS		A			A		B		C			
Approach Vol, veh/h		310			646			392				
Approach Delay, s/veh		3.2			3.7			20.2				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		11.6		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		3.6		6.5		5.7		
Green Ext Time (p_c), s		2.7		0.9		6.2		

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/24/2020

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1128	0	0	176	0
Future Volume (veh/h)	5	1128	0	0	176	0
Number	7	4			5	12
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	6	1267			198	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	0.89	0.89			0.89	0.89
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	11	2518			0	0
Arrive On Green	0.70	0.70			0.00	0.00
Sat Flow, veh/h	16	3708			0	
Grp Volume(v), veh/h	683	590			0.0	
Grp Sat Flow(s),veh/h/ln	1862	1770				
Q Serve(g_s), s	3.0	2.6				
Cycle Q Clear(g_c), s	3.0	2.6				
Prop In Lane	0.01					
Lane Grp Cap(c), veh/h	1297	1233				
V/C Ratio(X)	0.53	0.48				
Avail Cap(c_a), veh/h	1928	1832				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.2	1.2				
Incr Delay (d2), s/veh	0.3	0.3				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	1.4	1.2				
LnGrp Delay(d),s/veh	1.6	1.5				
LnGrp LOS	A	A				
Approach Vol, veh/h		1273				
Approach Delay, s/veh		1.5				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				16.8				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				17.4				
Max Q Clear Time (g_c+I1), s				5.0				
Green Ext Time (p_c), s				6.8				

Intersection Summary	
HCM 2010 Ctrl Delay	1.5
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	20	76	135	5	398	9	1515	68	392	410	6
Future Volume (veh/h)	80	20	76	135	5	398	9	1515	68	392	410	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	71	86	157	0	452	10	1722	0	445	466	7
Adj No. of Lanes	1	1	1	2	0	2	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	393	334	203	0	638	707	1411	722	382	762	341
Arrive On Green	0.07	0.21	0.21	0.06	0.00	0.20	0.40	0.40	0.00	0.22	0.22	0.22
Sat Flow, veh/h	1774	1863	1583	3548	0	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	57	71	86	157	0	452	10	1722	0	445	466	7
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.6	4.7	6.8	6.5	0.0	19.9	0.5	59.8	0.0	32.3	17.8	0.5
Cycle Q Clear(g_c), s	4.6	4.7	6.8	6.5	0.0	19.9	0.5	59.8	0.0	32.3	17.8	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	393	334	203	0	638	707	1411	722	382	762	341
V/C Ratio(X)	0.48	0.18	0.26	0.77	0.00	0.71	0.01	1.22	0.00	1.16	0.61	0.02
Avail Cap(c_a), veh/h	130	393	334	229	0	638	707	1411	722	382	762	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	48.6	49.4	69.7	0.0	55.8	27.3	45.1	0.0	58.9	53.2	46.4
Incr Delay (d2), s/veh	3.0	1.0	1.9	13.5	0.0	3.6	0.0	105.8	0.0	99.1	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.5	3.2	3.6	0.0	9.0	0.3	49.9	0.0	26.3	8.9	0.2
LnGrp Delay(d),s/veh	70.6	49.6	51.3	83.2	0.0	59.4	27.3	150.9	0.0	158.0	54.6	46.4
LnGrp LOS	E	D	D	F		E	C	F		F	D	D
Approach Vol, veh/h		214			609			1732			918	
Approach Delay, s/veh		55.8			65.5			150.2			104.7	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.3	36.2		36.5	14.7	34.8		64.0
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	9.7	30.5		* 32	* 11	29.2		59.8
Max Q Clear Time (g_c+I1), s	8.5	8.8		34.3	6.6	21.9		61.8
Green Ext Time (p_c), s	0.1	0.6		0.0	0.0	1.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	117.5
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 Ramps/I-580 EB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	742	79	93	0	0	0	0	261	224	295	294	0
Future Volume (veh/h)	742	79	93	0	0	0	0	261	224	295	294	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	815	0	95				0	362	165	301	300	0
Adj No. of Lanes	2	0	1				0	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1081	0	482				0	832	354	372	1801	0
Arrive On Green	0.31	0.00	0.31				0.00	0.23	0.23	0.21	0.51	0.00
Sat Flow, veh/h	3514	0	1565				0	3689	1568	1757	3597	0
Grp Volume(v), veh/h	815	0	95				0	362	165	301	300	0
Grp Sat Flow(s),veh/h/ln	1757	0	1565				0	1845	1568	1757	1752	0
Q Serve(g_s), s	8.2	0.0	1.8				0.0	3.3	3.6	6.4	1.8	0.0
Cycle Q Clear(g_c), s	8.2	0.0	1.8				0.0	3.3	3.6	6.4	1.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1081	0	482				0	832	354	372	1801	0
V/C Ratio(X)	0.75	0.00	0.20				0.00	0.43	0.47	0.81	0.17	0.00
Avail Cap(c_a), veh/h	2193	0	977				0	1738	739	537	2991	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.2	0.0	10.0				0.0	13.1	13.2	14.7	5.1	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.1				0.0	0.5	1.4	5.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.7				0.0	1.7	1.6	3.6	0.8	0.0
LnGrp Delay(d),s/veh	12.7	0.0	10.1				0.0	13.6	14.5	19.8	5.1	0.0
LnGrp LOS	B		B					B	B	B	A	
Approach Vol, veh/h		910						527			601	
Approach Delay, s/veh		12.4						13.9			12.4	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	11.3	12.9		15.1		24.2		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.0	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	10.4	5.6		10.2		3.8		
Green Ext Time (p_c), s	0.3	3.3		1.8		2.0		

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	207	4	623	70	945	0	0	391	103
Future Volume (veh/h)	0	0	0	207	4	623	70	945	0	0	391	103
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				220	4	663	74	1005	0	0	416	110
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				810	15	735	131	1402	0	0	993	421
Arrive On Green				0.47	0.47	0.47	0.07	0.40	0.00	0.00	0.27	0.27
Sat Flow, veh/h				1727	31	1567	1757	3597	0	0	3689	1563
Grp Volume(v), veh/h				224	0	663	74	1005	0	0	416	110
Grp Sat Flow(s),veh/h/ln				1758	0	1567	1757	1752	0	0	1845	1563
Q Serve(g_s), s				4.1	0.0	20.8	2.2	12.9	0.0	0.0	5.0	3.0
Cycle Q Clear(g_c), s				4.1	0.0	20.8	2.2	12.9	0.0	0.0	5.0	3.0
Prop In Lane				0.98		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				825	0	735	131	1402	0	0	993	421
V/C Ratio(X)				0.27	0.00	0.90	0.56	0.72	0.00	0.00	0.42	0.26
Avail Cap(c_a), veh/h				904	0	806	263	1999	0	0	1346	570
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				8.6	0.0	13.1	23.9	13.5	0.0	0.0	16.1	15.4
Incr Delay (d2), s/veh				0.1	0.0	12.4	1.4	0.7	0.0	0.0	0.4	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.0	0.0	11.4	1.1	6.3	0.0	0.0	2.5	1.3
LnGrp Delay(d),s/veh				8.8	0.0	25.4	25.3	14.2	0.0	0.0	16.5	15.8
LnGrp LOS				A		C	C	B			B	B
Approach Vol, veh/h					887			1079			526	
Approach Delay, s/veh					21.2			15.0			16.4	
Approach LOS					C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		25.4			7.0	18.4		28.1
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		30.5			8.0	19.5		27.5
Max Q Clear Time (g_c+I1), s		14.9			4.2	7.0		22.8
Green Ext Time (p_c), s		6.5			0.0	3.4		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

Notes

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	93	124	195	158	96	110
Future Volume (veh/h)	93	124	195	158	96	110
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	101	135	212	172	104	120
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	319	285	382	310	546	747
Arrive On Green	0.18	0.18	0.40	0.40	0.40	0.40
Sat Flow, veh/h	1774	1583	953	773	995	1863
Grp Volume(v), veh/h	101	135	0	384	104	120
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1726	995	1863
Q Serve(g_s), s	1.1	1.7	0.0	3.9	2.0	0.9
Cycle Q Clear(g_c), s	1.1	1.7	0.0	3.9	5.9	0.9
Prop In Lane	1.00	1.00		0.45	1.00	
Lane Grp Cap(c), veh/h	319	285	0	692	546	747
V/C Ratio(X)	0.32	0.47	0.00	0.56	0.19	0.16
Avail Cap(c_a), veh/h	1957	1747	0	2286	1465	2466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.1	8.3	0.0	5.2	7.5	4.3
Incr Delay (d2), s/veh	0.2	0.5	0.0	0.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.8	0.0	1.9	0.6	0.5
LnGrp Delay(d),s/veh	8.3	8.8	0.0	5.9	7.7	4.4
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	236		384			224
Approach Delay, s/veh	8.6		5.9			5.9
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		14.1				14.1		8.6
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		5.9				7.9		3.7
Green Ext Time (p_c), s		2.5				1.1		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	45	4	8	108	199	10	23	12	145	13	4
Future Vol, veh/h	11	45	4	8	108	199	10	23	12	145	13	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	48	4	9	116	214	11	25	13	156	14	4
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.9	12.2	9.3	11.2
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	22%	20%	0%	3%	92%	0%
Vol Thru, %	51%	80%	0%	34%	8%	0%
Vol Right, %	27%	0%	100%	63%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	45	56	4	315	158	4
LT Vol	10	11	0	8	145	0
Through Vol	23	45	0	108	13	0
RT Vol	12	0	4	199	0	4
Lane Flow Rate	48	60	4	339	170	4
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.077	0.094	0.006	0.462	0.286	0.006
Departure Headway (Hd)	5.719	5.638	4.832	4.912	6.055	4.887
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	620	631	734	732	590	725
Service Time	3.814	3.413	2.606	2.963	3.833	2.664
HCM Lane V/C Ratio	0.077	0.095	0.005	0.463	0.288	0.006
HCM Control Delay	9.3	9	7.6	12.2	11.3	7.7
HCM Lane LOS	A	A	A	B	B	A
HCM 95th-tile Q	0.2	0.3	0	2.5	1.2	0

