INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

EMWD Well 204

Lead Agency

Eastern Municipal Water District
Post Office Box 8300
Perris, CA 92572

Assisted by

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Draft, February 3, 2020

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List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	Full Phrase or Description
AB	Assembly Bill
ADA	Americans with Disabilities Act
AFY	Acre Feet Per Year
AMSL	Above Mean Sea Level
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
BAU	Business As Usual
BGS	Below Ground Surface
BTU	British Thermal Unit
CA	California
CAA	Clean Air Act
Cal-EPA	California Environmental Protection Agency
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	Methane
CHRIS-ERC	California Hist. Resources Information System – Eastern Information Center
CNRA	California Natura Resources Agency
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalents
DPM	Diesel Particulate Matter
EMWD	Eastern Municipal Water District
EPA	Environmental Protection Agency
F	Fahrenheit
GHG	Greenhouse Gas(es)
GPM	Gallons Per Minute
GWP	Global Warming Potential
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons
HR	Hour

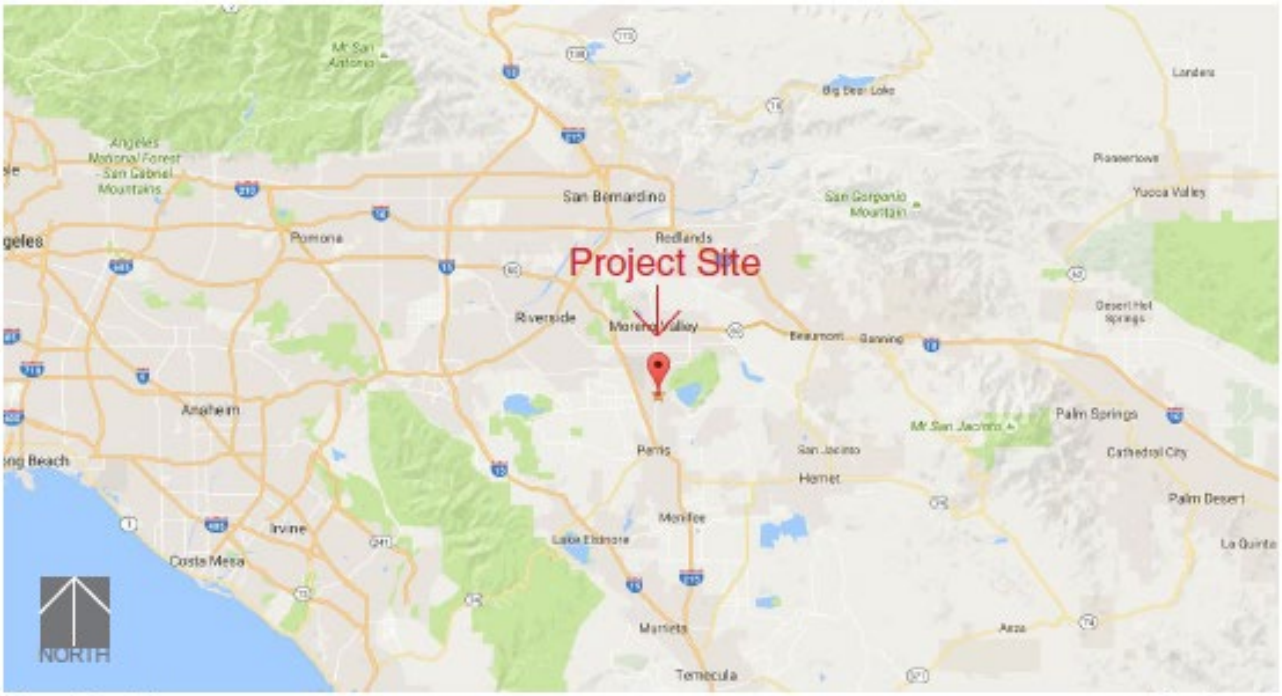
List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	Full Phrase or Description
IPCC	Intergovernmental Panel on Climate Change
KBtu	Thousand British Thermal Units
KSF	Thousand Square Feet
KWH	Kilowatt-hours
LCFS	Low Carbon Fuel Standard
LST	Localized Significance Threshold
m^3	Cubic Meter
MG	Milligrams
MGAL	Million Gallons (of water)
MPO	Metropolitan Planning Organization
MTCO2e	Metric Tons of Carbon Dioxide Equivalents
MWhrs	Megawatt-hours
NAAQS	National Ambient Air Quality Standards
NOAA	National Oceanic and Atmospheric Administration
N_2O	Nitrous Oxide
NO_2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
O_3	Ozone
PFAs	Perfluoroalkyl Substances
PFCs	Perfluorocarbons
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
PPB	Parts Per Billion
PPM	Parts Per Million
PPT	Parts Per Trillion
PM	Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
PM_{10}	Coarse Particulate Matter
PRC	Public Resources Code
PVCC SP	Perris Valley Commerce Center Specific Plan
ROG	Reactive Organic Gases
ROW	Right of Way
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition System
SCAG	Southern California Association of Governments

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	**Full Phrase or Description**
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SF	Square Feet
SF_6	Sulfur Hexafluoride
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_4^{2-}	Sulfates
SO_x	Sulfates
SPEIR	Specific Plan Environmental Impact Report
SRA	Source Receptor Area
TAC	Toxic Air Contaminants
TDM	Travel Demand Management
TIS	Transportation Impact Study
U.N.	United Nations
U.S.	United States
U.S. EPA	United States Environmental Protection Agency
V.	Version
VMT	Vehicle Miles Travelled
VOC	Volatile Organic Compounds
ZEV	Zero Emission Vehicle
µg	Micrograms
§	Section
°	Degrees

CEQA Environmental Checklist Form
Initial Study and Mitigated Negative Declaration

Project Information

1. Project Title:	Eastern Municipal Water District Well 204
2. Lead Agency Name and Address:	Eastern Municipal Water District Post Office Box 8300 Perris, CA 92572
3. Contact:	Joseph Broadhead Principal Water Resources Specialist-CEQA Eastern Municipal Water District (951) 928-3777 ext. 4545 Email: broadhej@emwd.org
4. Project Location:	115 East Nance Street Perris, CA 92571 Total Project Area: 2.5 gross acres, 2.39 net acres Assessor's Parcel No: 302-110-028 Map: USGS Perris 7.5 Minute Quadrangle Map Section, Township & Range: Section 5, Township 4 South, Range 3 West of the San Bernardino Base and Meridian Latitude: 33° 51' 17.0" N Longitude: 117° 13' 23.3" W Elevation: 1461 feet above mean sea level (amsl)
5. Project Sponsor's Name and Address:	Eastern Municipal Water District, 2270 Trumble Road, Perris, CA
6. General Plan Designation:	Perris Valley Commerce Center Specific Plan: Business Professional Office
7. Zoning:	PVCC SP - Perris Valley Commerce Center Specific Plan
8. Project Description:	Eastern Municipal Water District (EMWD) is proposing to construct and operate a new potable groundwater production well (Project) located on East Nance Street (APN 302-110-028), just east of Perris Boulevard and west of Redlands Avenue in the City of Perris (City) (See Figure 1). The proposed Project is situated in the Perris North Groundwater Management Zone and would provide water to the local community and surrounding areas. The proposed Project consists of three phases: Phase 1 – Drilling and Testing, Phase 2 – Equipping, and Phase 3 – Operation and Maintenance. See Figures 2 and 3. It is anticipated that the proposed project would produce approximately 1,000 to 3,000 acre-feet per year (AFY) of potable water from the well at production rates ranging between 600 and 2,000 gallons per minute (gpm). The first two project phases and components are summarized in Table 1 below, and described in greater detail in the following section.



Source: Google Maps

Regional



Source: Google Maps

Vicinity

Figure 1: Regional and Vicinity Map

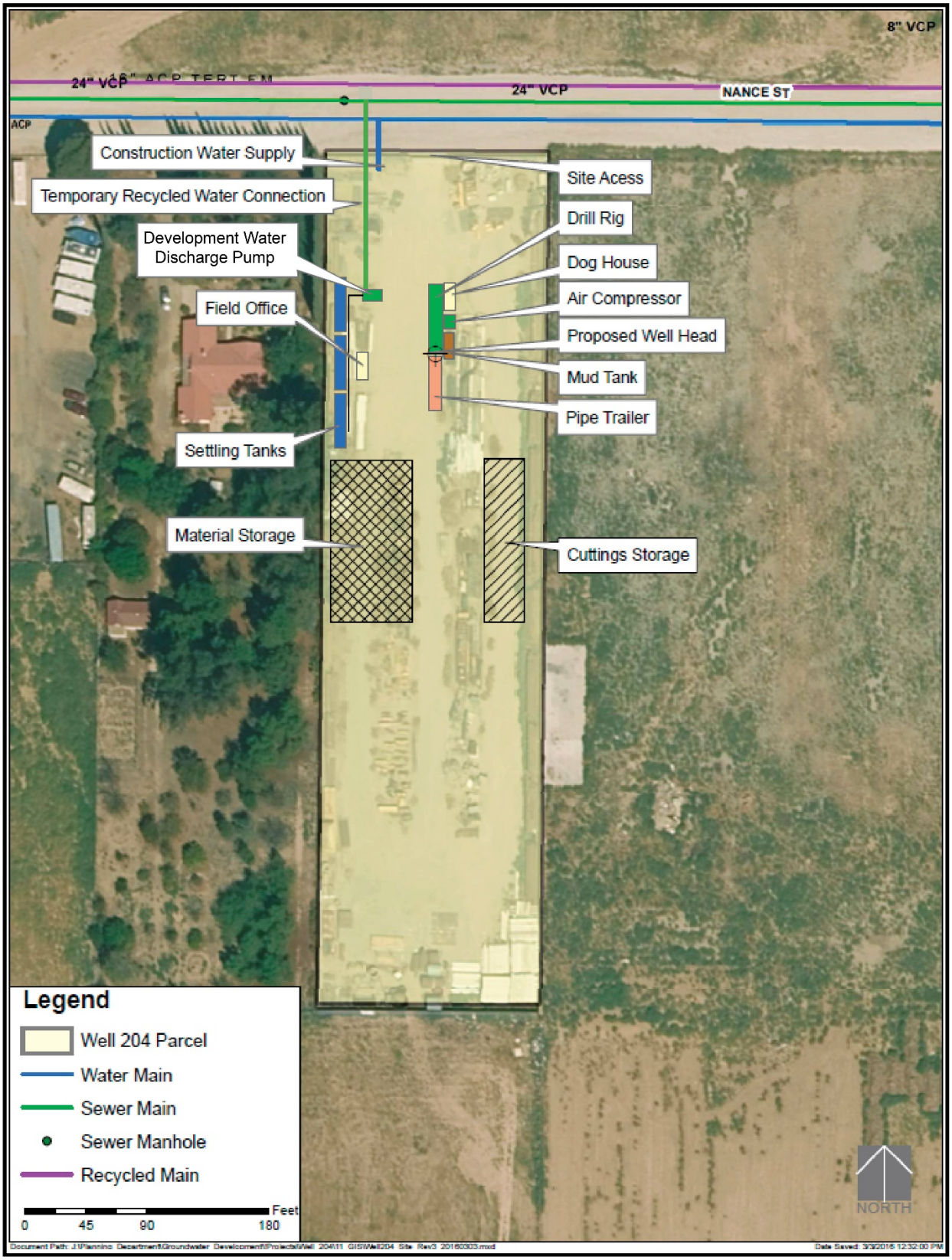


Figure 2: Phase I - Drilling and Testing

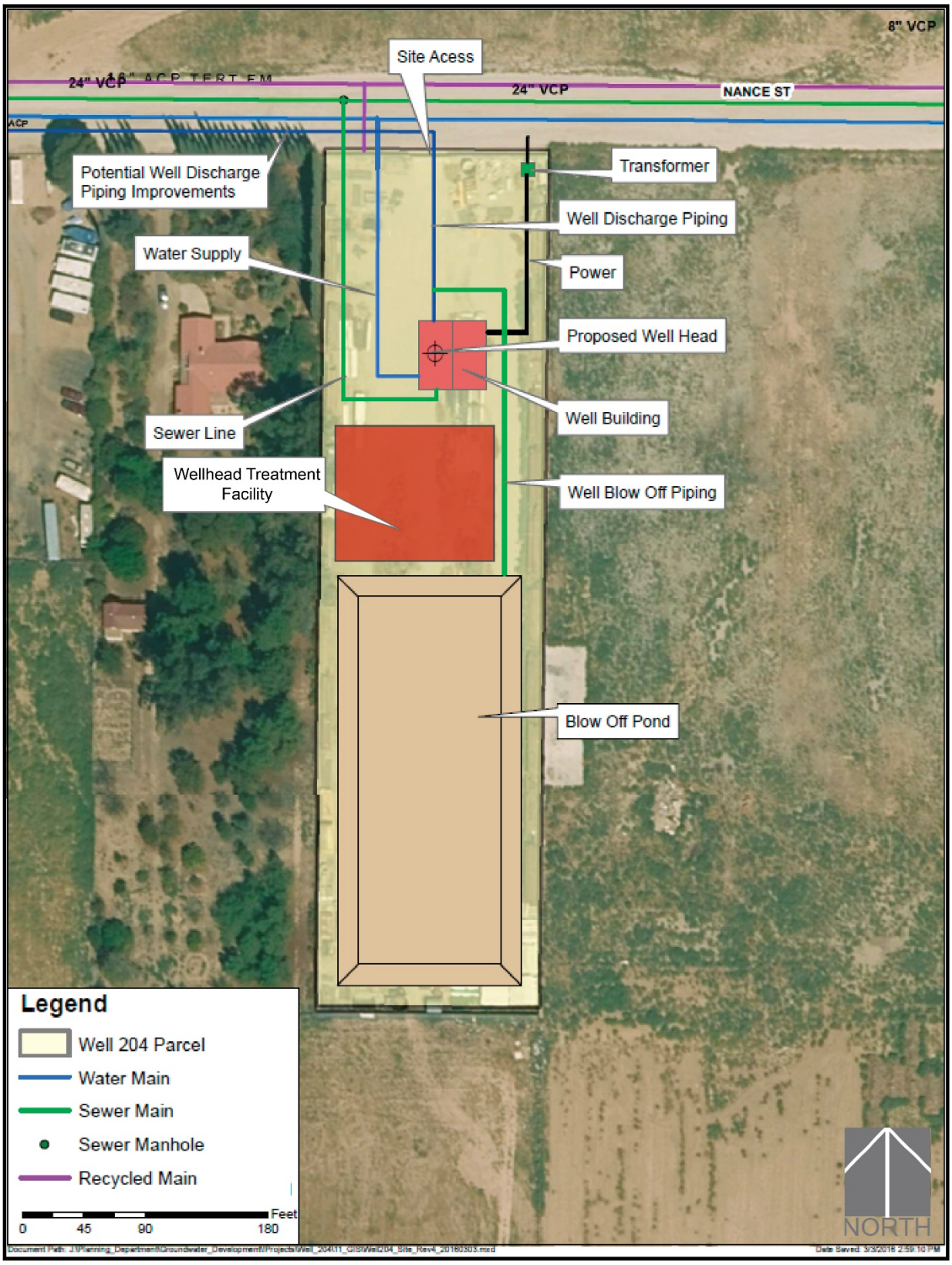


Figure 3: Phase II - Equipping

Table 1:
Summary of Project Components by Phases 1 and 2

Phase 1 – Drilling and Testing	
Construction Schedule: 3 to 4 weeks of continuous (24 hours a day, 7 days a week) activity After 4 weeks – drilling and testing activity decrease to 12 hours per day for 2 weeks	
Component	**Subcomponents and Description**
Groundwater production well	• 18-inch diameter well 510 feet below ground surface • Fire hydrant/blow-off located within public right-of-way 4-inch diameter pipeline, approximately 20 linear feet connecting to existing potable water pipeline on Nance Street.
Temporary groundwater production well components	Development of: • water discharge pump • Settling tanks (3) • Mud tank • 4-inch diameter pipeline, approximately 60 linear feet (connection to supply water needed for construction) • 18-inch diameter pipeline, approximately 60 linear feet (sewer connection)
Construction equipment	• Drill rig • Air compressor • Tractor/backhoe/loader • Off-highway trucks • Water trucks • Sweeper/scrubber • Plate compactor
Other Temporary Appurtenances	• 24-foot high sound barrier • Field office • Dog house • Pipe trailer • Material storage area • Cuttings storage area
Phase 2 – Equipping	
Construction Schedule: 12 hours a day for four weeks	
Component	**Subcomponents and Description**
Well head facilities & appurtenances	• Wellhead Treatment Facility, which includes: ○ Degassing tank ○ Booster pump ○ Granular activated carbon vessels ○ Blending facility/clearwell ○ Disinfection system • 2,500 square foot footprint building to house chemical and electrical equipment, which includes: ○ Pumping plant* ○ Disinfection facilities ○ Electrical instrumentation and control equipment ○ Air removal facilities with variable frequency drive (optional)

	** Other options for pumping plant include exterior vertical turbine pumping unit with noise attenuation equipment or submersible pump*
Blow off pond	Area: 0.75 acres Depth: up to 5 feet Capacity: 1.2 million gallons
Transmission pipelines	• 200 linear feet 18" diameter pipe connecting groundwater production well to blow-off pond • Alternatives for connecting to existing potable water lines (using 18 inch diameter pipes within right-of-way along Nance Street) ○ Perris Blvd. (1,200 feet of pipeline) ○ Redlands Ave. (3,600 feet of pipeline) • Temporary well discharge pipes 4-inch diameter for 60 linear feet • Temporary 18-inch diameter line connecting the pump house to the sewer line on Nance Street (60 linear feet)
Construction equipment	• Crane • Air compressor • Tractor/backhoe/loader • Off-highway trucks • Water trucks • Sweeper/scrubber • Plate compactor
Other Site Improvements	• Electrical services connection (Southern California Edison) and transformer located at the northeastern corner of the project site • Drought tolerant landscaping around perimeter • 40 foot tall communication tower antennae • Chain link fence, masonry block wall, or a combination of the two surrounding the perimeter of the project site

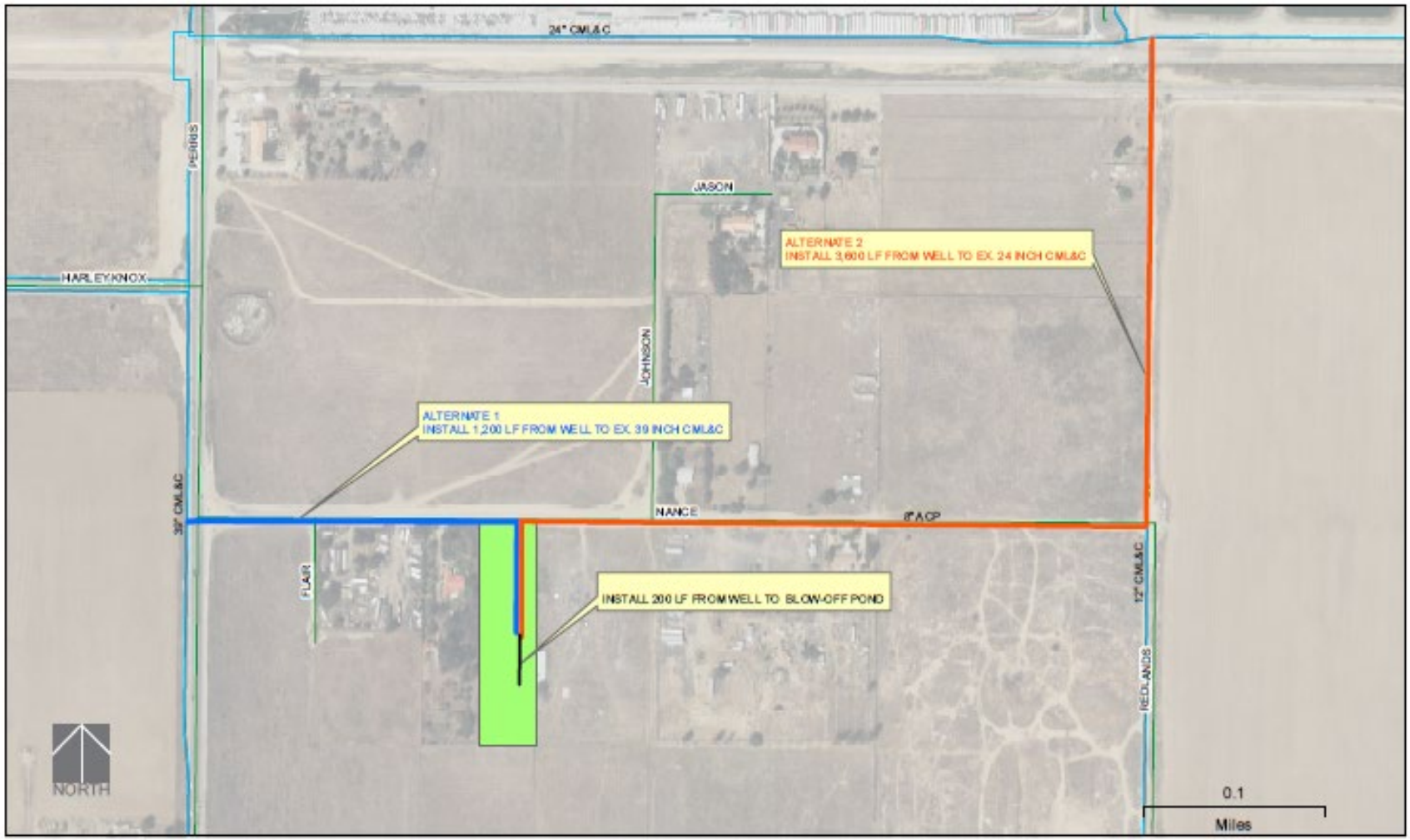


Figure 4: Transmission Pipeline Alternatives

Phase 1 – Drilling and Testing

Grading

The project site would be rough graded to accommodate temporary components.