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	235	184	94	73	16
Future Vol, veh/h	33	235	184	94	73	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	245	192	98	76	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	290	0	-	0	432	145
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	191	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1269	-	-	-	552	876
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	822	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1269	-	-	-	537	876
Mov Cap-2 Maneuver	-	-	-	-	537	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1269	-	-	-	537	876
HCM Lane V/C Ratio	0.027	-	-	-	0.142	0.019
HCM Control Delay (s)	7.9	-	-	-	12.8	9.2
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	641	1355	9	125	570	502	35	1122	109	137	298	173
Future Volume (veh/h)	641	1355	9	125	570	502	35	1122	109	137	298	173
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	682	1441	10	133	606	0	37	1194	116	146	317	184
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	612	1639	11	158	944	294	60	1271	567	167	1485	663
Arrive On Green	0.18	0.31	0.31	0.05	0.19	0.00	0.03	0.36	0.36	0.09	0.42	0.42
Sat Flow, veh/h	3442	5210	36	3442	5085	1583	1774	3539	1579	1774	3539	1580
Grp Volume(v), veh/h	682	938	513	133	606	0	37	1194	116	146	317	184
Grp Sat Flow(s),veh/h/ln	1721	1695	1856	1721	1695	1583	1774	1770	1579	1774	1770	1580
Q Serve(g_s), s	27.2	40.1	40.1	5.9	16.8	0.0	3.1	49.9	7.8	12.4	8.7	11.7
Cycle Q Clear(g_c), s	27.2	40.1	40.1	5.9	16.8	0.0	3.1	49.9	7.8	12.4	8.7	11.7
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	612	1066	584	158	944	294	60	1271	567	167	1485	663
V/C Ratio(X)	1.11	0.88	0.88	0.84	0.64	0.00	0.62	0.94	0.20	0.87	0.21	0.28
Avail Cap(c_a), veh/h	612	1098	601	158	991	309	244	1285	573	174	1485	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.8	49.7	49.7	72.4	57.6	0.0	72.9	47.4	33.9	68.3	28.3	29.2
Incr Delay (d2), s/veh	71.8	8.7	14.5	31.5	1.7	0.0	7.4	13.4	0.3	34.0	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.9	20.0	22.9	3.5	8.1	0.0	1.7	26.7	3.4	7.7	4.3	5.2
LnGrp Delay(d),s/veh	134.6	58.3	64.2	103.9	59.3	0.0	80.2	60.8	34.2	102.3	28.4	29.5
LnGrp LOS	F	E	E	F	E		F	E	C	F	C	C
Approach Vol, veh/h		2133			739			1347			647	
Approach Delay, s/veh		84.1			67.3			59.0			45.4	
Approach LOS		F			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	55.6	11.2	72.1	33.7	35.9	20.4	62.9
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	7.0	49.5	21.0	49.0	27.2	29.8	15.0	* 56
Max Q Clear Time (g_c+I1), s	7.9	42.1	5.1	13.7	29.2	18.8	14.4	51.9
Green Ext Time (p_c), s	0.0	6.0	0.0	5.1	0.0	4.2	0.0	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.5
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	1339	154	274	416	347	194	117	720	114	191	614
Future Volume (veh/h)	217	1339	154	274	416	347	194	117	720	114	191	614
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	224	1380	159	282	429	0	200	121	742	118	197	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	255	1811	564	387	605	514	232	573	856	102	828	652
Arrive On Green	0.15	0.36	0.36	0.11	0.33	0.00	0.13	0.31	0.31	0.06	0.24	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2754	1757	3505	2760
Grp Volume(v), veh/h	224	1380	159	282	429	0	200	121	742	118	197	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1377	1757	1752	1380
Q Serve(g_s), s	13.2	25.5	7.6	8.4	21.5	0.0	11.8	5.1	26.8	6.1	4.8	0.0
Cycle Q Clear(g_c), s	13.2	25.5	7.6	8.4	21.5	0.0	11.8	5.1	26.8	6.1	4.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	1811	564	387	605	514	232	573	856	102	828	652
V/C Ratio(X)	0.88	0.76	0.28	0.73	0.71	0.00	0.86	0.21	0.87	1.16	0.24	0.00
Avail Cap(c_a), veh/h	371	2123	661	420	615	523	250	868	1297	102	1354	1066
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.2	29.8	24.1	45.2	31.1	0.0	44.9	26.8	34.3	49.7	32.6	0.0
Incr Delay (d2), s/veh	11.3	1.5	0.3	5.8	3.9	0.0	22.4	0.2	4.2	139.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	12.0	3.3	4.3	11.6	0.0	7.2	2.6	10.7	6.9	2.3	0.0
LnGrp Delay(d),s/veh	55.5	31.3	24.4	51.0	35.0	0.0	67.3	27.0	38.5	189.3	32.8	0.0
LnGrp LOS	E	C	C	D	C		E	C	D	F	C	
Approach Vol, veh/h		1763			711			1063			315	
Approach Delay, s/veh		33.8			41.3			42.6			91.4	
Approach LOS		C			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	43.1	17.7	29.1	19.0	39.7	9.8	37.0
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	10.4	27.5	13.8	6.8	15.2	23.5	8.1	28.8
Green Ext Time (p_c), s	0.2	10.5	0.0	1.8	0.2	2.2	0.0	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.3
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/24/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1449	11	0	794	346	142	0	306	0	0	0
Future Volume (veh/h)	0	1449	11	0	794	346	142	0	306	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	1541	0	0	845	0	151	0	326			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	2045	915	0	2045	915	856	0	394			
Arrive On Green	0.00	0.58	0.00	0.00	0.58	0.00	0.25	0.00	0.25			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	1541	0	0	845	0	151	0	326			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	18.0	0.0	0.0	7.3	0.0	1.9	0.0	10.8			
Cycle Q Clear(g_c), s	0.0	18.0	0.0	0.0	7.3	0.0	1.9	0.0	10.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2045	915	0	2045	915	856	0	394			
V/C Ratio(X)	0.00	0.75	0.00	0.00	0.41	0.00	0.18	0.00	0.83			
Avail Cap(c_a), veh/h	0	2045	915	0	2045	915	1474	0	678			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	8.5	0.0	0.0	6.3	0.0	16.1	0.0	19.5			
Incr Delay (d2), s/veh	0.0	1.7	0.0	0.0	0.6	0.0	0.1	0.0	3.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	9.1	0.0	0.0	3.6	0.0	0.9	0.0	5.0			
LnGrp Delay(d),s/veh	0.0	10.3	0.0	0.0	6.9	0.0	16.2	0.0	22.8			
LnGrp LOS		B			A		B		C			
Approach Vol, veh/h		1541			845			477				
Approach Delay, s/veh		10.3			6.9			20.7				
Approach LOS		B			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		18.0		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		20.0		12.8		9.3		
Green Ext Time (p_c), s		9.4		1.0		8.0		

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/27/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	294	0	0	431	0
Future Volume (veh/h)	21	294	0	0	431	0
Number	7	4			1	16
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	21	294			431	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	1.00	1.00			1.00	1.00
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	128	1876			0	0
Arrive On Green	0.55	0.55			0.00	0.00
Sat Flow, veh/h	230	3483			0	
Grp Volume(v), veh/h	169	146			0.0	
Grp Sat Flow(s),veh/h/ln	1851	1770				
Q Serve(g_s), s	0.5	0.5				
Cycle Q Clear(g_c), s	0.5	0.5				
Prop In Lane	0.12					
Lane Grp Cap(c), veh/h	1024	979				
V/C Ratio(X)	0.16	0.15				
Avail Cap(c_a), veh/h	7296	6974				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.3	1.2				
Incr Delay (d2), s/veh	0.1	0.1				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.3	0.2				
LnGrp Delay(d),s/veh	1.3	1.3				
LnGrp LOS	A	A				
Approach Vol, veh/h		315				
Approach Delay, s/veh		1.3				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				11.4				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				45.0				
Max Q Clear Time (g_c+I1), s				2.5				
Green Ext Time (p_c), s				2.0				

Intersection Summary	
HCM 2010 Ctrl Delay	1.3
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	26	61	59	60	38	264	165	294	528	81
Future Volume (veh/h)	0	2	26	61	59	60	38	264	165	294	528	81
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	2	26	60	60	60	38	264	0	294	528	81
Adj No. of Lanes	1	1	1	1	1	2	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	868	738	108	1061	1804	178	355	256	375	749	335
Arrive On Green	0.00	0.47	0.47	0.06	0.57	0.57	0.10	0.10	0.00	0.21	0.21	0.21
Sat Flow, veh/h	1774	1863	1583	1774	1863	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	2	26	60	60	60	38	264	0	294	528	81
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.1	1.0	3.6	1.6	0.9	2.2	8.0	0.0	17.2	15.2	4.7
Cycle Q Clear(g_c), s	0.0	0.1	1.0	3.6	1.6	0.9	2.2	8.0	0.0	17.2	15.2	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	868	738	108	1061	1804	178	355	256	375	749	335
V/C Ratio(X)	0.00	0.00	0.04	0.55	0.06	0.03	0.21	0.74	0.00	0.78	0.70	0.24
Avail Cap(c_a), veh/h	177	868	738	150	1061	1804	295	589	360	529	1055	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.7	15.9	50.2	10.5	10.4	45.5	48.1	0.0	41.0	40.2	36.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	4.0	0.0	0.0	0.6	3.1	0.0	5.0	1.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	1.9	0.8	0.4	1.1	4.0	0.0	8.9	7.5	2.1
LnGrp Delay(d),s/veh	0.0	15.7	16.0	54.1	10.5	10.4	46.1	51.2	0.0	46.0	41.4	36.4
LnGrp LOS		B	B	D	B	B	D	D		D	D	D
Approach Vol, veh/h		28			180			302			903	
Approach Delay, s/veh		16.0			25.0			50.5			42.4	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	55.9		27.5	0.0	67.3		15.2
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	9.3	31.9		* 33	* 11	30.2		18.3
Max Q Clear Time (g_c+I1), s	5.6	3.0		19.2	0.0	3.6		10.0
Green Ext Time (p_c), s	0.0	0.1		4.1	0.0	0.5		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 EB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	119	93	0	0	0	0	170	243	780	465	0
Future Volume (veh/h)	145	119	93	0	0	0	0	170	243	780	465	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	132	137	93				0	170	243	780	465	0
Adj No. of Lanes	1	1	1				0	1	2	1	2	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	264	278	235				0	382	649	616	2261	0
Arrive On Green	0.15	0.15	0.15				0.00	0.21	0.21	0.35	0.65	0.00
Sat Flow, veh/h	1757	1845	1562				0	1845	3136	1757	3597	0
Grp Volume(v), veh/h	132	137	93				0	170	243	780	465	0
Grp Sat Flow(s),veh/h/ln	1757	1845	1562				0	1845	1568	1757	1752	0
Q Serve(g_s), s	2.4	2.3	1.8				0.0	2.8	2.3	12.0	1.9	0.0
Cycle Q Clear(g_c), s	2.4	2.3	1.8				0.0	2.8	2.3	12.0	1.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	264	278	235				0	382	649	616	2261	0
V/C Ratio(X)	0.50	0.49	0.40				0.00	0.45	0.37	1.27	0.21	0.00
Avail Cap(c_a), veh/h	1257	1320	1118				0	997	1694	616	3429	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.4	13.3	13.1				0.0	11.9	11.7	11.1	2.5	0.0
Incr Delay (d2), s/veh	0.5	0.5	0.4				0.0	1.2	0.5	132.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.2	0.8				0.0	1.5	1.0	28.3	0.9	0.0
LnGrp Delay(d),s/veh	13.9	13.9	13.5				0.0	13.0	12.2	143.7	2.5	0.0
LnGrp LOS	B	B	B					B	B	F	A	
Approach Vol, veh/h		362						413			1245	
Approach Delay, s/veh		13.8						12.5			91.0	
Approach LOS		B						B			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	11.1		8.2		26.1		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.0	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	14.0	4.8		4.4		3.9		
Green Ext Time (p_c), s	0.0	2.3		0.8		3.3		

Intersection Summary	
HCM 2010 Ctrl Delay	61.1
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	125	7	183	64	264	0	0	1124	411
Future Volume (veh/h)	0	0	0	125	7	183	64	264	0	0	1124	411
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				125	7	183	64	264	0	0	1124	411
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				312	17	293	130	2292	0	0	1887	801
Arrive On Green				0.19	0.19	0.19	0.07	0.65	0.00	0.00	0.51	0.51
Sat Flow, veh/h				1668	93	1565	1757	3597	0	0	3689	1565
Grp Volume(v), veh/h				132	0	183	64	264	0	0	1124	411
Grp Sat Flow(s),veh/h/ln				1761	0	1565	1757	1752	0	0	1845	1565
Q Serve(g_s), s				2.9	0.0	4.7	1.5	1.2	0.0	0.0	9.4	7.6
Cycle Q Clear(g_c), s				2.9	0.0	4.7	1.5	1.2	0.0	0.0	9.4	7.6
Prop In Lane				0.95		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				329	0	293	130	2292	0	0	1887	801
V/C Ratio(X)				0.40	0.00	0.63	0.49	0.12	0.00	0.00	0.60	0.51
Avail Cap(c_a), veh/h				1102	0	979	320	3070	0	0	2308	979
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				15.7	0.0	16.5	19.6	2.8	0.0	0.0	7.5	7.1
Incr Delay (d2), s/veh				0.6	0.0	1.6	1.1	0.0	0.0	0.0	0.4	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	2.2	0.8	0.6	0.0	0.0	4.8	3.4
LnGrp Delay(d),s/veh				16.3	0.0	18.1	20.6	2.9	0.0	0.0	8.0	7.8
LnGrp LOS				B		B	C	A			A	A
Approach Vol, veh/h					315			328			1535	
Approach Delay, s/veh					17.3			6.3			7.9	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		32.7			6.3	26.5		11.2
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		38.5			8.0	27.5		27.5
Max Q Clear Time (g_c+I1), s		3.2			3.5	11.4		6.7
Green Ext Time (p_c), s		1.8			0.0	11.1		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	184	63	74	149	119	98
Future Volume (veh/h)	184	63	74	149	119	98
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	184	63	74	149	119	98
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	376	336	196	395	623	671
Arrive On Green	0.21	0.21	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	1583	545	1097	1153	1863
Grp Volume(v), veh/h	184	63	0	223	119	98
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1641	1153	1863
Q Serve(g_s), s	2.0	0.7	0.0	2.2	1.9	0.8
Cycle Q Clear(g_c), s	2.0	0.7	0.0	2.2	4.1	0.8
Prop In Lane	1.00	1.00		0.67	1.00	
Lane Grp Cap(c), veh/h	376	336	0	591	623	671
V/C Ratio(X)	0.49	0.19	0.00	0.38	0.19	0.15
Avail Cap(c_a), veh/h	1997	1782	0	2217	1766	2516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	7.2	0.0	5.3	6.8	4.8
Incr Delay (d2), s/veh	1.0	0.3	0.0	0.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.3	0.0	1.1	0.6	0.4
LnGrp Delay(d),s/veh	8.7	7.4	0.0	5.7	6.9	4.9
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	247		223			217
Approach Delay, s/veh	8.4		5.7			6.0
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.0				13.0		9.2
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		4.2				6.1		4.0
Green Ext Time (p_c), s		1.4				0.9		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	105	2	16	55	54	5	11	33	89	5	10
Future Vol, veh/h	5	105	2	16	55	54	5	11	33	89	5	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	105	2	16	55	54	5	11	33	89	5	10
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.7	8.9	8.3	9.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	10%	5%	0%	13%	95%	0%
Vol Thru, %	22%	95%	0%	44%	5%	0%
Vol Right, %	67%	0%	100%	43%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	110	2	125	94	10
LT Vol	5	5	0	16	89	0
Through Vol	11	105	0	55	5	0
RT Vol	33	0	2	54	0	10
Lane Flow Rate	49	110	2	125	94	10
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.067	0.155	0.002	0.169	0.148	0.012
Departure Headway (Hd)	4.895	5.084	4.358	4.855	5.651	4.471
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	732	706	821	740	635	800
Service Time	2.926	2.809	2.083	2.88	3.378	2.199
HCM Lane V/C Ratio	0.067	0.156	0.002	0.169	0.148	0.013
HCM Control Delay	8.3	8.7	7.1	8.9	9.4	7.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0	0.6	0.5	0