Well Drilling

The proposed Project would involve drilling a well approximately 18-inches in diameter, up to 510 feet below ground surface (bgs). A new fire hydrant or blow-off would be installed within the public right-of-way, as well as a new pipeline measuring up to 4-inch diameter and approximately 20 linear feet, connecting to the existing potable water pipeline located within Nance Street.

Temporary Groundwater Production Well Components

In order to provide water supply for the drilling process, approximately 60 linear feet of a temporary 4-inch diameter pipeline would be connected to the new fire hydrant or blow-off. Another temporary pipeline measuring up to 18-inches in diameter and approximately 60 linear feet would be constructed and connect to the existing sewer line, also located within Nance Street, to allow for the discharge of development and testing water during the drilling of the well. Several temporary building components would be constructed including: a 24 foot high sound barrier, a field office, a "dog house," a pipe trailer, material storage area, and a cuttings storage area.

Construction Equipment

Construction equipment would include a drill rig, air compressor, a tractor/backhoe/loader, off-highway trucks, water trucks, a sweeper/scrubber, and a plate compactor.

Phase 2 – Equipping

Wellhead and Treatment Facility

The Proposed Project includes the construction/operation of one fully equipped well (approximately 650 gpm) and wellhead treatment facility. The site would be enclosed by a perimeter block wall and certain features of the wellhead and wellhead treatment facilities would be situated within a block-walled structure and some features situated outside on site. The facilities would generally include a degassing tank, well pump, electrical gear, granular activated carbon vessels for VOC/PCE removal and related constituents; a backwash tank, a blending facility/clearwell, booster pump; and a disinfection system. This facility would also require construction of two monitoring wells in close proximity to the well. Treated water exiting the site would travel north to existing or proposed transmission pipelines within Nance Street and eventually be interconnected with the existing EMWD distribution system

Blow-off Pond

An onsite blow-off pond would be constructed for the purpose of capturing and percolating water that could become stagnant or dormant in the well between operational runs. The blow-off pond, with a footprint of up to 0.75-acres and a depth up to 5-feet, would have the capacity to capture up to 1.2 million gallons (MG) of water. The blow-off pond would take up the southern half of the project site.

Pipelines

The Project proposes to construct a new transmission pipeline, measuring up to 18-inch diameter, located within the public right-of-way along Nance Street; currently two alternative alignments are being considered. Alternative alignment one would construct approximately 1,200 linear feet of pipeline from the well site, along Nance Street westerly to Perris Boulevard and connect to an existing 39-inch diameter pipeline. Alternative two would construct approximately 3,600 linear feet of pipeline from the well site, along Nance Street easterly to Redlands Avenue and then north to an existing 24-inch line. Proposed pipeline alternatives are shown on Figure 4. Additionally, an estimated 200 linear feet of up to 18-inch diameter pipeline would be installed, connecting to the blow-off pond within the well site.

Other Site Improvements

A new Southern California Edison (SCE) electrical services connection would be required. A transformer would be located at the northeastern corner of the project site. Additionally, a communication tower antenna measuring approximately 40 feet high may be constructed for purpose of communicating with EMWD's Supervisory Control and Data Acquisition (SCADA) system.

The perimeter of the proposed Project site would be secured to prevent entry onto the site, with a chain link fence, masonry block wall or a combination of both.

Phase 3 – Operations and Maintenance

Staffing

One EMWD staff person would visit the site typically once a week.

Regional Water Quality Issue

Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are fluorinated organic chemicals that are part of a larger group of chemicals referred to as perfluoroalkyl substances (PFASs). PFOA and PFOS have been the most extensively produced and studied of these chemicals. They were used to make carpets, clothing, fabrics for furniture, paper packaging for food and other materials (e.g., cookware) that are resistant to water, grease or stains. PFOA is used for firefighting at airfields and in a number of industrial processes.

This background information on PFAS's and PFOA is relevant in that the proposed Project site is in the vicinity of March Air Reserve Base (ARB), which has used firefighting suppressant (foam) that contain PFOS. To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, the U.S. Environmental Protection Agency (EPA) has established the health advisory levels at 70 parts per trillion (ppt). This health advisory level offers a margin of protection for all Americans throughout their life from adverse health efforts resulting from exposure to PFOA and PFOS in drinking water. Testing of another EWMD well (well 59) near March ARB yielded concentrations of PFOS that exceeded 70 ppt. Subsequent to this test, EMWD shut down the well, and is currently working with March ARB on treatment options to reduce concentrations below the 70 ppt.

It should be noted that before EWMD can bring Well 204 online, water quality would need to be tested for a variety of constituents, including PFOA, following procedures established by the Riverside County Department of Environmental Health, the State Division of Drinking Water (formerly known as the California Department of Public Health), and the Santa Ana Regional Water Quality Control Board.

9. Surrounding Land Uses & Environmental Setting:

The project site is located on parcel 302-110-028 located south of Nance Street, between North Perris Boulevard and Redlands Avenue in the City of Perris. Nance Street is currently an unpaved direct roadway. The proposed Project site is currently vacant. The project site is relatively flat, with elevations ranging from 1,470 feet in the northwest corner to 1,458 along the southwestern corner. No jurisdictional drainages are located on the project site.

The surrounding area is a mixture of residential, and vacant land uses (See Table 2, Surrounding Land Uses). The site is bounded to the north, south, and east by vacant land, and on the west by a residential use. Figure 5 shows the project site and surrounding land uses.

Table 2:
Adjacent Land Uses

Direction	Specific Plan Designation	Zoning District	Existing Land Use
Project Site	Business Professional Office	Business Park	Vacant
North	Light Industrial	Commercial Community	Vacant
South	Business Professional Office	Business Park	Vacant
East	Business Professional Office	Business Park	Vacant
West	Business Professional Office	Business Park	Residential

10. Approvals needed

- California Division of Drinking Water, **Water Supply Permit**
- California Regional Water Quality Control Board, Santa Ana Region, **General Permit for Storm Water Discharges Associated with Construction and Land**

Disturbance Activities

- Riverside County Community Health Agency, Department of Environmental Health, **Well Permit** and Hazardous Materials Management Permit
- South Coast Air Quality Management District, Emergency Back-Up Genset and Carbon Vessels
- City of Perris, **Encroachment Permit**



- Project Site - Vacant Use - Residential Use

Figure 5: Adjacent Land Uses

Environmental Factors Potentially Affected

The environmental factors checked below (x) would be potentially affected by this project, involving at least one impact that is a "**Potentially Significant Impact**" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture Resources	☐ Hazards & Hazardous Materials	☐ Recreation
☐ Air Quality	☐ Hydrology/Water Quality	☐ Transportation
☐ Biological Resources	☐ Land Use/Planning	☐ Tribal Cultural Resources
☐ Cultural Resources	☐ Mineral Resources	☐ Utilities and Service Systems
☐ Energy	☐ Noise	☐ Wildfire
☐ Geology/Soils	☐ Population and Housing	☐ Mandatory Findings of Significance

The environmental factors checked below (x) would be potentially affected by this project, involving at least one impact that is a "**Less than Significant with Mitigation Incorporated**" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture Resources	☐ Hazards & Hazardous Materials	☐ Recreation
☐ Air Quality	☒ Hydrology/Water Quality	☐ Transportation
☒ Biological Resources	☐ Land Use/Planning	☒ Tribal Cultural Resources
☒ Cultural Resources	☐ Mineral Resources	☐ Utilities and Service Systems
☐ Energy	☒ Noise	☐ Wildfire
☒ Geology/Soils	☐ Population and Housing	☒ Mandatory Findings of Significance

The environmental factors checked below (x) would be potentially affected by this project, involving at least one impact that is a "**Less than Significant**" as indicated by the checklist on the following pages.

☒ Aesthetics	☒ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture Resources	☒ Hazards & Hazardous Materials	☐ Recreation
☒ Air Quality	☐ Hydrology/Water Quality	☒ Transportation
☐ Biological Resources	☐ Land Use/Planning	☐ Tribal Cultural Resources
☐ Cultural Resources	☐ Mineral Resources	☒ Utilities and Service Systems
☒ Energy	☐ Noise	☐ Wildfire
☐ Geology/Soils	☐ Population and Housing	☐ Mandatory Findings of Significance

The environmental factors checked below (x) would have "**No Impact**" by this project as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☒ Public Services
☒ Agriculture Resources	☐ Hazards & Hazardous Materials	☒ Recreation
☐ Air Quality	☐ Hydrology/Water Quality	☐ Transportation
☐ Biological Resources	☒ Land Use/Planning	☐ Tribal Cultural Resources
☐ Cultural Resources	☒ Mineral Resources	☐ Utilities and Service Systems
☐ Energy	☐ Noise	☒ Wildfire
☐ Geology/Soils	☒ Population and Housing	☐ Mandatory Findings of Significance

Determination

(To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____

Signature Date

_____

Printed Name

Evaluation of Environmental Impacts

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

I. Aesthetics

Except as provided in Public Resources code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within view from a state scenic highway?				X
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views the site and its surroundings? (public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

a) **Less than significant.** The City of Perris General Plan describes the project vicinity as a flat, broad basin, with rolling foothills to the east and west of the basin. Significant scenic vistas that may be viewed from the proposed project site include the Russell Mountains and Bernasconi Hills within the Lake Perris State Recreation Area, located about a mile northeast of the project site. Terri Peak (elevation 2,569 feet), which is part of the Russell Mountains, can be seen from the Project site. Views immediately west of the Project site consist of trees; vacant lots with vehicle storage can be seen immediately north, east, and south of the site. Buildings in the City of Perris consist of low-rise buildings that preserve scenic vistas; for example, the Home Depot distribution center located east of the proposed Project site is a one-story building and does not obscure the view of mountains and hills.