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	260	211	31	49	29
Future Vol, veh/h	14	260	211	31	49	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	260	211	31	49	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	242	0	-	0	385	121
Stage 1	-	-	-	-	227	-
Stage 2	-	-	-	-	158	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1322	-	-	-	591	908
Stage 1	-	-	-	-	789	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1322	-	-	-	584	908
Mov Cap-2 Maneuver	-	-	-	-	584	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	854	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1322	-	-	-	584	908
HCM Lane V/C Ratio	0.011	-	-	-	0.084	0.032
HCM Control Delay (s)	7.8	-	-	-	11.7	9.1
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	723	14	248	1584	243	27	423	150	180	918	851
Future Volume (veh/h)	309	723	14	248	1584	243	27	423	150	180	918	851
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	309	723	14	248	1584	0	27	423	150	180	918	851
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	1804	35	199	1617	503	53	955	427	203	1256	562
Arrive On Green	0.09	0.35	0.35	0.06	0.32	0.00	0.03	0.27	0.27	0.11	0.35	0.35
Sat Flow, veh/h	3442	5136	99	3442	5085	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	309	477	260	248	1584	0	27	423	150	180	918	851
Grp Sat Flow(s),veh/h/ln	1721	1695	1845	1721	1695	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	12.3	14.7	14.7	8.0	42.6	0.0	2.1	13.7	10.6	13.8	31.2	49.0
Cycle Q Clear(g_c), s	12.3	14.7	14.7	8.0	42.6	0.0	2.1	13.7	10.6	13.8	31.2	49.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	326	1191	648	199	1617	503	53	955	427	203	1256	562
V/C Ratio(X)	0.95	0.40	0.40	1.24	0.98	0.00	0.51	0.44	0.35	0.88	0.73	1.51
Avail Cap(c_a), veh/h	326	1191	648	199	1617	503	270	1371	613	218	1256	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.1	33.8	33.8	65.0	46.7	0.0	66.0	41.8	40.7	60.2	38.8	44.5
Incr Delay (d2), s/veh	35.7	0.4	0.7	144.7	17.8	0.0	5.6	0.6	0.8	30.3	2.5	240.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	6.9	7.6	7.8	22.6	0.0	1.1	6.8	4.7	8.5	15.6	59.0
LnGrp Delay(d),s/veh	97.9	34.2	34.5	209.7	64.5	0.0	71.7	42.4	41.5	90.5	41.3	285.2
LnGrp LOS	F	C	C	F	E		E	D	D	F	D	F
Approach Vol, veh/h		1046			1832			600			1949	
Approach Delay, s/veh		53.1			84.1			43.5			152.4	
Approach LOS		D			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	56.0	10.1	57.0	19.6	51.4	21.8	45.3
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	8.0	48.5	21.0	49.0	13.1	43.9	17.0	* 54
Max Q Clear Time (g_c+I1), s	10.0	16.7	4.1	51.0	14.3	44.6	15.8	15.7
Green Ext Time (p_c), s	0.0	8.3	0.0	0.0	0.0	0.0	0.0	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	98.2
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	869	244	448	512	63	94	33	312	37	685	1541
Future Volume (veh/h)	174	869	244	448	512	63	94	33	312	37	685	1541
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	174	869	244	448	512	0	94	33	312	37	685	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	202	1920	598	380	696	592	201	617	916	53	877	690
Arrive On Green	0.12	0.38	0.38	0.11	0.38	0.00	0.11	0.33	0.33	0.03	0.25	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2740	1757	3505	2760
Grp Volume(v), veh/h	174	869	244	448	512	0	94	33	312	37	685	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1370	1757	1752	1380
Q Serve(g_s), s	11.4	15.1	13.3	13.0	27.9	0.0	5.8	1.4	10.0	2.4	21.3	0.0
Cycle Q Clear(g_c), s	11.4	15.1	13.3	13.0	27.9	0.0	5.8	1.4	10.0	2.4	21.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	1920	598	380	696	592	201	617	916	53	877	690
V/C Ratio(X)	0.86	0.45	0.41	1.18	0.74	0.00	0.47	0.05	0.34	0.70	0.78	0.00
Avail Cap(c_a), veh/h	336	1920	598	380	696	592	226	785	1166	92	1225	964
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.7	27.0	26.5	51.9	31.3	0.0	48.4	26.3	29.2	56.1	40.8	0.0
Incr Delay (d2), s/veh	5.7	0.8	2.1	105.1	6.8	0.0	0.6	0.0	0.2	6.2	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	7.1	6.1	11.6	15.5	0.0	2.9	0.7	3.8	1.3	10.6	0.0
LnGrp Delay(d),s/veh	56.4	27.8	28.5	157.0	38.1	0.0	49.0	26.4	29.4	62.3	43.6	0.0
LnGrp LOS	E	C	C	F	D		D	C	C	E	D	
Approach Vol, veh/h		1287			960			439			722	
Approach Delay, s/veh		31.8			93.6			33.4			44.5	
Approach LOS		C			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	49.6	17.0	33.4	17.2	49.1	7.2	43.2
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	15.0	17.1	7.8	23.3	13.4	29.9	4.4	12.0
Green Ext Time (p_c), s	0.0	8.9	0.1	5.9	0.1	1.6	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	52.1
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	328	0	0	686	32	250	0	164	0	0	0
Future Volume (veh/h)	0	328	0	0	686	32	250	0	164	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	328	0	0	686	0	250	0	164			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	2297	1028	0	2297	1028	541	0	249			
Arrive On Green	0.00	0.66	0.00	0.00	0.66	0.00	0.16	0.00	0.16			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	328	0	0	686	0	250	0	164			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	1.7	0.0	0.0	4.1	0.0	3.3	0.0	4.8			
Cycle Q Clear(g_c), s	0.0	1.7	0.0	0.0	4.1	0.0	3.3	0.0	4.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2297	1028	0	2297	1028	541	0	249			
V/C Ratio(X)	0.00	0.14	0.00	0.00	0.30	0.00	0.46	0.00	0.66			
Avail Cap(c_a), veh/h	0	2297	1028	0	2297	1028	1656	0	762			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	3.2	0.0	0.0	3.6	0.0	18.7	0.0	19.4			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.0	0.5	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	0.0	2.0	0.0	1.6	0.0	2.2			
LnGrp Delay(d),s/veh	0.0	3.3	0.0	0.0	3.9	0.0	19.2	0.0	21.6			
LnGrp LOS		A			A		B		C			
Approach Vol, veh/h		328			686			414				
Approach Delay, s/veh		3.3			3.9			20.1				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		12.0		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		3.7		6.8		6.1		
Green Ext Time (p_c), s		2.9		1.0		6.6		

Intersection Summary	
HCM 2010 Ctrl Delay	8.5
HCM 2010 LOS	A

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/27/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	1342	0	0	212	0
Future Volume (veh/h)	6	1342	0	0	212	0
Number	7	4			5	12
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	6	1342			212	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	1.00	1.00			1.00	1.00
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	11	2557			0	0
Arrive On Green	0.71	0.71			0.00	0.00
Sat Flow, veh/h	15	3709			0	
Grp Volume(v), veh/h	723	625			0.0	
Grp Sat Flow(s),veh/h/ln	1862	1770				
Q Serve(g_s), s	3.2	2.8				
Cycle Q Clear(g_c), s	3.2	2.8				
Prop In Lane	0.01					
Lane Grp Cap(c), veh/h	1316	1251				
V/C Ratio(X)	0.55	0.50				
Avail Cap(c_a), veh/h	1861	1769				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.2	1.2				
Incr Delay (d2), s/veh	0.4	0.3				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	1.5	1.3				
LnGrp Delay(d),s/veh	1.6	1.5				
LnGrp LOS	A	A				
Approach Vol, veh/h		1348				
Approach Delay, s/veh		1.5				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				17.4				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				17.4				
Max Q Clear Time (g_c+I1), s				5.2				
Green Ext Time (p_c), s				7.1				

Intersection Summary	
HCM 2010 Ctrl Delay	1.5
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	24	91	162	6	478	11	1807	81	464	490	7
Future Volume (veh/h)	96	24	91	162	6	478	11	1807	81	464	490	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	60	74	91	166	0	478	11	1807	0	464	490	7
Adj No. of Lanes	1	1	1	2	0	2	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	388	330	212	0	636	707	1411	726	382	762	341
Arrive On Green	0.07	0.21	0.21	0.06	0.00	0.20	0.40	0.40	0.00	0.22	0.22	0.22
Sat Flow, veh/h	1774	1863	1583	3548	0	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	60	74	91	166	0	478	11	1807	0	464	490	7
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.9	4.9	7.2	6.9	0.0	21.3	0.6	59.8	0.0	32.3	18.9	0.5
Cycle Q Clear(g_c), s	4.9	4.9	7.2	6.9	0.0	21.3	0.6	59.8	0.0	32.3	18.9	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	388	330	212	0	636	707	1411	726	382	762	341
V/C Ratio(X)	0.50	0.19	0.28	0.78	0.00	0.75	0.02	1.28	0.00	1.21	0.64	0.02
Avail Cap(c_a), veh/h	130	388	330	229	0	636	707	1411	726	382	762	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	49.0	49.9	69.6	0.0	56.4	27.3	45.1	0.0	58.9	53.6	46.4
Incr Delay (d2), s/veh	3.2	1.1	2.1	15.1	0.0	5.0	0.0	131.9	0.0	118.3	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.6	3.3	3.8	0.0	9.8	0.3	55.0	0.0	28.4	9.5	0.2
LnGrp Delay(d),s/veh	70.8	50.0	51.9	84.7	0.0	61.5	27.3	177.0	0.0	177.2	55.4	46.4
LnGrp LOS	E	D	D	F		E	C	F		F	E	D
Approach Vol, veh/h		225			644			1818			961	
Approach Delay, s/veh		56.3			67.4			176.1			114.2	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	35.8		36.5	14.8	34.7		64.0
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	9.0	30.5		* 32	* 11	29.2		59.8
Max Q Clear Time (g_c+I1), s	8.9	9.2		34.3	6.9	23.3		61.8
Green Ext Time (p_c), s	0.0	0.6		0.0	0.0	1.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	133.2
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 Ramps/I-580 EB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	890	95	112	0	0	0	0	311	269	348	351	0
Future Volume (veh/h)	890	95	112	0	0	0	0	311	269	348	351	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	958	0	112				0	425	193	348	351	0
Adj No. of Lanes	2	0	1				0	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1174	0	523				0	832	354	406	1821	0
Arrive On Green	0.33	0.00	0.33				0.00	0.23	0.23	0.23	0.52	0.00
Sat Flow, veh/h	3514	0	1565				0	3689	1568	1757	3597	0
Grp Volume(v), veh/h	958	0	112				0	425	193	348	351	0
Grp Sat Flow(s),veh/h/ln	1757	0	1565				0	1845	1568	1757	1752	0
Q Serve(g_s), s	11.9	0.0	2.5				0.0	4.8	5.2	9.1	2.6	0.0
Cycle Q Clear(g_c), s	11.9	0.0	2.5				0.0	4.8	5.2	9.1	2.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1174	0	523				0	832	354	406	1821	0
V/C Ratio(X)	0.82	0.00	0.21				0.00	0.51	0.55	0.86	0.19	0.00
Avail Cap(c_a), veh/h	1798	0	801				0	1426	606	440	2453	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.6	0.0	11.4				0.0	16.2	16.4	17.6	6.1	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.1				0.0	0.7	1.9	14.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	1.1				0.0	2.5	2.4	5.9	1.2	0.0
LnGrp Delay(d),s/veh	15.5	0.0	11.5				0.0	16.9	18.2	31.7	6.2	0.0
LnGrp LOS	B		B					B	B	C	A	
Approach Vol, veh/h		1070						618			699	
Approach Delay, s/veh		15.1						17.3			18.9	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.1	14.8		19.0		28.9		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.0	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	11.9	7.2		13.9		4.6		
Green Ext Time (p_c), s	0.1	3.6		2.0		2.4		

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	249	4	736	84	1133	0	0	464	123
Future Volume (veh/h)	0	0	0	249	4	736	84	1133	0	0	464	123
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				249	4	736	84	1133	0	0	464	123
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				803	13	727	133	1464	0	0	1075	455
Arrive On Green				0.46	0.46	0.46	0.08	0.42	0.00	0.00	0.29	0.29
Sat Flow, veh/h				1730	28	1567	1757	3597	0	0	3689	1563
Grp Volume(v), veh/h				253	0	736	84	1133	0	0	464	123
Grp Sat Flow(s),veh/h/ln				1758	0	1567	1757	1752	0	0	1845	1563
Q Serve(g_s), s				5.3	0.0	27.5	2.7	16.5	0.0	0.0	6.0	3.6
Cycle Q Clear(g_c), s				5.3	0.0	27.5	2.7	16.5	0.0	0.0	6.0	3.6
Prop In Lane				0.98		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				816	0	727	133	1464	0	0	1075	455
V/C Ratio(X)				0.31	0.00	1.01	0.63	0.77	0.00	0.00	0.43	0.27
Avail Cap(c_a), veh/h				816	0	727	237	1804	0	0	1214	514
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				9.9	0.0	15.9	26.6	14.8	0.0	0.0	17.0	16.2
Incr Delay (d2), s/veh				0.2	0.0	36.4	1.8	1.7	0.0	0.0	0.4	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.6	0.0	19.1	1.4	8.2	0.0	0.0	3.1	1.6
LnGrp Delay(d),s/veh				10.1	0.0	52.3	28.4	16.6	0.0	0.0	17.4	16.6
LnGrp LOS				B		F	C	B			B	B
Approach Vol, veh/h					989			1217			587	
Approach Delay, s/veh					41.5			17.4			17.2	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		28.8			7.5	21.3		30.5
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		30.5			8.0	19.5		27.5
Max Q Clear Time (g_c+I1), s		18.5			4.7	8.0		29.5
Green Ext Time (p_c), s		6.3			0.0	3.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	111	148	233	187	113	132
Future Volume (veh/h)	111	148	233	187	113	132
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	111	148	233	187	113	132
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	325	290	405	325	527	788
Arrive On Green	0.18	0.18	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1774	1583	958	769	963	1863
Grp Volume(v), veh/h	111	148	0	420	113	132
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1727	963	1863
Q Serve(g_s), s	1.3	2.0	0.0	4.5	2.4	1.1
Cycle Q Clear(g_c), s	1.3	2.0	0.0	4.5	6.9	1.1
Prop In Lane	1.00	1.00		0.45	1.00	
Lane Grp Cap(c), veh/h	325	290	0	731	527	788
V/C Ratio(X)	0.34	0.51	0.00	0.57	0.21	0.17
Avail Cap(c_a), veh/h	1839	1641	0	2148	1317	2317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	8.9	0.0	5.3	7.9	4.3
Incr Delay (d2), s/veh	0.2	0.5	0.0	0.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	0.0	2.2	0.7	0.5
LnGrp Delay(d),s/veh	8.8	9.4	0.0	6.0	8.1	4.4
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	259		420			245
Approach Delay, s/veh	9.1		6.0			6.1
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		15.2				15.2		8.9
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		6.5				8.9		4.0
Green Ext Time (p_c), s		2.8				1.2		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	54	4	9	130	237	12	27	15	172	16	4
Future Vol, veh/h	13	54	4	9	130	237	12	27	15	172	16	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	54	4	9	130	237	12	27	15	172	16	4
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	9.2	13.5	9.6	11.9
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	22%	19%	0%	2%	91%	0%
Vol Thru, %	50%	81%	0%	35%	9%	0%
Vol Right, %	28%	0%	100%	63%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	67	4	376	188	4
LT Vol	12	13	0	9	172	0
Through Vol	27	54	0	130	16	0
RT Vol	15	0	4	237	0	4
Lane Flow Rate	54	67	4	376	188	4
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.09	0.109	0.006	0.523	0.328	0.006
Departure Headway (Hd)	6.001	5.875	5.079	5.004	6.285	5.12
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	600	612	709	714	575	703
Service Time	4.01	3.586	2.779	3.084	3.989	2.82
HCM Lane V/C Ratio	0.09	0.109	0.006	0.527	0.327	0.006
HCM Control Delay	9.6	9.3	7.8	13.5	12	7.9
HCM Lane LOS	A	A	A	B	B	A
HCM 95th-tile Q	0.3	0.4	0	3.1	1.4	0

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	282	221	40	45	17
Future Vol, veh/h	35	282	221	40	45	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	282	221	40	45	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	261	0	-	0	452	131
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	211	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1300	-	-	-	536	894
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	804	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1300	-	-	-	522	894
Mov Cap-2 Maneuver	-	-	-	-	522	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	804	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1300	-	-	-	522	894
HCM Lane V/C Ratio	0.027	-	-	-	0.086	0.019
HCM Control Delay (s)	7.8	-	-	-	12.5	9.1
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	767	1598	11	150	638	602	41	1346	131	164	357	204
Future Volume (veh/h)	767	1598	11	150	638	602	41	1346	131	164	357	204
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	767	1598	11	150	638	0	41	1346	131	164	357	204
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	602	1658	11	155	973	303	64	1264	564	171	1478	660
Arrive On Green	0.17	0.32	0.32	0.05	0.19	0.00	0.04	0.36	0.36	0.10	0.42	0.42
Sat Flow, veh/h	3442	5211	36	3442	5085	1583	1774	3539	1579	1774	3539	1580
Grp Volume(v), veh/h	767	1040	569	150	638	0	41	1346	131	164	357	204
Grp Sat Flow(s),veh/h/ln	1721	1695	1856	1721	1695	1583	1774	1770	1579	1774	1770	1580
Q Serve(g_s), s	27.2	46.9	46.9	6.8	18.0	0.0	3.5	55.5	9.0	14.3	10.2	13.4
Cycle Q Clear(g_c), s	27.2	46.9	46.9	6.8	18.0	0.0	3.5	55.5	9.0	14.3	10.2	13.4
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	602	1078	591	155	973	303	64	1264	564	171	1478	660
V/C Ratio(X)	1.27	0.96	0.96	0.97	0.66	0.00	0.64	1.07	0.23	0.96	0.24	0.31
Avail Cap(c_a), veh/h	602	1080	591	155	975	304	240	1264	564	171	1478	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	52.1	52.1	74.1	58.1	0.0	74.0	50.0	35.0	69.9	29.3	30.3
Incr Delay (d2), s/veh	135.8	19.4	28.3	62.3	2.0	0.0	7.8	44.6	0.4	56.2	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.2	24.9	28.7	4.5	8.6	0.0	1.9	34.9	4.0	9.7	5.0	5.9
LnGrp Delay(d),s/veh	199.9	71.5	80.5	136.4	60.1	0.0	81.7	94.6	35.4	126.1	29.5	30.7
LnGrp LOS	F	E	F	F	E		F	F	D	F	C	C
Approach Vol, veh/h		2376			788			1518			725	
Approach Delay, s/veh		115.1			74.6			89.2			51.7	
Approach LOS		F			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	57.0	11.6	72.9	33.7	37.3	21.0	63.5
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	7.0	49.5	21.0	49.0	27.2	29.8	15.0	* 56
Max Q Clear Time (g_c+I1), s	8.8	48.9	5.5	15.4	29.2	20.0	16.3	57.5
Green Ext Time (p_c), s	0.0	0.6	0.0	5.8	0.0	4.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	93.4
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	1591	185	328	476	416	232	140	864	136	229	713
Future Volume (veh/h)	250	1591	185	328	476	416	232	140	864	136	229	713
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	250	1591	185	328	476	0	232	140	864	136	229	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	276	1802	561	366	568	483	218	639	954	89	956	753
Arrive On Green	0.16	0.36	0.36	0.11	0.31	0.00	0.12	0.35	0.35	0.05	0.27	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2755	1757	3505	2760
Grp Volume(v), veh/h	250	1591	185	328	476	0	232	140	864	136	229	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1377	1757	1752	1380
Q Serve(g_s), s	16.9	35.9	10.4	11.5	29.1	0.0	15.0	6.5	36.1	6.1	6.2	0.0
Cycle Q Clear(g_c), s	16.9	35.9	10.4	11.5	29.1	0.0	15.0	6.5	36.1	6.1	6.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	276	1802	561	366	568	483	218	639	954	89	956	753
V/C Ratio(X)	0.90	0.88	0.33	0.90	0.84	0.00	1.07	0.22	0.91	1.54	0.24	0.00
Avail Cap(c_a), veh/h	324	1852	577	366	568	483	218	758	1132	89	1182	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.1	36.5	28.3	53.3	39.1	0.0	53.0	28.0	37.7	57.5	34.2	0.0
Incr Delay (d2), s/veh	23.3	5.4	0.4	23.5	10.9	0.0	79.3	0.2	9.3	289.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	17.6	4.6	6.6	16.5	0.0	12.1	3.3	14.9	10.1	3.0	0.0
LnGrp Delay(d),s/veh	73.3	41.9	28.7	76.9	49.9	0.0	132.3	28.1	47.0	347.0	34.4	0.0
LnGrp LOS	E	D	C	E	D		F	C	D	F	C	
Approach Vol, veh/h		2026			804			1236			365	
Approach Delay, s/veh		44.6			60.9			60.9			150.9	
Approach LOS		D			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	48.4	18.7	37.2	22.7	42.4	9.8	46.1
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	13.5	37.9	17.0	8.2	18.9	31.1	8.1	38.1
Green Ext Time (p_c), s	0.0	5.4	0.0	2.2	0.1	1.2	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	60.8
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1735	0	0	948	415	151	0	366	0	0	0
Future Volume (veh/h)	0	1735	0	0	948	415	151	0	366	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	1735	0	0	948	0	151	0	366			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	1981	886	0	1981	886	935	0	430			
Arrive On Green	0.00	0.57	0.00	0.00	0.57	0.00	0.27	0.00	0.27			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	1735	0	0	948	0	151	0	366			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	24.2	0.0	0.0	9.2	0.0	1.9	0.0	12.5			
Cycle Q Clear(g_c), s	0.0	24.2	0.0	0.0	9.2	0.0	1.9	0.0	12.5			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1981	886	0	1981	886	935	0	430			
V/C Ratio(X)	0.00	0.88	0.00	0.00	0.48	0.00	0.16	0.00	0.85			
Avail Cap(c_a), veh/h	0	1981	886	0	1981	886	1428	0	657			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	10.6	0.0	0.0	7.4	0.0	15.6	0.0	19.5			
Incr Delay (d2), s/veh	0.0	4.9	0.0	0.0	0.8	0.0	0.1	0.0	5.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	12.7	0.0	0.0	4.6	0.0	0.9	0.0	6.1			
LnGrp Delay(d),s/veh	0.0	15.5	0.0	0.0	8.2	0.0	15.7	0.0	25.1			
LnGrp LOS		B			A		B		C			
Approach Vol, veh/h		1735			948			517				
Approach Delay, s/veh		15.5			8.2			22.4				
Approach LOS		B			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		19.8		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		26.2		14.5		11.2		
Green Ext Time (p_c), s		5.2		1.0		8.8		