Scenic vistas can be impacted by development in two ways: a structure may be constructed that blocks the view of a vista or the vista itself may be altered (i.e., development on a scenic hillside). The Project site is not considered to be within or to comprise a portion of a scenic vista; therefore, the proposed Project would not alter existing scenic vistas. The visible portions of the Project would include the perimeter fencing, a one-story building with a 2,500 square foot footprint, well treatment facility, blow-off pond, and a 40-foot tall communications antennae. The visible structures of the proposed Project would be minimal and would be consistent with the structures and land use found in this area. The proposed Project would not block the scenic vista from public right-out ways; therefore, impacts would be less than significant.

b) **No impact.** The Project site is not adjacent to an officially designated State scenic highway as identified on the California Scenic Highway Mapping System. The Project site is located in a suburbanized area visually dominated by developing commercial/warehousing uses, surface street features, and vacant land and contains no scenic resources such as rock outcroppings, significant trees, or historical buildings. No impact would occur.

c) **Less than significant impact.** The Project site is located in an urbanized area. The Project site is zoned for business and professional office use; therefore, the proposed Project would not conflict with applicable zoning. The existing visual character surrounding the Project site is vacant land and RV storage, and is zoned for commercial uses. Depending on the type of perimeter fencing used (chain link, masonry block, or combination of the two) various

components of the proposed Project may be visible from the public right-of-way. The visible structures of the Project (one-story 2,500 square foot structure, communications antennae, and perimeter fencing) would be consistent with the land use in the area. Additionally, perimeter fencing would have drought tolerant landscaping to visually screen fencing and other Project features. Impacts would be less than significant.

d) **Less than significant impact.** Excessive or inappropriately directed lighting can adversely impact nighttime views by reducing the ability to see the night sky and stars. Glare can be caused from unshielded or misdirected lighting sources. Reflective surfaces (i.e., polished metal) can also cause glare. Impacts associated with glare range from simple nuisance to potentially dangerous situations (i.e., if glare is directed into the eyes of motorists). The proposed Project would include security lights at the Project site and would comply with the zoning code and general plan policies. The communications antennae and electrical/chemical housing structure would not include reflective surfaces. Impacts would be less than significant.

II. Agriculture and Forestry Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined in Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

a) **No Impact.** The Department of Conservation classifies the project site as Farmland of Local Importance, which is defined as an area with "soils that would be classified as Prime and Statewide but lack available irrigation water" or "lands identified by city or county ordinance as agricultural zones or contracts, which include Riverside County 'Proposition R' lands."[1] The Perris Valley Commercial Center Specific Plan designates the Project site as Business Park/Professional Office (BPO), which does not include agricultural uses. The land use discrepancy between the Farmland Mapping and Monitoring Program and the Specific Plan shows the intentional shift in land use from agricultural use to commercial, which was specified in the 1991 City of Perris General Plan. The Project site is currently vacant and has not been used for agriculture since 2009.[2] The proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. Therefore, no impacts would occur.

b) **No Impact.** No Williamson Act Contracts are active for the proposed Project site.[3] The proposed Project would not conflict with existing Williamson Act Contracts.

c) **No Impact.** Public Resources Code Section 12220(g) identifies forest land as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits". The Project site and surrounding properties are not currently being managed or used for forest land as identified in Public Resources Code Section 12220(g). The Project site is vacant, graded and devoid of trees. Additionally, the Project site is not zoned for timberland use; therefore, no impact to timberland zoning would occur.

d) **No Impact.** The proposed Project site is vacant, graded land devoid of trees; thus, there would be no loss of forest land or conversion of forest land to non-forest use as a result of this Project. No impacts in reference to loss of forestland would occur.

e) **No Impact.** The proposed Project is located in an area dominated by vacant land and commercial/warehousing uses. Per the discussion in section (a), (c), and (d), the proposed Project would not change the existing environment in a manner that would result in the conversion of agricultural land to non-agricultural land or forest land to non-forest land. No impacts would occur.

III. Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

a) **No Impact.** A significant impact could occur if the proposed project conflicts with or obstructs implementation of the South Coast Air Basin 2016 Air Quality Management Plan (AQMP). Conflicts and obstructions that hinder implementation of the AQMP can delay efforts to meet attainment deadlines for criteria pollutants and maintaining existing compliance with applicable air quality standards. Pursuant to the methodology provided in Chapter 12 of the 1993 South Coast Air Quality Management District (SCAQMD) CEQA Air Quality Handbook, consistency with the South Coast Air Basin 2016 AQMP is affirmed when a project (1) does not increase the frequency or severity of an air quality standards violation or cause a new violation and (2) is consistent with the growth assumptions in the AQMP.[4] Consistency review is presented below:

> (1) The proposed Project will result in short-term construction and long-term pollutant emissions that are less than the CEQA significance emissions thresholds established by the SCAQMD, as demonstrated by the CalEEMod analysis conducted for the proposed site (See Appendix A, Air Quality Modeling Data), summarized in Section III et seq. of this report; therefore, the Project will not result in an increase in the frequency or severity of any air quality standards violation and will not cause a new air quality standard violation.
>
> (2) The CEQA Air Quality Handbook indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan Elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and off-shore drilling facilities. This Project does not involve a General Plan or Specific Plan Amendment and is not considered a significant project. The proposed Project, a potable water well, would not generate any new population or employment in the area; therefore, the Project would not have an impact on AQMP growth assumptions.

According to the Air Quality Analysis prepared for the proposed Project and the consistency analysis presented above, the proposed Project would not conflict with the AQMP; no impact would occur.

b) **Less Than Significant Impact.** A project may have a significant impact if project-related emissions exceed federal, state, or regional standards or thresholds, or if project-related emissions substantially contribute to existing or project air quality violations. The proposed Project is located within the South Coast Air Basin, where efforts to

attain state and federal air quality standards are governed by the SCAQMD. Both the state of California (state) and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants (known as 'criteria pollutants'). These pollutants include ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), inhalable particulate matter with a diameter of 10 microns or less (PM10), fine particulate matter with a diameter of 2.5 microns or less (PM2.5), and lead (Pb). The state has also established AAQS for additional pollutants. The AAQS are designed to protect the health and welfare of the populace within a reasonable margin of safety. Where the state and federal standards differ, California AAQS are more stringent than the national AAQS.

Air pollution levels are measured at monitoring stations located throughout the air basin. Areas that are in nonattainment with respect to federal or state AAQS are required to prepare plans and implement measures that will bring the region into attainment. Table 3 (South Coast Air Basin Attainment Status – Riverside County) summarizes the attainment status in the project area for the criteria pollutants. Discussion of potential impacts related to short-term construction impacts and long-term area source and operational impacts are presented below.

Table 3:
South Coast Air Basin Attainment Status – Riverside County

Pollutant	Federal	State
O_3 (1-hr)	No Data	Nonattainment
O_3 (8-hr)	Nonattainment	Nonattainment
PM^{10}	Attainment	Nonattainment
$PM^{2.5}$	Nonattainment	Nonattainment
CO	Unclassified/Attainment	Attainment
NO_2	Unclassified/Attainment	Attainment
SO_2	Attainment	Attainment
Pb	Unclassified/Attainment	Attainment
Source: CalEPA Air Resources Board. State and National Area Designation Maps. 2017.		

Construction Emissions

The proposed Project would result in construction-related and operational emissions of criteria pollutants and toxic air contaminants. A project may have a significant impact if project-related emissions exceed federal, state, or regional standards or thresholds, or if project-related emissions will substantially contribute to existing or project air quality violations.

The California Emissions Estimator Model (CalEEMod) version 2013.2.2 was utilized to estimate emissions from the proposed construction activities (see Appendix A, Air Quality Modeling Data). This modeling was conducted in August 2016, and while a newer version of the CalEEMod emissions model has since been promulgated, the newer version of the software in fact estimates less emissions than the earlier versions. This is due to the newer version having efficiencies built into it based on updated SCAQMD and California Building Code (CBC) standard regulations, which reduce emissions projections in the short and long-term. As such, the air quality modeling data that was generated in 2016 is likely overestimating emissions relative to the newer version of the emissions model. Therefore, the data is still valid for use in this analysis.

Project-specific construction phase lengths provided by EMWD were utilized. Table 4 (Maximum Daily Construction Emissions) summarizes the results of the CalEEMod outputs. Based on the results of the model, maximum daily emissions from the construction of the proposed Project would not exceed established SCAQMD thresholds.

Table 4:
Unmitigated Maximum Daily Construction Emissions (lbs/day)

Year	ROG*	NO_X	CO	SO_2	PM^{10}	$PM^{2.5}$
Summer 2017[1]	2.82	27.37	19.04	0.04	1.95	1.42
SCAQMD Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Potential Impact?	**No**	**No**	**No**	**No**	**No**	**No**

* Reactive Organic Gases
[1.] Summer and winter CalEEMod output numbers are substantially the same.
Note: Volatile organic compounds are measured as reactive organic compounds
Source: MIG 2016

Operational Emissions
Long-term emissions are evaluated at build-out of a project. The Project was assumed to be operational in 2017 based on the CalEEMod analysis conducted in 2016. Long-term criteria air pollutant emissions would result from the operation of the groundwater well facilities. Long-term emissions are categorized as area source emissions, energy demand emissions, and operational emissions. Operational emissions would result from automobile and other vehicle sources associated with intermittent maintenance trips to and from the proposed facility. Energy demand emissions result from use of electricity. Mobile source emissions refer to on-road motor vehicle emissions generated from the Project's traffic. However, mobile source emissions from the proposed Project are expected to be minimal, as operation of the facility would not include daily employee trips or customer and vendor trips and would only require weekly maintenance trips to the facility. Area source emissions from the proposed Project include landscape maintenance and an average square footage to be repainted each year. As such, operational emissions were not modeled for this Project. Long-term emissions would not exceed the daily thresholds established by SCAQMD; impacts would be less than significant.

Cumulative Emissions
Cumulative short-term, construction-related emissions and long-term, operational emissions from the Project would not contribute considerably to any potential cumulative air quality impact because short-term Project and operational emissions would not exceed any SCAQMD daily threshold. As required of the proposed Project, other concurrent construction projects and operations in the region would be required to implement standard air quality regulations and mitigation pursuant to state CEQA requirements, thus ensuring that air quality standards are not cumulatively exceeded. Impacts are considered less than significant.

c) **Less than Significant Impact.** Sensitive receptors are those segments of the population that are most susceptible to poor air quality such as children, the elderly, the sick, and athletes who perform outdoors. Land uses associated with sensitive receptors include residences, schools, playgrounds, childcare centers, outdoor athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The surrounding land uses are vacant or occupied by storage units and distribution centers. The proposed groundwater well and associated facilities would not generate toxic pollutant emissions. Impacts would be less than significant.

d) **Less than Significant Impact.** The implementation of the proposed Project would result in diesel exhaust odors from heavy-duty construction equipment. Construction activities would take place over a short period of time (approximately 8 weeks) and is not expected to have permanent contributions to objectionable odors. Long-term operational activities are not expected to be the cause of objectionable odors; any chemicals associated with the groundwater well facilities would be housed in the pump house. The proposed Project is located in an area zoned as Business Park/Professional Office, which indicates that most people would be inside buildings for the majority of the day (compared to areas zoned as open space or parks). The number of people that would be present outdoors at build-out conditions for the PVCC SP would be relatively low. Therefore, the proposed Project would have less than significant impacts for objectionable odors that would affect a substantial number of people.