Intersection Summary	
HCM 2010 Ctrl Delay	14.4
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/27/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	296	0	0	431	0
Future Volume (veh/h)	21	296	0	0	431	0
Number	7	4			1	16
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	21	296			431	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	1.00	1.00			1.00	1.00
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	127	1881			0	0
Arrive On Green	0.55	0.55			0.00	0.00
Sat Flow, veh/h	229	3485			0	
Grp Volume(v), veh/h	170	147			0.0	
Grp Sat Flow(s),veh/h/ln	1851	1770				
Q Serve(g_s), s	0.5	0.5				
Cycle Q Clear(g_c), s	0.5	0.5				
Prop In Lane	0.12					
Lane Grp Cap(c), veh/h	1027	982				
V/C Ratio(X)	0.17	0.15				
Avail Cap(c_a), veh/h	7275	6954				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.3	1.2				
Incr Delay (d2), s/veh	0.1	0.1				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.3	0.2				
LnGrp Delay(d),s/veh	1.3	1.3				
LnGrp LOS	A	A				
Approach Vol, veh/h		317				
Approach Delay, s/veh		1.3				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				11.5				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				45.0				
Max Q Clear Time (g_c+I1), s				2.5				
Green Ext Time (p_c), s				2.0				

Intersection Summary	
HCM 2010 Ctrl Delay	1.3
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	26	61	59	60	38	266	165	302	530	81
Future Volume (veh/h)	0	2	26	61	59	60	38	266	165	302	530	81
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	2	26	60	60	60	38	266	0	302	530	81
Adj No. of Lanes	1	1	1	1	1	2	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	859	730	108	1053	1790	179	357	257	383	763	341
Arrive On Green	0.00	0.46	0.46	0.06	0.57	0.57	0.10	0.10	0.00	0.22	0.22	0.22
Sat Flow, veh/h	1774	1863	1583	1774	1863	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	2	26	60	60	60	38	266	0	302	530	81
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.1	1.0	3.6	1.6	0.9	2.2	8.0	0.0	17.7	15.2	4.7
Cycle Q Clear(g_c), s	0.0	0.1	1.0	3.6	1.6	0.9	2.2	8.0	0.0	17.7	15.2	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	859	730	108	1053	1790	179	357	257	383	763	341
V/C Ratio(X)	0.00	0.00	0.04	0.55	0.06	0.03	0.21	0.74	0.00	0.79	0.69	0.24
Avail Cap(c_a), veh/h	177	859	730	150	1053	1790	295	589	360	529	1055	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.0	16.2	50.2	10.7	10.6	45.4	48.1	0.0	40.8	39.8	35.7
Incr Delay (d2), s/veh	0.0	0.0	0.1	4.0	0.0	0.0	0.6	3.1	0.0	5.5	1.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.5	1.9	0.8	0.4	1.1	4.1	0.0	9.2	7.6	2.1
LnGrp Delay(d),s/veh	0.0	16.0	16.3	54.1	10.8	10.6	46.0	51.1	0.0	46.2	41.0	36.0
LnGrp LOS		B	B	D	B	B	D	D		D	D	D
Approach Vol, veh/h		28			180			304			913	
Approach Delay, s/veh		16.3			25.2			50.5			42.3	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	55.3		27.9	0.0	66.8		15.3
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	7.3	31.9		* 33	* 11	30.2		18.3
Max Q Clear Time (g_c+I1), s	5.6	3.0		19.7	0.0	3.6		10.0
Green Ext Time (p_c), s	0.0	0.1		4.0	0.0	0.5		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 EB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	119	93	0	0	0	0	171	243	785	466	0
Future Volume (veh/h)	145	119	93	0	0	0	0	171	243	785	466	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	132	137	93				0	171	243	785	466	0
Adj No. of Lanes	1	1	1				0	1	2	1	2	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	264	277	235				0	383	651	615	2262	0
Arrive On Green	0.15	0.15	0.15				0.00	0.21	0.21	0.35	0.65	0.00
Sat Flow, veh/h	1757	1845	1562				0	1845	3136	1757	3597	0
Grp Volume(v), veh/h	132	137	93				0	171	243	785	466	0
Grp Sat Flow(s),veh/h/ln	1757	1845	1562				0	1845	1568	1757	1752	0
Q Serve(g_s), s	2.4	2.3	1.8				0.0	2.8	2.3	12.0	1.9	0.0
Cycle Q Clear(g_c), s	2.4	2.3	1.8				0.0	2.8	2.3	12.0	1.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	264	277	235				0	383	651	615	2262	0
V/C Ratio(X)	0.50	0.49	0.40				0.00	0.45	0.37	1.28	0.21	0.00
Avail Cap(c_a), veh/h	1256	1319	1117				0	996	1693	615	3427	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.4	13.4	13.1				0.0	11.9	11.7	11.1	2.5	0.0
Incr Delay (d2), s/veh	0.5	0.5	0.4				0.0	1.2	0.5	136.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.2	0.8				0.0	1.5	1.0	29.0	0.9	0.0
LnGrp Delay(d),s/veh	13.9	13.9	13.6				0.0	13.0	12.2	147.6	2.5	0.0
LnGrp LOS	B	B	B					B	B	F	A	
Approach Vol, veh/h		362						414			1251	
Approach Delay, s/veh		13.8						12.5			93.6	
Approach LOS		B						B			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	11.1		8.2		26.1		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.0	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	14.0	4.8		4.4		3.9		
Green Ext Time (p_c), s	0.0	2.3		0.8		3.4		

Intersection Summary	
HCM 2010 Ctrl Delay	62.8
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	125	7	183	64	265	0	0	1129	411
Future Volume (veh/h)	0	0	0	125	7	183	64	265	0	0	1129	411
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				125	7	183	64	265	0	0	1129	411
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				312	17	292	130	2293	0	0	1889	802
Arrive On Green				0.19	0.19	0.19	0.07	0.65	0.00	0.00	0.51	0.51
Sat Flow, veh/h				1668	93	1565	1757	3597	0	0	3689	1565
Grp Volume(v), veh/h				132	0	183	64	265	0	0	1129	411
Grp Sat Flow(s),veh/h/ln				1761	0	1565	1757	1752	0	0	1845	1565
Q Serve(g_s), s				2.9	0.0	4.7	1.5	1.2	0.0	0.0	9.5	7.6
Cycle Q Clear(g_c), s				2.9	0.0	4.7	1.5	1.2	0.0	0.0	9.5	7.6
Prop In Lane				0.95		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				329	0	292	130	2293	0	0	1889	802
V/C Ratio(X)				0.40	0.00	0.63	0.49	0.12	0.00	0.00	0.60	0.51
Avail Cap(c_a), veh/h				1100	0	978	319	3065	0	0	2304	978
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				15.7	0.0	16.5	19.6	2.8	0.0	0.0	7.6	7.1
Incr Delay (d2), s/veh				0.6	0.0	1.6	1.1	0.0	0.0	0.0	0.4	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	2.2	0.8	0.6	0.0	0.0	4.8	3.4
LnGrp Delay(d),s/veh				16.3	0.0	18.1	20.7	2.9	0.0	0.0	8.0	7.8
LnGrp LOS				B		B	C	A			A	A
Approach Vol, veh/h					315			329			1540	
Approach Delay, s/veh					17.4			6.3			7.9	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		32.8			6.3	26.5		11.2
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		38.5			8.0	27.5		27.5
Max Q Clear Time (g_c+I1), s		3.2			3.5	11.5		6.7
Green Ext Time (p_c), s		1.8			0.0	11.1		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	186	65	74	150	120	98
Future Volume (veh/h)	186	65	74	150	120	98
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	186	65	74	150	120	98
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	379	338	195	395	621	670
Arrive On Green	0.21	0.21	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	1583	542	1099	1152	1863
Grp Volume(v), veh/h	186	65	0	224	120	98
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1641	1152	1863
Q Serve(g_s), s	2.0	0.7	0.0	2.3	1.9	0.8
Cycle Q Clear(g_c), s	2.0	0.7	0.0	2.3	4.2	0.8
Prop In Lane	1.00	1.00		0.67	1.00	
Lane Grp Cap(c), veh/h	379	338	0	590	621	670
V/C Ratio(X)	0.49	0.19	0.00	0.38	0.19	0.15
Avail Cap(c_a), veh/h	1993	1779	0	2213	1760	2511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	7.2	0.0	5.3	6.8	4.8
Incr Delay (d2), s/veh	1.0	0.3	0.0	0.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.4	0.0	1.1	0.6	0.4
LnGrp Delay(d),s/veh	8.7	7.4	0.0	5.7	7.0	4.9
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	251		224			218
Approach Delay, s/veh	8.4		5.7			6.1
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.0				13.0		9.3
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		4.3				6.2		4.0
Green Ext Time (p_c), s		1.4				1.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	105	2	16	55	56	5	11	33	90	5	10
Future Vol, veh/h	5	105	2	16	55	56	5	11	33	90	5	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	105	2	16	55	56	5	11	33	90	5	10
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.7	8.9	8.3	9.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	10%	5%	0%	13%	95%	0%
Vol Thru, %	22%	95%	0%	43%	5%	0%
Vol Right, %	67%	0%	100%	44%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	110	2	127	95	10
LT Vol	5	5	0	16	90	0
Through Vol	11	105	0	55	5	0
RT Vol	33	0	2	56	0	10
Lane Flow Rate	49	110	2	127	95	10
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.067	0.155	0.002	0.171	0.149	0.012
Departure Headway (Hd)	4.901	5.089	4.363	4.853	5.655	4.475
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	731	706	821	740	635	800
Service Time	2.931	2.812	2.086	2.877	3.383	2.203
HCM Lane V/C Ratio	0.067	0.156	0.002	0.172	0.15	0.013
HCM Control Delay	8.3	8.7	7.1	8.9	9.4	7.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0	0.6	0.5	0

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	260	211	47	101	33
Future Vol, veh/h	16	260	211	47	101	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	260	211	47	101	33

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	258	0	-	0	397	129
Stage 1	-	-	-	-	235	-
Stage 2	-	-	-	-	162	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1304	-	-	-	580	897
Stage 1	-	-	-	-	782	-
Stage 2	-	-	-	-	850	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1304	-	-	-	573	897
Mov Cap-2 Maneuver	-	-	-	-	573	-
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	850	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1304	-	-	-	573	897
HCM Lane V/C Ratio	0.012	-	-	-	0.176	0.037
HCM Control Delay (s)	7.8	-	-	-	12.6	9.2
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	756	14	248	1594	243	27	423	150	180	918	852
Future Volume (veh/h)	312	756	14	248	1594	243	27	423	150	180	918	852
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	312	756	14	248	1594	0	27	423	150	180	918	852
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	1806	33	199	1617	503	53	955	427	203	1256	562
Arrive On Green	0.09	0.35	0.35	0.06	0.32	0.00	0.03	0.27	0.27	0.11	0.35	0.35
Sat Flow, veh/h	3442	5141	95	3442	5085	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	312	498	272	248	1594	0	27	423	150	180	918	852
Grp Sat Flow(s),veh/h/ln	1721	1695	1846	1721	1695	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	12.5	15.4	15.5	8.0	43.0	0.0	2.1	13.7	10.6	13.8	31.2	49.0
Cycle Q Clear(g_c), s	12.5	15.4	15.5	8.0	43.0	0.0	2.1	13.7	10.6	13.8	31.2	49.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	326	1191	648	199	1617	503	53	955	427	203	1256	562
V/C Ratio(X)	0.96	0.42	0.42	1.24	0.99	0.00	0.51	0.44	0.35	0.88	0.73	1.52
Avail Cap(c_a), veh/h	326	1191	648	199	1617	503	270	1371	613	218	1256	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.2	34.1	34.1	65.0	46.8	0.0	66.0	41.8	40.7	60.2	38.8	44.5
Incr Delay (d2), s/veh	37.9	0.4	0.7	144.7	19.1	0.0	5.6	0.6	0.8	30.3	2.5	241.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	7.3	8.0	7.8	22.9	0.0	1.1	6.8	4.7	8.5	15.6	59.1
LnGrp Delay(d),s/veh	100.1	34.5	34.8	209.7	65.9	0.0	71.7	42.4	41.5	90.5	41.3	286.0
LnGrp LOS	F	C	C	F	E		E	D	D	F	D	F
Approach Vol, veh/h		1082			1842			600			1950	
Approach Delay, s/veh		53.5			85.3			43.5			152.8	
Approach LOS		D			F			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	56.0	10.1	57.0	19.6	51.4	21.8	45.3
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	8.0	48.5	21.0	49.0	13.1	43.9	17.0	* 54
Max Q Clear Time (g_c+I1), s	10.0	17.5	4.1	51.0	14.5	45.0	15.8	15.7
Green Ext Time (p_c), s	0.0	8.7	0.0	0.0	0.0	0.0	0.0	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	98.5
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/27/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	888	244	448	517	63	94	33	312	37	685	1546
Future Volume (veh/h)	188	888	244	448	517	63	94	33	312	37	685	1546
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	188	888	244	448	517	0	94	33	312	37	685	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	216	1920	598	380	681	579	201	617	916	53	877	690
Arrive On Green	0.12	0.38	0.38	0.11	0.37	0.00	0.11	0.33	0.33	0.03	0.25	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2740	1757	3505	2760
Grp Volume(v), veh/h	188	888	244	448	517	0	94	33	312	37	685	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1370	1757	1752	1380
Q Serve(g_s), s	12.3	15.5	13.3	13.0	28.7	0.0	5.8	1.4	10.0	2.4	21.3	0.0
Cycle Q Clear(g_c), s	12.3	15.5	13.3	13.0	28.7	0.0	5.8	1.4	10.0	2.4	21.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	1920	598	380	681	579	201	617	916	53	877	690
V/C Ratio(X)	0.87	0.46	0.41	1.18	0.76	0.00	0.47	0.05	0.34	0.70	0.78	0.00
Avail Cap(c_a), veh/h	336	1920	598	380	681	579	226	785	1166	92	1225	964
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.2	27.1	26.5	51.9	32.3	0.0	48.4	26.3	29.2	56.1	40.8	0.0
Incr Delay (d2), s/veh	9.1	0.8	2.1	105.1	7.8	0.0	0.6	0.0	0.2	6.2	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	7.3	6.1	11.6	16.1	0.0	2.9	0.7	3.8	1.3	10.6	0.0
LnGrp Delay(d),s/veh	59.3	27.9	28.5	157.0	40.0	0.0	49.0	26.4	29.4	62.3	43.6	0.0
LnGrp LOS	E	C	C	F	D		D	C	C	E	D	
Approach Vol, veh/h		1320			965			439			722	
Approach Delay, s/veh		32.5			94.3			33.4			44.5	
Approach LOS		C			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	49.6	17.0	33.4	18.1	48.2	7.2	43.2
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	15.0	17.5	7.8	23.3	14.3	30.7	4.4	12.0
Green Ext Time (p_c), s	0.0	9.0	0.1	5.9	0.2	1.5	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	52.5
HCM 2010 LOS	D

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/27/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	330	17	0	687	32	254	0	164	0	0	0
Future Volume (veh/h)	0	330	17	0	687	32	254	0	164	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	330	0	0	687	0	254	0	164			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	2296	1027	0	2296	1027	542	0	249			
Arrive On Green	0.00	0.66	0.00	0.00	0.66	0.00	0.16	0.00	0.16			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	330	0	0	687	0	254	0	164			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	1.8	0.0	0.0	4.1	0.0	3.3	0.0	4.8			
Cycle Q Clear(g_c), s	0.0	1.8	0.0	0.0	4.1	0.0	3.3	0.0	4.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2296	1027	0	2296	1027	542	0	249			
V/C Ratio(X)	0.00	0.14	0.00	0.00	0.30	0.00	0.47	0.00	0.66			
Avail Cap(c_a), veh/h	0	2296	1027	0	2296	1027	1656	0	762			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	3.2	0.0	0.0	3.6	0.0	18.7	0.0	19.3			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.0	0.5	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	0.0	2.0	0.0	1.6	0.0	2.2			
LnGrp Delay(d),s/veh	0.0	3.3	0.0	0.0	4.0	0.0	19.2	0.0	21.5			
LnGrp LOS		A			A		B		C			
Approach Vol, veh/h		330			687			418				
Approach Delay, s/veh		3.3			4.0			20.1				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		12.0		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		3.8		6.8		6.1		
Green Ext Time (p_c), s		2.9		1.0		6.6		

Intersection Summary	
HCM 2010 Ctrl Delay	8.5
HCM 2010 LOS	A

Notes

HCM 2010 Signalized Intersection Summary
1: I-580 EB Ramps/E Standard Ave & Marine St

01/27/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	1351	0	0	212	0
Future Volume (veh/h)	6	1351	0	0	212	0
Number	7	4			5	12
Initial Q (Qb), veh	0	0			0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00
Parking Bus, Adj	1.00	1.00			1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863			1863	0
Adj Flow Rate, veh/h	6	1351			212	0
Adj No. of Lanes	0	2			2	0
Peak Hour Factor	1.00	1.00			1.00	1.00
Percent Heavy Veh, %	2	2			2	0
Cap, veh/h	11	2561			0	0
Arrive On Green	0.71	0.71			0.00	0.00
Sat Flow, veh/h	15	3709			0	
Grp Volume(v), veh/h	728	629			0.0	
Grp Sat Flow(s),veh/h/ln	1862	1770				
Q Serve(g_s), s	3.3	2.8				
Cycle Q Clear(g_c), s	3.3	2.8				
Prop In Lane	0.01					
Lane Grp Cap(c), veh/h	1319	1253				
V/C Ratio(X)	0.55	0.50				
Avail Cap(c_a), veh/h	1854	1762				
HCM Platoon Ratio	1.00	1.00				
Upstream Filter(I)	1.00	1.00				
Uniform Delay (d), s/veh	1.2	1.2				
Incr Delay (d2), s/veh	0.4	0.3				
Initial Q Delay(d3),s/veh	0.0	0.0				
%ile BackOfQ(50%),veh/ln	1.5	1.3				
LnGrp Delay(d),s/veh	1.6	1.5				
LnGrp LOS	A	A				
Approach Vol, veh/h		1357				
Approach Delay, s/veh		1.5				
Approach LOS		A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4				
Phs Duration (G+Y+Rc), s				17.5				
Change Period (Y+Rc), s				5.1				
Max Green Setting (Gmax), s				17.4				
Max Q Clear Time (g_c+I1), s				5.3				
Green Ext Time (p_c), s				7.1				

Intersection Summary	
HCM 2010 Ctrl Delay	1.5
HCM 2010 LOS	A

HCM 2010 Signalized Intersection Summary
2: Castro St & I-580 WB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	24	91	162	6	478	11	1816	81	469	491	7
Future Volume (veh/h)	96	24	91	162	6	478	11	1816	81	469	491	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	60	74	91	166	0	478	11	1816	0	469	491	7
Adj No. of Lanes	1	1	1	2	0	2	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	388	330	212	0	636	707	1411	726	382	762	341
Arrive On Green	0.07	0.21	0.21	0.06	0.00	0.20	0.40	0.40	0.00	0.22	0.22	0.22
Sat Flow, veh/h	1774	1863	1583	3548	0	3167	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	60	74	91	166	0	478	11	1816	0	469	491	7
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.9	4.9	7.2	6.9	0.0	21.3	0.6	59.8	0.0	32.3	19.0	0.5
Cycle Q Clear(g_c), s	4.9	4.9	7.2	6.9	0.0	21.3	0.6	59.8	0.0	32.3	19.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	388	330	212	0	636	707	1411	726	382	762	341
V/C Ratio(X)	0.50	0.19	0.28	0.78	0.00	0.75	0.02	1.29	0.00	1.23	0.64	0.02
Avail Cap(c_a), veh/h	130	388	330	229	0	636	707	1411	726	382	762	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	49.0	49.9	69.6	0.0	56.4	27.3	45.1	0.0	58.9	53.6	46.4
Incr Delay (d2), s/veh	3.2	1.1	2.1	15.1	0.0	5.0	0.0	134.7	0.0	123.5	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.6	3.3	3.8	0.0	9.8	0.3	55.6	0.0	28.9	9.5	0.2
LnGrp Delay(d),s/veh	70.8	50.0	51.9	84.7	0.0	61.5	27.3	179.8	0.0	182.4	55.5	46.4
LnGrp LOS	E	D	D	F		E	C	F		F	E	D
Approach Vol, veh/h		225			644			1827			967	
Approach Delay, s/veh		56.3			67.4			178.8			117.0	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	35.8		36.5	14.8	34.7		64.0
Change Period (Y+Rc), s	4.7	4.6		* 4.2	* 4.7	4.6		4.2
Max Green Setting (Gmax), s	9.0	30.5		* 32	* 11	29.2		59.8
Max Q Clear Time (g_c+I1), s	8.9	9.2		34.3	6.9	23.3		61.8
Green Ext Time (p_c), s	0.0	0.6		0.0	0.0	1.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	135.4
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
3: Canal Blvd & I-580 Ramps/I-580 EB Ramps

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	890	95	112	0	0	0	0	312	269	352	352	0
Future Volume (veh/h)	890	95	112	0	0	0	0	312	269	352	352	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	958	0	112				0	425	194	352	352	0
Adj No. of Lanes	2	0	1				0	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3				0	3	3	3	3	0
Cap, veh/h	1173	0	522				0	832	353	410	1826	0
Arrive On Green	0.33	0.00	0.33				0.00	0.23	0.23	0.23	0.52	0.00
Sat Flow, veh/h	3514	0	1565				0	3689	1568	1757	3597	0
Grp Volume(v), veh/h	958	0	112				0	425	194	352	352	0
Grp Sat Flow(s),veh/h/ln	1757	0	1565				0	1845	1568	1757	1752	0
Q Serve(g_s), s	12.0	0.0	2.5				0.0	4.9	5.3	9.3	2.6	0.0
Cycle Q Clear(g_c), s	12.0	0.0	2.5				0.0	4.9	5.3	9.3	2.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1173	0	522				0	832	353	410	1826	0
V/C Ratio(X)	0.82	0.00	0.21				0.00	0.51	0.55	0.86	0.19	0.00
Avail Cap(c_a), veh/h	1788	0	796				0	1417	602	438	2438	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.7	0.0	11.5				0.0	16.3	16.5	17.7	6.1	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.1				0.0	0.7	1.9	14.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	1.1				0.0	2.6	2.4	6.2	1.2	0.0
LnGrp Delay(d),s/veh	15.7	0.0	11.6				0.0	17.0	18.4	32.3	6.2	0.0
LnGrp LOS	B		B					B	B	C	A	
Approach Vol, veh/h		1070						619			704	
Approach Delay, s/veh		15.3						17.4			19.3	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.2	14.9		19.1		29.1		
Change Period (Y+Rc), s	3.0	4.0		3.0		4.0		
Max Green Setting (Gmax), s	12.0	18.5		24.5		33.5		
Max Q Clear Time (g_c+I1), s	11.3	7.3		14.0		4.6		
Green Ext Time (p_c), s	0.1	3.6		1.9		2.4		