IV. Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
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 California Department of Fish and Wildlife or US Fish and Wildlife Service?				X
c) Have a substantial adverse effect on state or 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?				X
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?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?		X		

A baseline biological survey of the Project site was conducted, in accordance with the requirements of the Western Riverside County Multi-species Habitat Conservation Plan (MSHCP), on October 29, 2019 and included a Step I (Habitat Assessment) and Step II-a (Focused Burrow Survey) MSHCP burrowing owl survey (MSHCP 2006) . During this survey, it was observed that the Project site is dominated by disturbed and ruderal habitats. A review of historical aerial photography (Google Earth 2002-2019) indicate that it is subject to regular disking. Surficial soils (Domino silt loam, saline-alkali) are mixed with gravel and vegetation is limited to sparse, non-native weeds, primarily along the fenceline bordering the Project site. Plant species observed onsite include stinknet (*Oncosiphon piluliferum*), tree tobacco (*Nicotiana glauca*), london rocket (*Sisymbrium irio*), summer mustard (*Hirschfeldia incana*), ripgut (*Bromus diandrus*), tree of heaven (*Ailanthus altissimus*), and prickly lettuce (*Lactuca serriola*).

a) **Less than Significant with Mitigation Incorporated.**

Special Status Plant Species

Based on a review of the US Fish and Wildlife Service (USFWS) Information for Planning and Conservation Tool (IPaC), a search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB),

and a search of the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory, a total of thirty-eight (38) special status plant species have been identified in the region of the Project site (Appendix B). None of these special status species are expected to occur onsite due to a lack of suitable habitat.

The Project site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Mead Valley Area Plan and occurs within a Predetermined Survey Area for nine (9) MSHCP Criteria Area Plant Species (San Jacinto Valley crownscale, Parish's brittlescale, Davidson's saltscale, thread-leaved brodiaea, round-leaved filaree, smooth tarplant, coulter's goldfields, little mousetail, and mud nama) and four (4) Narrow Endemic Plant Species (San Diego ambrosia, spreading navarretia, California Orcutt grass, Wright's trichocoronis). No MSHCP Criteria Area Plant Species or Narrow Endemic Plant Species are expected to occur onsite due to a lack of suitable habitat.

Special Status Wildlife Species

Based on a review of the US Fish and Wildlife Service (USFWS) Information for Planning and Conservation Tool (IPaC) and a search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), a total of eighteen (18) special status wildlife species have been identified in the region of the Project site (Appendix B).

The Project site is located within an MSHCP Predetermined Survey Area for burrowing owl. Based on the October 29, 2019 field survey, the Project Site contains suitable habitat for burrowing owls (Step I, MSHCP 2006). However, the Project site does not contain suitable burrowing owl burrows (Step II-a, MSCHP 2006) and therefore focused burrowing owl surveys (Step II-b, MSCHP 2006) are not required. Nevertheless, construction-related activities have the potential to impact burrowing owls, as outlined in Impact BIO-1: Burrowing Owls. All project sites containing suitable burrowing owl habitat or burrows (based on Step I - Habitat Assessment), whether owls were found or not, require pre-construction surveys that shall be conducted within fourteen (14) days prior to ground disturbance to avoid direct take of burrowing owls.

Impact BIO-1: Burrowing Owls. Construction-related activities have the potential to impact burrowing owls. Implementation of MM BIO-1 would reduce impacts to burrowing owl to a level of less than significant.

MM BIO-1: *Preconstruction Burrowing Owl Survey.* Pre-construction burrowing owl surveys (within 14-days of construction) will be conducted prior to the onset of construction-related activities, which include grading, grubbing, vegetation removal, etc. Pre-construction surveys would follow the guidance outlined in Burrowing Owl Survey Instructions for the Western Riverside MSHCP (2006).

Although there are no trees or shrubs rooted in the Project Site due to recent and regular disking, ground-nesting species (e.g. killdeer) have potential to nest in bare ground areas located on-site. Also, neighboring properties possess trees which overhang the Project Site and provide suitable habitat for nesting birds that are protected under the Migratory Bird Treaty Act. A raptor nest (inactive at the time of the October 29, 2019 field survey) is present in a eucalyptus tree overhanging the Project Site and project-related construction activities have the potential to impact potential nesting pairs.

Impact BIO-2: Nesting Birds. Construction-related activities have the potential to impact nesting birds on the Project site grounds and in trees and shrubs located on adjacent properties. An inactive raptor nest is located in a eucalyptus tree that is rooted in a neighboring property, but overhangs the Project site. Implementation of MM BIO-2 would reduce impacts to nesting birds to a level of less than significant.

MM BIO-2: *Preconstruction Nesting Birds Surveys.* If vegetation removal is scheduled during the nesting season (typically February 1 to September 1), a preconstruction focused survey

for active nests shall be conducted by a qualified biologist (as determined by a combination of academic training and professional experience in biological sciences and related resource management activities) no more than five (5) days prior to the beginning of project-related activities (including but not limited to equipment mobilization and staging, clearing, grubbing, vegetation removal, and grading). Surveys shall be conducted in proposed work areas, staging and storage areas, and soil, equipment, and material stockpile areas. For passerines and small raptors, surveys shall be conducted within a 250-foot radius surrounding the work area (in areas where access is feasible). For larger raptors, such as those from the genus *Buteo*, the survey area shall encompass a 500-foot radius. Surveys shall be conducted during weather conditions suited to maximize the observation of possible nests and shall concentrate on areas of suitable habitat. If a lapse in project-related work of five (5) days or longer occurs, an additional nest survey shall be required before work can be reinitiated. If nests are encountered during any preconstruction survey, a qualified biologist shall determine if it may be feasible for construction to continue as planned without impacting the success of the nest, depending on conditions specific to each nest and the relative location and rate of construction activities. If the qualified biologist determines construction activities have potential to adversely affect a nest, the biologist shall immediately inform the construction manager to halt construction activities within minimum exclusion buffer of 50 feet for songbird nests, and 200 to 500 feet for raptor nests, depending on species and location. Active nest(s) within the Project Site shall be monitored by a qualified biologist during construction if work is occurring directly adjacent to the established no-work buffer. Construction activities within the no-work buffer may proceed after a qualified biologist determines the nest is no longer active due to natural causes (e.g. young have fledged, predation, or other non-anthropogenic nest failure).

The Project site does not occur within an MSHCP Predetermined Survey Area for amphibians or mammals. Furthermore, no other special status wildlife species listed in a nine quad search of the USFWS IPaC and CDFW CNDDB databases (Appendix B) are expected to occur onsite due to a lack of suitable habitat.

b) **No Impact.** Based on the results of the October 29, 2019 field survey, the Project site is completely disked and does not contain any riparian habitat or other sensitive natural community.

c) **No Impact.** Based on the results of the October 29, 2019 field survey and a review of the USFWS National Wetlands Inventory (NWI), the Project site is completely disked and does not contain any federally protected wetlands.

d) **No Impact.** Based on the results of the October 29, 2019 field survey, the Project site is completely disked and does not act as a corridor for native resident or migratory fish or wildlife species.

e) **No Impact.** Based on the results of the October 29, 2019 field survey, the Project site is completely disked and does not contain any trees or other resources protected by local policies or ordinances.

f) **Less than Significant with Mitigation Incorporated.** The Project site occurs within the Western Riverside County MSHCP Mead Valley Area Plan. The Project site does not occur within an MSHCP Area Plan Subunit or Criteria Cell. The Project site does not occur within an MSHCP Predetermined Survey Area for mammals or amphibians.

As described in Section (a) above, the Project site occurs within an MSHCP Predetermined Survey Area for burrowing owls. Implementation of MM-BIO 1 would reduce potential impacts to burrowing owls to a level of less than significant. As described in Section (a) above, the Project site occurs within a Predetermined Survey Area for nine (9) MSHCP Criteria Area plant species (San Jacinto Valley crownscale, Parish's brittlescale, Davidson's saltscale,

thread-leaved brodiaea, round-leaved filaree, smooth tarplant, coulter's goldfields, little mousetail, and mud nama) and four (4) Narrow Endemic plant species (San Diego ambrosia, spreading navarretia, California Orcutt grass, Wright's trichocoronis). No MSHCP Criteria Area or Narrow Endemic plant species are expected to occur onsite due to a lack of suitable habitat.

V. Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

This section addresses cultural, historic, and tribal cultural resource impacts associated with the Project. Issues of interest are cultural, archaeological and historic impacts identified by the CEQA Guidelines: whether the Project will cause a substantial adverse change in an archaeological or historic resource or disturb human remains. A Phase I Cultural Resource Assessment was completed for the Project by MIG, Inc., dated June 17, 2016. The information in this chapter is taken from the Phase I Cultural Resource Assessment which can be found in Appendix C of this document.

a) **No Impact.** Results from the California Historical Resources Information System – Eastern Information Center (CHRIS-EIC) (Appendix C) indicated that there were no previously recorded historical resources within the Project site. However, there was one (1) previously recorded historic structure (CA-RIV- 005516H) located within a one-mile radius of the Project site. Although, this historic resource would not be impacted by the proposed Project. There were no historic structures (built environments) identified during the pedestrian survey. Therefore, the proposed Project would result in no adverse change in the significance of a historical resource. No impacts would occur.

b) **Less than Significant with Mitigation Incorporated.** Results from the CHRIS-EIC indicated that there were no previously recorded archaeological resources within the Project site. However, there are three (3) previously recorded archaeological resources (prehistoric and historic) and one (1) historic structure located within a one-mile radius (1-prehistoric, 2-historic, and 1-historic structure) of the Project site. None of these resources would be impacted by the proposed Project. There were no archaeological resources identified on the Project site during the pedestrian survey. A search of the City of Perris's General Plan indicates that the Study Area lies in a vicinity of low sensitivity for cultural resources, consisting of one recorded cultural site (prehistoric or historic) per square mile (City of Perris General Plan 2005). Nevertheless, despite the heavy disturbances of the Project site that may have displaced archaeological resources on the surface, it is possible that intact archaeological resources exist at depth. The proposed project could have potentially significant impacts to archaeological resources, and Mitigation Measures **MM CUL-1** through **CUL-6** are proposed to reduce the potential impacts to previously undiscovered archaeological resources to less than significant levels.