Intersection Summary	
HCM 2010 Ctrl Delay	17.0
HCM 2010 LOS	B

Notes

HCM 2010 Signalized Intersection Summary
4: Canal Blvd & I-580 WB Ramps

01/27/2020

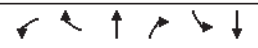


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	249	4	745	84	1134	0	0	468	123
Future Volume (veh/h)	0	0	0	249	4	745	84	1134	0	0	468	123
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h				249	4	745	84	1134	0	0	468	123
Adj No. of Lanes				0	2	0	1	2	0	0	2	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	3	0	3	3	0	0	3	3
Cap, veh/h				803	13	727	133	1465	0	0	1075	456
Arrive On Green				0.46	0.46	0.46	0.08	0.42	0.00	0.00	0.29	0.29
Sat Flow, veh/h				1730	28	1567	1757	3597	0	0	3689	1563
Grp Volume(v), veh/h				253	0	745	84	1134	0	0	468	123
Grp Sat Flow(s),veh/h/ln				1758	0	1567	1757	1752	0	0	1845	1563
Q Serve(g_s), s				5.3	0.0	27.5	2.8	16.5	0.0	0.0	6.1	3.6
Cycle Q Clear(g_c), s				5.3	0.0	27.5	2.8	16.5	0.0	0.0	6.1	3.6
Prop In Lane				0.98		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				816	0	727	133	1465	0	0	1075	456
V/C Ratio(X)				0.31	0.00	1.02	0.63	0.77	0.00	0.00	0.44	0.27
Avail Cap(c_a), veh/h				816	0	727	237	1803	0	0	1214	514
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				9.9	0.0	15.9	26.6	14.8	0.0	0.0	17.0	16.1
Incr Delay (d2), s/veh				0.2	0.0	39.8	1.8	1.7	0.0	0.0	0.4	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.6	0.0	19.8	1.4	8.2	0.0	0.0	3.1	1.6
LnGrp Delay(d),s/veh				10.1	0.0	55.7	28.4	16.6	0.0	0.0	17.4	16.6
LnGrp LOS				B		F	C	B			B	B
Approach Vol, veh/h					998			1218			591	
Approach Delay, s/veh					44.1			17.4			17.3	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		28.8			7.5	21.3		30.5
Change Period (Y+Rc), s		4.0			3.0	4.0		3.0
Max Green Setting (Gmax), s		30.5			8.0	19.5		27.5
Max Q Clear Time (g_c+I1), s		18.5			4.8	8.1		29.5
Green Ext Time (p_c), s		6.3			0.0	3.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	112	149	233	189	115	132
Future Volume (veh/h)	112	149	233	189	115	132
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	112	149	233	189	115	132
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	325	290	405	329	527	792
Arrive On Green	0.18	0.18	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1774	1583	953	773	961	1863
Grp Volume(v), veh/h	112	149	0	422	115	132
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1726	961	1863
Q Serve(g_s), s	1.3	2.1	0.0	4.5	2.5	1.1
Cycle Q Clear(g_c), s	1.3	2.1	0.0	4.5	7.0	1.1
Prop In Lane	1.00	1.00		0.45	1.00	
Lane Grp Cap(c), veh/h	325	290	0	734	527	792
V/C Ratio(X)	0.34	0.51	0.00	0.57	0.22	0.17
Avail Cap(c_a), veh/h	1828	1631	0	2134	1306	2303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	8.9	0.0	5.3	8.0	4.3
Incr Delay (d2), s/veh	0.2	0.5	0.0	0.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	0.0	2.3	0.7	0.5
LnGrp Delay(d),s/veh	8.9	9.5	0.0	6.0	8.2	4.4
LnGrp LOS	A	A		A	A	A
Approach Vol, veh/h	261		422			247
Approach Delay, s/veh	9.2		6.0			6.2
Approach LOS	A		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		15.3				15.3		8.9
Change Period (Y+Rc), s		5.0				5.0		4.5
Max Green Setting (Gmax), s		30.0				30.0		25.0
Max Q Clear Time (g_c+I1), s		6.5				9.0		4.1
Green Ext Time (p_c), s		2.8				1.2		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	54	4	9	130	238	12	27	15	174	16	4
Future Vol, veh/h	13	54	4	9	130	238	12	27	15	174	16	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	54	4	9	130	238	12	27	15	174	16	4
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	9.2	13.6	9.6	12
HCM LOS	A	B	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	22%	19%	0%	2%	92%	0%
Vol Thru, %	50%	81%	0%	34%	8%	0%
Vol Right, %	28%	0%	100%	63%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	67	4	377	190	4
LT Vol	12	13	0	9	174	0
Through Vol	27	54	0	130	16	0
RT Vol	15	0	4	238	0	4
Lane Flow Rate	54	67	4	377	190	4
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.09	0.109	0.006	0.525	0.332	0.006
Departure Headway (Hd)	6.011	5.881	5.09	5.009	6.289	5.12
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	599	612	707	713	576	703
Service Time	4.019	3.597	2.79	3.092	3.993	2.823
HCM Lane V/C Ratio	0.09	0.109	0.006	0.529	0.33	0.006
HCM Control Delay	9.6	9.3	7.8	13.6	12.1	7.9
HCM Lane LOS	A	A	A	B	B	A
HCM 95th-tile Q	0.3	0.4	0	3.1	1.4	0

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	39	282	221	100	80	19
Future Vol, veh/h	39	282	221	100	80	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	282	221	100	80	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	321	0	-	0	490	161
Stage 1	-	-	-	-	271	-
Stage 2	-	-	-	-	219	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1236	-	-	-	507	855
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	796	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1236	-	-	-	491	855
Mov Cap-2 Maneuver	-	-	-	-	491	-
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	796	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1236	-	-	-	491	855
HCM Lane V/C Ratio	0.032	-	-	-	0.163	0.022
HCM Control Delay (s)	8	-	-	-	13.8	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	769	1620	11	150	676	602	41	1346	131	164	357	207
Future Volume (veh/h)	769	1620	11	150	676	602	41	1346	131	164	357	207
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	769	1620	11	150	676	0	41	1346	131	164	357	207
Adj No. of Lanes	2	3	0	2	3	1	1	2	1	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	602	1659	11	155	975	303	64	1263	564	171	1477	660
Arrive On Green	0.17	0.32	0.32	0.05	0.19	0.00	0.04	0.36	0.36	0.10	0.42	0.42
Sat Flow, veh/h	3442	5211	35	3442	5085	1583	1774	3539	1579	1774	3539	1580
Grp Volume(v), veh/h	769	1054	577	150	676	0	41	1346	131	164	357	207
Grp Sat Flow(s),veh/h/ln	1721	1695	1856	1721	1695	1583	1774	1770	1579	1774	1770	1580
Q Serve(g_s), s	27.2	47.8	47.8	6.8	19.3	0.0	3.5	55.5	9.0	14.3	10.2	13.7
Cycle Q Clear(g_c), s	27.2	47.8	47.8	6.8	19.3	0.0	3.5	55.5	9.0	14.3	10.2	13.7
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	602	1079	591	155	975	303	64	1263	564	171	1477	660
V/C Ratio(X)	1.28	0.98	0.98	0.97	0.69	0.00	0.64	1.07	0.23	0.96	0.24	0.31
Avail Cap(c_a), veh/h	602	1079	591	155	975	303	240	1263	564	171	1477	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.2	52.4	52.4	74.1	58.6	0.0	74.0	50.0	35.1	69.9	29.3	30.4
Incr Delay (d2), s/veh	137.3	21.9	31.2	62.4	2.5	0.0	7.8	44.8	0.4	56.3	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.4	25.7	29.6	4.6	9.2	0.0	1.9	34.9	4.0	9.7	5.0	6.0
LnGrp Delay(d),s/veh	201.5	74.3	83.6	136.6	61.1	0.0	81.8	94.8	35.4	126.2	29.5	30.8
LnGrp LOS	F	E	F	F	E		F	F	D	F	C	C
Approach Vol, veh/h		2400			826			1518			728	
Approach Delay, s/veh		117.3			74.8			89.3			51.7	
Approach LOS		F			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	57.0	11.6	72.9	33.7	37.3	21.0	63.5
Change Period (Y+Rc), s	7.0	7.5	6.0	8.0	6.5	7.5	6.0	* 8
Max Green Setting (Gmax), s	7.0	49.5	21.0	49.0	27.2	29.8	15.0	* 56
Max Q Clear Time (g_c+I1), s	8.8	49.8	5.5	15.7	29.2	21.3	16.3	57.5
Green Ext Time (p_c), s	0.0	0.0	0.0	5.8	0.0	3.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	94.4
HCM 2010 LOS	F

Notes

HCM 2010 Signalized Intersection Summary
9: Blume Dr/I-80 WB Off-Ramp & Richmond Pkwy

01/27/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	1604	185	328	495	416	232	140	864	136	229	732
Future Volume (veh/h)	259	1604	185	328	495	416	232	140	864	136	229	732
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	259	1604	185	328	495	0	232	140	864	136	229	0
Adj No. of Lanes	1	3	1	2	1	1	1	1	2	1	2	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	285	1804	562	366	560	476	217	639	954	88	956	753
Arrive On Green	0.16	0.36	0.36	0.11	0.30	0.00	0.12	0.35	0.35	0.05	0.27	0.00
Sat Flow, veh/h	1757	5036	1568	3408	1845	1568	1757	1845	2755	1757	3505	2760
Grp Volume(v), veh/h	259	1604	185	328	495	0	232	140	864	136	229	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1704	1845	1568	1757	1845	1377	1757	1752	1380
Q Serve(g_s), s	17.6	36.3	10.4	11.5	31.0	0.0	15.0	6.5	36.2	6.1	6.2	0.0
Cycle Q Clear(g_c), s	17.6	36.3	10.4	11.5	31.0	0.0	15.0	6.5	36.2	6.1	6.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	1804	562	366	560	476	217	639	954	88	956	753
V/C Ratio(X)	0.91	0.89	0.33	0.90	0.88	0.00	1.07	0.22	0.91	1.54	0.24	0.00
Avail Cap(c_a), veh/h	323	1849	576	366	560	476	217	756	1130	88	1180	929
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.9	36.6	28.3	53.4	40.2	0.0	53.1	28.0	37.7	57.5	34.3	0.0
Incr Delay (d2), s/veh	24.8	5.8	0.4	23.8	15.7	0.0	79.9	0.2	9.4	290.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	17.7	4.6	6.6	18.3	0.0	12.1	3.3	14.9	10.1	3.0	0.0
LnGrp Delay(d),s/veh	74.7	42.4	28.7	77.2	55.9	0.0	133.0	28.2	47.1	348.1	34.5	0.0
LnGrp LOS	E	D	C	E	E		F	C	D	F	C	
Approach Vol, veh/h		2048			823			1236			365	
Approach Delay, s/veh		45.2			64.4			61.1			151.3	
Approach LOS		D			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	48.5	18.7	37.3	23.4	41.9	9.8	46.2
Change Period (Y+Rc), s	3.7	5.1	3.7	* 4.2	3.7	5.1	3.7	* 4.2
Max Green Setting (Gmax), s	13.0	44.5	15.0	* 41	22.3	35.2	6.1	* 50
Max Q Clear Time (g_c+I1), s	13.5	38.3	17.0	8.2	19.6	33.0	8.1	38.2
Green Ext Time (p_c), s	0.0	5.1	0.0	2.2	0.1	0.7	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	61.8
HCM 2010 LOS	E

Notes

HCM 2010 Signalized Intersection Summary
10: I-80 EB Off-Ramp/I-80 EB On-Ramp & Richmond Pkwy

01/27/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1737	11	0	951	415	167	0	366	0	0	0
Future Volume (veh/h)	0	1737	11	0	951	415	167	0	366	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	0	1737	0	0	951	0	167	0	366			
Adj No. of Lanes	0	2	1	0	2	1	2	0	1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Percent Heavy Veh, %	0	3	3	0	3	3	3	0	3			
Cap, veh/h	0	1980	886	0	1980	886	937	0	431			
Arrive On Green	0.00	0.56	0.00	0.00	0.56	0.00	0.27	0.00	0.27			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	3408	0	1568			
Grp Volume(v), veh/h	0	1737	0	0	951	0	167	0	366			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1704	0	1568			
Q Serve(g_s), s	0.0	24.3	0.0	0.0	9.2	0.0	2.1	0.0	12.5			
Cycle Q Clear(g_c), s	0.0	24.3	0.0	0.0	9.2	0.0	2.1	0.0	12.5			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1980	886	0	1980	886	937	0	431			
V/C Ratio(X)	0.00	0.88	0.00	0.00	0.48	0.00	0.18	0.00	0.85			
Avail Cap(c_a), veh/h	0	1980	886	0	1980	886	1427	0	657			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	10.7	0.0	0.0	7.4	0.0	15.7	0.0	19.5			
Incr Delay (d2), s/veh	0.0	5.0	0.0	0.0	0.8	0.0	0.1	0.0	5.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	12.9	0.0	0.0	4.6	0.0	1.0	0.0	6.1			
LnGrp Delay(d),s/veh	0.0	15.6	0.0	0.0	8.2	0.0	15.8	0.0	25.0			
LnGrp LOS		B			A		B		C			
Approach Vol, veh/h		1737			951			533				
Approach Delay, s/veh		15.6			8.2			22.1				
Approach LOS		B			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		37.0		19.8		37.0		
Change Period (Y+Rc), s		4.9		* 4.2		4.9		
Max Green Setting (Gmax), s		32.1		* 24		32.1		
Max Q Clear Time (g_c+I1), s		26.3		14.5		11.2		
Green Ext Time (p_c), s		5.2		1.1		8.8		

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Notes

Appendix B

Turn Lane Warrant Analyses

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Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Markovich Lane/Project Driveway
Study Scenario: AM Cumulative plus Project

Direction of Analysis Street: North/South
Cross Street Intersects: From the West

Markovich Lane

Southbound Volumes (veh/hr)
Through Volume = 78
Right Turn Volume = 0

Southbound Speed Limit: 15 mph
Southbound Configuration: 2 Lanes - Undivided

Project Driveway

Markovich Lane

Northbound Volumes (veh/hr)
45 = Through Volume
19 = Left Turn Volume

Northbound Speed Limit: 15 mph
Northbound Configuration: 2 Lanes - Undivided

Southbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	1050.1
Advancing Volume	Va =	78
If AV<Va then warrant is met		No

Right Turn Lane Warranted: **NO**

Southbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

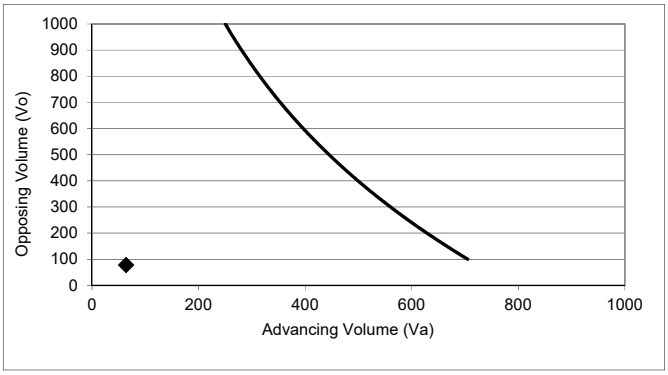
2. Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	78
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Northbound Left Turn Lane Warrants

Percentage Left Turns %lt 29.7 %
Advancing Volume Threshold AV 723 veh/hr
If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 15 mph
Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: Markovich Lane/Project Driveway
Study Scenario: PM Cumulative plus Project

Direction of Analysis Street: North/South
Cross Street Intersects: From the West

Markovich Lane

Southbound Volumes (veh/hr)
Through Volume = 62
Right Turn Volume = 0

Southbound Speed Limit: 15 mph
Southbound Configuration: 2 Lanes - Undivided

Project Driveway

Markovich Lane

Northbound Volumes (veh/hr)
75 = Through Volume
64 = Left Turn Volume

Northbound Speed Limit: 15 mph
Northbound Configuration: 2 Lanes - Undivided

Southbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	1050.1
Advancing Volume	Va =	62
If AV<Va then warrant is met		No

Right Turn Lane Warranted: **NO**

Southbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

NOT WARRANTED - Less than 20 vehicles

2. Check advance volume threshold criteria for taper

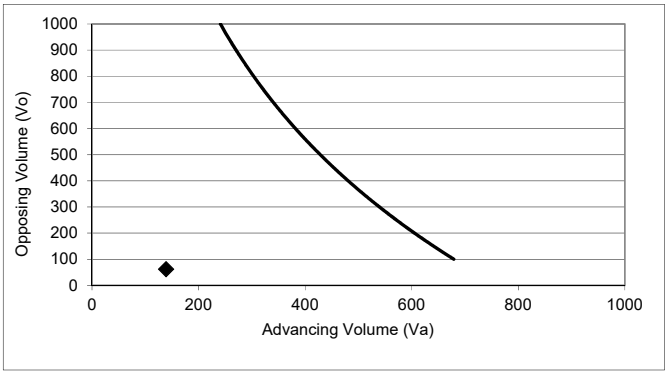
Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	62
If AV<Va then warrant is met		-

Right Turn Taper Warranted: **NO**

Northbound Left Turn Lane Warrants

Percentage Left Turns	%lt	46.0 %
Advancing Volume Threshold	AV	709 veh/hr

If AV<Va then warrant is met



◆ Study Intersection
Two lane roadway warrant threshold for: 15 mph
Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.
The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.

Appendix C

Signal Warrant Analyses

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Warrant 3: Peak-Hour Volumes and Delay

Giant Road & Giant Highway
City of Richmond

Project Name: TIS for the Richmond Country Club

Intersection: 1

	Major Street	Minor Street
Street Name	Giant Road	Giant Highway
Direction	E-W	N-S
Number of Lanes	1	1
Approach Speed	25	25

Population less than 10,000? No
Date of Count: Wednesday, November 6, 2019
Scenario: AM Cumulative + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.27 vehicle-hours

Condition A2 — Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 105 vph

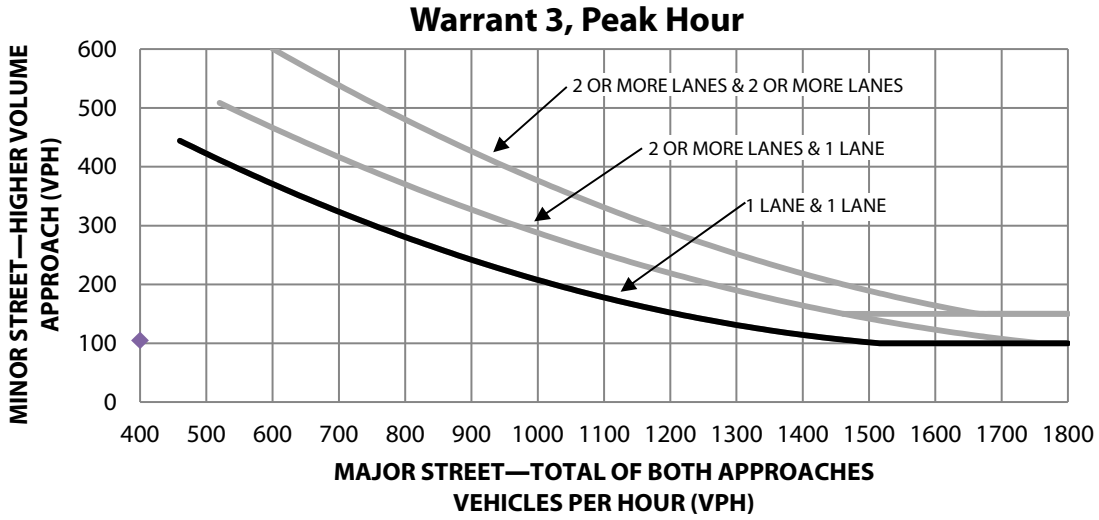
Condition A3 — Not Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 393 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Giant Road & Giant Highway
City of Richmond

Project Name: TIS for the Richmond Country Club

Intersection: 1

	Major Street	Minor Street
Street Name	Giant Road	Giant Highway
Direction	E-W	N-S
Number of Lanes	1	1
Approach Speed	25	25

Population less than 10,000? No
Date of Count: Wednesday, November 6, 2019
Scenario: PM Cumulative + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.65 vehicle-hours

Condition A2 — Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 194 vph

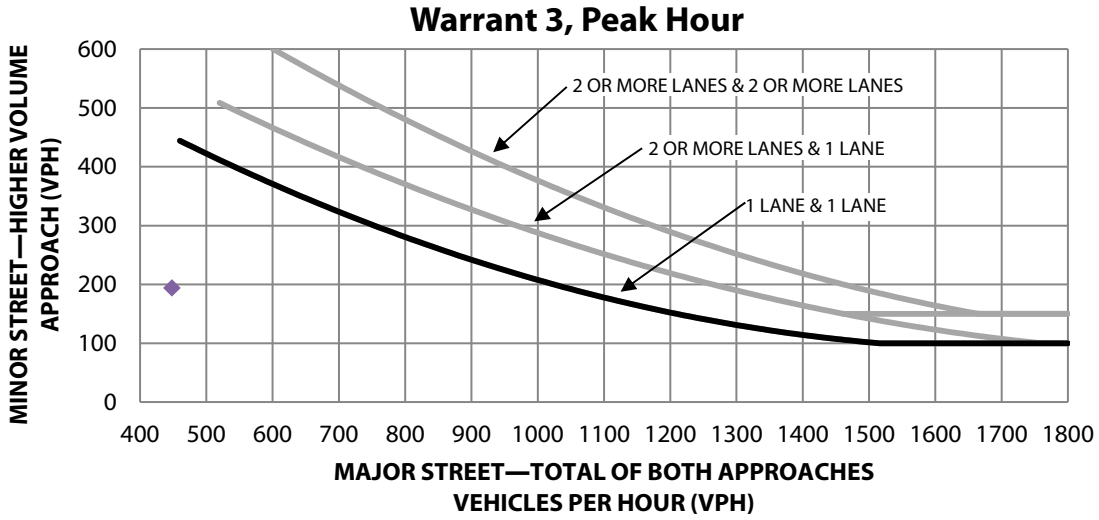
Condition A3 — Not Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 696 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Richmond Pkwy Ramp & Markovich Lane
City of Richmond

Project Name: TIS for the Richmond Country Club

Intersection: 1

	Major Street	Minor Street
Street Name	Richmond Pkwy Ramp	Markovich Lane
Direction	E-W	N-S
Number of Lanes	1	1
Approach Speed	25	25

Population less than 10,000? No
Date of Count: Wednesday, November 6, 2019
Scenario: AM Cumulative + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.44 vehicle-hours

Condition A2 — Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 134 vph

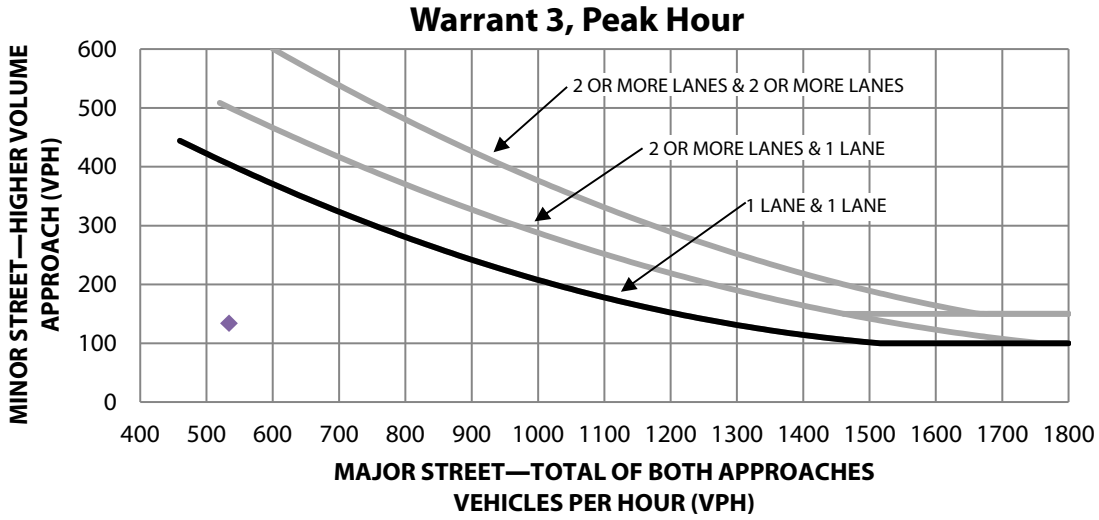
Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 668 vph

Condition B — Not Met

The plotted point falls above the curve



Warrant 3: Peak-Hour Volumes and Delay

Richmond Pkwy Ramp & Markovich Lane
City of Richmond

Project Name: TIS for the Richmond Country Club

Intersection: 1

	Major Street	Minor Street
Street Name	Richmond Pkwy Ramp	Markovich Lane
Direction	E-W	N-S
Number of Lanes	1	1
Approach Speed	25	25

Population less than 10,000? No
Date of Count: Wednesday, November 6, 2019
Scenario: PM Cumulative + Project

Warrant 3 Met?: Met when either Condition A or B is met — **No**

Condition A: Met when conditions A1, A2, and A3 are met — Not Met

Condition A1 — Not Met

The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one lane approach, or five vehicle-hours for a two-lane approach

Minor Approach Delay: 0.35 vehicle-hours

Condition A2 — Not Met

The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic of 150 vph for two moving lanes

Minor Approach Volume: 99 vph

Condition A3 — Met

The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more appraches or 650 vph for intersections with three approaches

Total Entering Volume: 741 vph

Condition B — Not Met

The plotted point falls above the curve