Impact CUL-1: The proposed Project has the potential to cause a substantial adverse change in the significance of a previously undiscovered archaeological resource.

MM CUL-1: *Cultural Resources Treatment and Monitoring Agreement.* At least 30 days prior to the start of any ground-disturbing activities, EMWD shall contact the Consulting Tribe(s) to develop Cultural Resource Treatment Monitoring Agreement(s) ("Agreement"). The Agreement(s) shall address the treatment of archaeological resources inadvertently discovered on the project site; project grading; ground disturbance and development scheduling; the designation, responsibilities, and participation of tribal monitor(s)

during grading, excavation, and ground disturbing activities; and compensation for the tribal monitors, including overtime, weekend rates, and mileage reimbursements.

MM CUL-2: *Develop a Cultural Resources Monitoring Plan.* Prior to any grading activities, a Cultural Resources Monitoring Plan shall be prepared by a qualified archaeologist in consultation with the Consulting Tribe(s). The plan shall also identify the location and timing of cultural resources monitoring. The plan shall contain an allowance that the qualified archaeologist, based on observations of subsurface soil stratigraphy or other factors during initial grading, and in consultation with the Native American monitor and the lead agency, may reduce or discontinue monitoring as warranted if the archaeologist determines that the possibility of encountering archaeological deposits is low. The plan shall outline the appropriate measures to be followed in the event of unanticipated discovery of cultural resources during project implementation (including during the survey to occur following vegetation removal and monitoring during ground-disturbing activities). The plan shall identify avoidance as the preferred manner of mitigating impacts to cultural resources. The plan shall establish the criteria utilized to evaluate the historic significance (per CEQA) of the discoveries, methods of avoidance consistent with CEQA Guidelines Section 15126.4(b)(3), as well as identify the appropriate data recovery methods and procedures to mitigate the effect of the project if avoidance of significant historical or unique archaeological resources is determined to be infeasible. The plan shall also include reporting of monitoring results within a timely manner, disposition of artifacts, curation of data, and dissemination of reports to local and state repositories, libraries, and interested professionals. A qualified archaeologist and Consulting Tribe(s) tribal monitor shall attend a pre-grade meeting with EMWD staff, the contractor, and appropriate subcontractors to discuss the monitoring program, including protocols to be followed in the event that cultural material is encountered.

MM CUL-3: *Tribal Monitoring Agreements.* A qualified archaeological monitor and a Consulting Tribe(s) monitor shall be present for ground-disturbing activities associated with the Project, and both the project archaeologist and Tribal Monitor(s) will make a determination as to the areas with a potential for encountering cultural material. At least seven business days prior to project grading, EMWD shall contact the tribal monitors to notify the Tribe of grading/excavation and the monitoring program/schedule, and to coordinate with the Tribe on the monitoring work schedule. Both the archaeologist and the tribal monitor shall have the authority to stop and redirect grading activities in order to evaluate the nature and significance of any archaeological resources discovered within the project limits. Such evaluation shall include culturally appropriate temporary and permanent treatment pursuant to the Cultural Resources Treatment and Monitoring Agreement, which may include avoidance of cultural resources, in-place preservation, data recovery, and/or reburial so the resources are not subject to further disturbance in perpetuity. Any reburial shall occur at a location predetermined between EMWD and the Consulting Tribe(s), details of which shall be addressed in the Cultural Resources Treatment and Monitoring Agreement in MM CR-1. Treatment may also include curation of the cultural resources at a tribal curation facility, as determined in discussion among EMWD, the project archaeologist, and the tribal representatives and addressed in the Cultural Resources Treatment and Monitoring Agreement referenced in MM CUL-1.

MM CUL-4 *Evaluation of Discovered Artifacts.* All artifacts discovered at the development site shall be inventoried and analyzed by the project archaeologist and tribal monitor(s). A

monitoring report will be prepared, detailing the methods and results of the monitoring program, as well as the disposition of any cultural material encountered. If no cultural material is encountered, a brief letter report will be sufficient to document monitoring activities.

MM CUL-5 *Disposition of Inadvertent Discoveries.* In the event that Native American cultural resources are recovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries with the tribe. EMWD shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources, and adhere to the following:

1) Preservation-in-place is the preferred option; preservation-in-place means avoiding the resources and leaving them in the place where they were found with no development affecting the integrity of the resource.
2) If preservation-in-place is not feasible, on-site reburial of the discovered items as detailed in the Monitoring Plan required pursuant to MM CR-2 is the next preferable treatment measure. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments.
3) In the event that on-site reburial is not feasible, EMWD will enter into a curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 Code of Federal Regulations 800 Part 79 and therefore would be curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation.

MM CUL-6 *Non-Disclosure of Reburial Locations.* It is understood by all parties that unless otherwise required by law, the site of any reburial of culturally sensitive resources shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, pursuant to the specific exemption set forth in California Government Code 6254(r), parties, and Lead Agencies will be asked to withhold public disclosure information related to such reburial.

c) **Less than Significant with Mitigation Incorporated.** No known human remains have been identified from the database within a one-mile radius of the Project site. No human remains were identified during the pedestrian survey of the Project site. The potential for uncovering significant resources, including Tribal Cultural Resources, at the Project site during construction activities is considered unlikely given that no such resources have been discovered during prior development activity on the site. However, these findings do not preclude the existence of previously unknown human remains located below the ground surface, which may be encountered during construction excavations associated with the proposed Project. Similar to the discussion regarding archaeological resources above, it is also possible to encounter buried human remains during construction given the proven prehistoric occupation of the region, the identification of multiple surface archaeological resources within two-miles of the Project site, and the favorable natural conditions that would have attracted prehistoric inhabitants to the area. If human remains are encountered during excavations, all work would halt and the County Coroner (Coroner) would be notified (Public Resources Code § 5097.98). The Coroner would determine whether the remains are of forensic interest. If the Coroner determines that the remains are prehistoric, the Coroner would contact the Native

American Heritage Commission (NAHC). The NAHC would be responsible for designating the most likely descendant (MLD), who would be responsible for the ultimate disposition of the remains, as required by Section 7050.5 of the California Health and Safety Code (H&SC). The MLD would make recommendations within 24 hours of notification by the NAHC. This recommendation may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials (Health & Safety Code § 7050.5).The proposed Project could have potentially significant impacts to previously undiscovered human remains, and **MM CUL-7** is incorporated to reduce this impact to less than significant.

Impact CUL-2: The proposed Project has the potential to disturb previously undiscovered human remains, including those interred outside of formal cemeteries.

MM CUL-7: *Human Remains.* If Native American human remains are encountered, Public Resources Code Section 5097.98 and California Health and Safety Code Section 7050.5 will be followed. If human remains are encountered no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours. Subsequently, the NAHC shall identify the person or persons it believes to be the "most likely descendant." The most likely descendant shall then make recommendations and engage in consultations concerning the treatment of the remains as provided in Public Resources Code Section 5097.98.

VI. Energy

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction?				X
b) Conflict with or obstruct a state of local plan for renewable energy or energy efficiency?			X	

a) **No Impact.** The proposed Project, a potable water well and associated equipment and appurtenances, would be subject to all applicable Federal, State, and local building regulations, including the California Building Code (CBC) as approved by the Garden Grove Building & Safety Division.

Construction of the Project would require the use of nonrenewable construction material, such as concrete, metals, and plastics. Nonrenewable resources and energy would also be consumed during the Drilling and Testing Phase and the Equipping Phase of the Project. Construction activities are anticipated to last approximately 8 weeks. Large amounts of energy would not be expended, and all construction vehicles would comply with federal and state standards for on- and off-road vehicles (e.g., emission standards set by the California Air Resources Board), meaning wasteful usage of energy would not occur. Construction-related impacts would therefore be less than significant.

Electricity would be provided by Southern California Edison (SCE), which obtains its energy supplies from various renewable energy sources, power plants and natural gas fields in southern California, as well as from energy purchased outside its service area and delivered through high voltage transmission lines and pipelines. Power is generated from various sources, including fossil fuel, hydroelectric, nuclear, wind, and geothermal plants; and is fed into the electrical grid system serving Southern California. SCE is subject to California's Renewables Portfolio Standard, which was established in 2002 under Senate Bill 1078, accelerated in 2006 under Senate Bill 107, and expanded in 2011 under Senate Bill 2. This program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020. According to the CPUC, as of 2017, SCE already provided 32% of its retail electricity from renewable energy resources.[5] As such, the proposed Project's electricity source is expected to be produced and utilized in an efficient manner.

Energy, in the form of fossil fuels, would also be used to fuel vehicles traveling to and from the site to inspect, repair or maintain the facilities. However, as described in Section 2.17, Transportation, vehicle maintenance trips would be irregular (typically once per week), and the operation of the potable water well would not generate daily trips.

With respect to lifecycle emissions, although there is no regulatory definition for "lifecycle emissions," the term is generally used to refer to all emissions associated with the creation and existence of a project, including emissions from the manufacture and transportation of component materials, and even emissions from the manufacture of the machines required to produce those materials. However, since it is impossible to accurately estimate the entire chain of emissions associated with any given project, lifecycle analyses are limited in effectiveness and meaning (relative to assessing or reducing Project-specific emissions for the CEQA analysis). The California Natural Resources Agency ("CNRA") has stated that lifecycle analyses are not required under CEQA[6], and in December 2009 CNRA issued new energy conservation guidelines for EIRs that make no reference to lifecycle emissions.[7] The CNRA explained that: (1) There exists no standard regulatory definition for lifecycle emissions, and (2) Even if a standard definition for 'lifecycle' existed, the term might be interpreted to refer to emissions "beyond those that could be

considered 'indirect effects'" as defined by CEQA Guidelines, and therefore, beyond what an EIR is required to estimate and mitigate.[8]

In accordance with all of the above, the proposed Project would not encourage activities that result in the use of large amounts of energy, or use of energy in a wasteful manner. Therefore, operational impacts with regard to use of energy would have a less than significant impact.

b) **Less Than Significant Impact.** As noted in the City's 2008 General Plan Conservation Element, the City of Perris has adopted sustainability goals to address several sustainable design issues. The first goal addresses the vision for energy and resource conservation and the use of green building design in the City. The second goal encourages project designs that support the use of alternative transportation facilities. The third goal encourages improved energy performance above the minimum California Title-24 standards. The fourth goal identifies the City of Perris' commitment to community leadership in environmentally conscience building practices and resource conservation.[9] The City of Perris 2008 General Plan Conservation Element also identifies several policy measures for projects to identify consistency with:

Policy VIII.A Adopt and maintain development regulations that encourage water and resource conservation.

Policy VIII.B Adopt and maintain development regulations that encourage recycling and reduced waste generation by construction projects.

Policy VIII.C Adopt and maintain development regulations which encourage increased energy efficiency in buildings, and the design of durable buildings that are efficient and economical to own and operate. Encourage green building development by establishing density bonuses, expedited permitting, and possible tax deduction incentives to be made available for developers who meet LEED building standards for new and refurbished developments (U.S. Green Building Council's Leadership in Energy and Environmental Design green building programs).

Policy IX.A Encourage land uses and new development that support alternatives to the single occupant vehicle.

Policy X.A Establish density bonuses, expedited permitting, and possible tax deduction incentives to be made available for developers who exceed current Title 24 requirements for new development.

Policy X.B Encourage the use of trees within project design to lessen energy needs, reduce the urban heat island effect, and improve air quality throughout the region.

Policy X.C Encourage strategic shape and placement of new structures within new commercial and industrial projects.

Policy XI.A The City shall support LEED development standards and gray water usage for all new and refurbished public buildings and facilities. All projects undertaken by the City, or that receive funding from the City or the Redevelopment Agency should be encouraged to utilize green building practices.

Policy XI.B The City shall actively reduce greenhouse gas emissions from public facilities throughout the community.

Policy XI.C The City shall encourage Green Building and Sustainable Community actions whenever possible through subsidy funding.

The proposed potable water well and associated equipment and appurtenances would use electrical power service that is currently provided by Southern California Edison. The proposed Project would be constructed pursuant to current electrical codes, including Title 24 of the State Building Code satisfying Policy VIII.C. Consistency with the Sustainability Goals and Policies of the Perris General Plan Conservation Element would further ensure that electrical energy would be used efficiently. As such, the proposed Project would have a less than significant impact.

VII. Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?		X		
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial direct or indirect risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

a.i.) **Less than Significant Impact.** According to the Perris Valley Commerce Center Specific Plan Environmental Impact Report (SPEIR), the Project site is not located within an Alquist-Priolo Earthquake Fault Zone or other known earthquake fault. The nearest Alquist-Priolo Earthquake Fault Zone is 8 miles east of the Project site. Therefore, impacts would be less than significant.

a.ii) **Less than Significant Impact.** The Project site is subject to strong seismic ground shaking, as are the majority of properties in Southern California. Since the Project consists of a wellhead, wellhead treatment facility, pumphouse, pipelines, and related facilities that are not intended for human habitation, the Project would not expose people or critical structures to adverse effects resulting from seismic-related ground. In addition, the Project facilities are specifically designed to withstand seismic conditions anticipated to occur at the Project site. Seismic conditions expected to occur in the Project area (see Seismicity discussion below) can be mitigated by special design using

reasonable construction and/or maintenance practices in the current California Building Code (CBC). Therefore, the seismic-related impacts related to strong seismic ground shaking would be less than significant.

a.iii) **Less than significant with Mitigation Incorporated.** Liquefaction is a phenomenon that occurs when soil undergoes transformation from a solid state to a liquefied condition when subjected to high intensity ground shaking. This typically occurs where susceptible soils (particularly the medium sand to silt range) are located over a high groundwater table (within 50 feet of the surface). Affected soils lose all strength during liquefaction and foundation failure can occur. According to the North Perris Groundwater Development Initial Siting Study (See Appendix D), groundwater depth in the Project area ranges from approximately 30 feet to 138 feet below ground surface (bgs).[10] The findings from the Drilling and Testing Summary Report for Exploratory Borehole EMWD_EX_PV01 (See Appendix E) indicate groundwater presence at 80 feet below ground surface (bgs) during drilling; the static water level in the borehole was then measured at 52 feet bgs.[11] Moreover, subsurface lithology is described as sandy soils, which are prone to liquefaction. These findings are consistent with the map of liquefaction zones from the PVCC SP EIR, which indicates that the Project site is located in an area with shallow groundwater and susceptible sediments, and thus may be subject to very high or high liquefaction susceptibility. The proposed Project could potentially expose people or structures to seismic-related ground failure, including liquefaction. This is a potentially significant impact, and mitigation is proposed to reduce the impact to less than significant.

Impact GEO-1: The proposed project would potentially expose people or structures to seismic-related ground failure, including liquefaction.

MM GEO-1: *Prepare Geotechnical Report.* Prior to obtaining an encroachment permit from the City of Perris, EMWD shall prepare a geotechnical report that details any design features for the proposed shed, fencing, well, wellhead treatment facility, and any related infrastructure. In addition, the investigation should evaluate the potential for liquefaction to occur onsite in accordance with the recommendations of the California Geological Survey. If portions of the site area identified as liquefiable, mitigation measures will be recommended by the project geotechnical consultant, which the project proponent shall implement in order to reduce the potential for liquefaction related distress to the proposed structures to less than significant.

a.iv.) **No Impact.** According to the site plan the Project site is located in an area that is relatively flat and there is no potential for landslides. No impacts would occur.

b) **Less than Significant Impact.** Topsoil is used to cover surface areas for the establishment and maintenance of vegetation due to its high concentrations of organic matter and microorganisms. The Project has the potential to expose surficial soils to wind and water erosion during construction activities. Wind erosion would be minimized through soil stabilization measures required by SCAQMD Rule 403 (Fugitive Dust), such as daily watering. Water erosion would be prevented through the City's standard erosion control practices required pursuant to the CBC and the National Pollution Discharge Elimination System (NPDES) regulations, such as silt fencing, fiber rolls, or sandbags. Following Project construction, the site itself would consist of a wellhead, wellhead treatment facility, pumphouse, pipelines, and related facilities. Impacts related to soil erosion would be less than significant with implementation of existing regulations.

c) Less than Significant Impact. Impacts related to liquefaction and landslides are discussed above in Sections a.iii and a.iv. Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer. The downslope movement is due to gravity and earthquake shaking combined. Such movement can occur on slope gradients of as little as one degree. Lateral spreading typically damages pipelines, utilities, bridges, and structures. Lateral spreading of the ground surface during a seismic activity usually occurs along the weak shear

zones within a liquefiable soil layer and has been observed to generally take place toward a free face (i.e., retaining wall, slope, or channel) and to lesser extent on ground surfaces with a very gentle slope. Collapse refers to a soil settling under its own weight when saturated with water. Over excavation and replacement with compacted fill would reduce potential adverse impacts related to collapse within the development. Since the Project site is located in an area that is highly susceptible to liquefaction, the proposed Project would have potentially significant impacts. However, adherence to the Project Geotechnical Report and the CBC would ensure impacts are less than significant.

d) **Less than Significant Impact.** The CBC requires special design considerations for foundations of structures built on soils with expansion indices greater than 20 that occur at a depth of four feet or less below grade. With adherence to the special design considerations for foundations and structures, the proposed Project will have less than significant impacts related to soil expansion. Impacts will be less than significant.

e) **No Impact.** The proposed Project includes a well, pumphouse, wellhead treatment facility, pipeline and related facilities. These facilities would connect to existing sewer lines. No impacts would occur.

f) **Less than Significant with Mitigation Incorporated.** Results of the paleontological resources records search through the Natural History Museum of Los Angeles County (NHMLAC) indicated no known paleontological resources recorded within the Project site or within a one-mile radius. Moreover, no paleontological resources were identified by MIG during the pedestrian survey. Nevertheless, the results of the literature review and the search at the NHMLAC indicate that the Project site is situated upon surficial deposits of Quaternary Alluvium, derived primarily as alluvial fan deposits from the hills immediately to the northeast and to the west. These Quaternary alluvial fan deposits are unlikely to contain significant fossil vertebrates, at least in the uppermost layers. Deeper and older Quaternary deposits that may contain significant fossil vertebrate remains underlie the surficial Quaternary Alluvium deposits. Excavations in this older alluvium has high potential to impact paleontological resources. A review of the City of Perris's General Plan indicate that the Project site is located within the vicinity of low to high paleontological sensitivity, exhibiting surface exposures of younger Pleistocene valley deposits overlying older valley alluvium at depth; thus, this Project requires paleontological construction monitoring once subsurface excavations reach five (5) feet in depth. The proposed Project could have potentially significant impacts to a previously undiscovered paleontological resource or unique geologic feature. Implementation of **MM GEO-2** through **MM GEO-5** would reduce potentially significant impacts to previously undiscovered paleontological resources or unique geological features to a less than significant level.

Impact GEO-2: The proposed Project has the potential to directly or indirectly destroy a previously undiscovered unique paleontological resource, site, or unique geologic feature.

MM GEO-2: *Conduct Paleontological Sensitivity Training for Construction Personnel.* The Applicant shall retain a professional paleontologist, who meets the qualifications set forth by the Society of Vertebrate Paleontology, shall conduct a Paleontological Sensitivity Training for construction personnel prior to commencement of excavation activities. The training would include a handout and would focus on how to identify paleontological resources that may be encountered during earthmoving activities, and the procedures to be followed in such an event; the duties of paleontological monitors; notification and other procedures to follow upon discovery of resources; and, the general steps a qualified professional paleontologist would follow in conducting a salvage investigation if one is necessary.

MM GEO-3: *Monitor Construction Excavations for Paleontological Resources is required at all depths and strata's below five (5) feet.* The Applicant shall retain a qualified paleontological monitor, who would work under the guidance and direction of a professional paleontologist, who meets the qualifications set forth by the Society of Vertebrate

Paleontology. The paleontological monitor shall be present during all construction excavations including, but not limited to grading, trenching, boring, and clearing/grubbing). Multiple earth-moving construction activities may require multiple paleontological monitors. The frequency of monitoring shall be based on the rate of excavation and grading. Paleontological monitoring levels can be reduced if appropriate, at the discretion of a professional qualified paleontologist.

MM GEO-4: *Cease Ground-Disturbing Activities and Implement Treatment Plan if Paleontological Resources Are Encountered.* In the event that paleontological resources and or unique geological features are unearthed during ground-disturbing activities, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A buffer area of at least 50 feet shall be established around the find where construction activities shall not be allowed to continue until appropriate paleontological treatment plan has been approved by the Applicant and the City. Work shall be allowed to continue outside of the buffer area. The Applicant and City shall coordinate with a professional paleontologist, who meets the qualifications set forth by the Society of Vertebrate Paleontology, to develop an appropriate treatment plan for the resources. Treatment may include implementation of paleontological salvage excavations to remove the resource along with subsequent laboratory processing and analysis or preservation in place. At the paleontologist's discretion and to reduce construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing.

MM GEO-5: *Prepare Report Upon Completion of Monitoring Services.* Upon completion of the above activities, the professional paleontologist shall prepare a report summarizing the results of the monitoring and salvaging efforts, the methodology used in these efforts, as well as a description of the fossils collected and their significance. The report shall be submitted to the Applicant, the City, the Natural History Museum of Los Angeles County, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the project and required mitigation measures.

VIII. Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?				X

a) **Less than Significant Impact.** Climate change is the distinct change in measures of climate for a long period of time. Climate change is the result of numerous, cumulative sources of greenhouse gas (GHG) emissions all over the world. Natural changes in climate can be caused by indirect processes such as changes in the Earth's orbit around the Sun or direct changes within the climate system itself (e.g., changes in ocean circulation). Human activities can affect the atmosphere through emissions of GHG and changes to the planet's surface. Human activities that produce GHGs are the burning of fossil fuels (coal, oil and natural gas for heating and electricity, gasoline and diesel for transportation); methane from landfill wastes and raising livestock, deforestation activities; and some agricultural practices.

GHGs differ from other emissions in that they contribute to the "greenhouse effect." The greenhouse effect is a natural occurrence that helps regulate the temperature of the planet. The majority of radiation from the Sun hits the Earth's surface and warms it. The surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping back into space and re-radiate it in all directions. This process is essential to supporting life on Earth, because it warms the planet by approximately 60° Fahrenheit. Emissions from human activities since the beginning of the industrial revolution (approximately 250 years ago) are adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap heat, thereby contributing to an average increase in the Earth's temperature. GHGs occur naturally and from human activities. GHGs produced by human activities include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). Since 1750, it is estimated that the concentrations of carbon dioxide, methane, and nitrous oxide in the atmosphere have increased over 36 percent, 148 percent, and18 percent, respectively, primarily due to human activity. Emissions of GHGs affect the atmosphere directly by changing its chemical composition while changes to the land surface indirectly affect the atmosphere by changing the way the Earth absorbs gases from the atmosphere.

GHG emissions for the proposed Project were quantified utilizing the California Emissions Estimator Model (CalEEMod) version 2013.2.2 to determine if the Project could have a cumulatively considerable impact related to greenhouse gas emissions. This modeling was conducted in August 2016, and while a newer version of the CalEEMod emissions modeler has since been promulgated, the newer version of the software in fact estimates less emissions than the earlier versions. This is due to the newer version having efficiencies built into it based on updated SCAQMD and California Building Code standard regulations, which reduce emissions projections in the short and long-term. As such, the air quality modeling data that was generated in 2016 is likely overestimating emissions relative to the newer version of the emissions modeler. As a worst-case estimator, the data is still valid for use in this analysis. Project related GHG emissions are summarized below in Table 5 (Total Project-Related GHG Emissions). The emissions inventory accounts for GHG emissions from construction activities and operational activities.

Table 5:
Total Project-Related GHG Emissions

Source	Metric Tons Per Year (MT/yr)			
	CO_2	CH_4	N_2O	Total CO_2E
Construction (30-YR)	3.21	0.00	0.00	3.22
Energy	3.46	0.00	0.00	3.48
Mobile	0.59	0.00	0.00	0.59
Total	**7.26**	**0.00**	**0.00**	**7.29***

Source: MIG 2016
* Totals may not equal due to rounding. "0.00" does not indicate the emissions are less than or equal to 0; rather, it indicates the emission is smaller than 0.01 but larger than 0.000.

Metric tons of carbon dioxide equivalent or MTCO2e is the unit of measurement used to measure GHG. The unit "CO2e" represents an amount of a GHG whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide (CO2), based on the global warming potential (GWP) of the gas. The total GHG emissions generated from the Project is approximately 7.29 metric tons of CO_2 equivalents MTCO2E per year which includes construction-related emissions amortized over a typical project life of 30 years. The total GHG emissions from the Project are below the lowest SCAQMD recommended screening level of 1,400 MTCO2E/yr for commercial projects. Therefore, the proposed Project would not exceed the applicable draft GHG screening thresholds and impacts would be less than significant.

b) **No Impact.** As shown above, the Project's greenhouse gas emissions would not result in a significant impact on the environment. Additionally, the Project's consistency with AB 32 and Senate Bill (SB) 32 are discussed below.

AB 32 Consistency. AB 32 was adopted in 2006 and requires California to reduce its GHG emissions to 1990 levels by 2020. CARB identified reduction measures to achieve this goal as set forth in the CARB Scoping Plan. Thus, projects that are consistent with the CARB Scoping Plan are also consistent with AB 32 goal.

The Project would generate GHG emissions, directly and indirectly, from a variety of sources. The CARB Scoping Plan includes strategies for implementation at the statewide level to meet the goals of AB 32. These strategies serve as statewide measures to reduce GHG emissions levels. The Project would be subject to the applicable measures established in the Scoping Plan because these measures are implemented at the state level. Therefore, the Project would not conflict or otherwise interfere with implementation of AB 32.

SB 32 Consistency. SB 32 was adopted in 2016 and requires the state to reduce statewide GHG emissions 40% below 1990 levels by 2030. SB 32 codifies the reduction target issued in Executive Order B-30-15. SB 32 builds upon the AB 32 goal of 1990 levels by 2020 and provides an interim goal to achieving Executive Order S-3-05's 2050 reduction goal of 80% below 1990 levels.

The CARB 2017 Scoping Plan identified reduction measures to achieve the SB 32 GHG reduction goal. Like the previously adopted Scoping Plans, the 2017 Scoping Plan includes statewide reduction measures that are implemented at the state level. The Project would be subject to the applicable measures established in the 2017 Scoping Plan because these measures are implemented at the state level.

Additionally, the 2017 Scoping Plan Update indicates "California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32"; and it recognizes the potential for California to "reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050."

The Project does not propose facilities or operations that would substantively interfere with any future County-mandated, state-mandated, or federally-mandated regulations enacted or promulgated to legally require development to assist in meeting state-adopted GHG emissions reduction targets, including those established under Executive Order S-3-05, Executive Order B-30-15, SB 32, or the 2017 Scoping Plan.

Therefore, the Project would not conflict with implementation of SB 32 or otherwise interfere with implementation of this or future goals.

IX. Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?			X	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires,?			X	

a) **Less than Significant Impact.** Implementation of the project could create significant hazards as a result of the routine transport, use, or disposal of hazardous materials.

Short-term (Construction Period) Activities. Project construction activities would involve the temporary use and transport of fuels, lubricating fluids, solvents, and other hazardous materials. The contractor would be required to develop and adhere to a Health and Safety Plan, which pursuant to California state Health and Safety Code Chapter 6.95, Division 20 (§§ 25500-25532), would minimize potentially hazardous effects of handling potentially hazardous materials during construction.

In addition, well drilling activities would use well fluids and produce drilling spoils, both of which would require disposal according to EMWD protocols, which conform to applicable governmental agency ordinances and regulations.[12]

Project compliance with federal, state, and local regulations pertaining to safe transport, use, handling, and disposal of hazardous materials would reduce these effects, and this potential would be considered a less-than-significant impact.

Long-term (Operational) Activities. The Project proposes to disinfect well water before distribution used sodium hypochloride at low concentrations (0.8%). Routine transport and use of sodium hypochloride to be used for disinfecting water would need to comply with federal, State and local regulations in addition to regulations related to disposal of wastes. Compliance with these regulations would minimize potentially hazardous effects, and impacts would be less than significant.

b) **Less than Significant Impact.** A Phase I Environmental Site Assessment (Phase I ESA) was prepared for the Project (See Appendix F) and included a search of environmental records and governmental databases, a permits search, contact with regulatory agencies, an on-site inspection, interviews with appropriate staff and regulatory agencies, and review of historical aerial photographs.[13]

The Phase I ESA revealed no evidence of "recognized environmental conditions" (RECs) on the Project site. During the site inspection, minor spills from stored waste oil and hydraulic fluid drums were observed, but the Phase I considered these to be de minimis conditions that would only require routine cleanup and removal by the applicant, and therefore would be considered a less-than-significant impact.

The Phase I ESA noted that there was no observed evidence of stormwater facilities, drains, or drainage ditches on the site, but indicated that a residential structure was formerly on-site, which would likely have used a sewage effluent disposal system ("onsite wastewater treatment system") that must be assumed to still be present. This could pose a hazard during proposed drilling operations. However, Project compliance with standard state plumbing code procedures for abandoned onsite wastewater treatment systems and Riverside County standards pertaining to water well location near onsite wastewater treatment systems would reduce the potential hazardous effects, and therefore any impact would be considered less than significant.

The Phase I ESA also indicated the possible presence of pesticides and herbicides from past agricultural use and potential lead-based paint and asbestos-containing materials (ACMs) present in the soils immediately surrounding the former residential structure. Depending on the depth and location of grading and trenching during Project construction, the potential exists that pesticide or herbicide residues in site soils and possible lead-based paint or ACMs could be encountered. However, the potential for human health risk may be considered low because of the elapsed time since these chemicals were used. Moreover, it is unlikely significant concentrations of these compounds are present in the soil underlying the Project site. Based on the evidence uncovered within the scope of the Phase I ESA, no negative impact to the target property from pesticides. No follow-up actions (e.g., soil borings or soil sampling to confirm the extent of possible soil contamination) were proposed. Therefore, impacts with regard to the above referenced substances would be less than significant.

c) **Less than Significant Impact.** No known existing or proposed schools exist within one-quarter mile of the Project site. The nearest school is over one-quarter mile away (Rancho Verde High School, approximately 1.0 miles northeast of the Project site). Impacts would be less than significant.

d) **Less than Significant Impact.** The Project site is not included on any state (Cortese) list of hazardous materials sites. In addition, the Project site is not included on any federal (EPA) list of hazardous materials sites. Impacts would be less than significant.

e) **Less than Significant Impact.** The Project site is located approximately 1.25 miles southeast of March ARB/Inland Port Airport, in Compatibility Zone D. Compatibility Zone D has no explicit upper limit on the intensity of development, except that land uses that would attract very high concentrations of people below or near the principal arrival and departure flight tracks would be discouraged. The Project site is not located in a principal flight track; therefore, on-site workers would not be exposed to safety hazards. Also, because the Project does not propose residential uses, there would be no people residing onsite.

However, the Project proposes construction of a 40-foot communication antennae that could pose a hazard to flight based on its height and because it is a source of electromagnetic radiation. This is a potentially significant impact, and could potentially pose a hazard to flights. However, prior to obtaining construction permits from the City of Perris, EMWD will be required to consult with staff at March Air Reserve Base regarding the height and electromagnetic radiation of the proposed communications antennae. With consultation with March Air Reserve Base prior to beginning construction, impacts would be less than significant.

f) **Less than Significant Impact.** The Project would not interfere with an emergency response plan. Project equipment and facilities would not impair access to any surrounding property. Construction of the water distribution pipeline would occur within public rights-of-way. In addition, review of Project plans by the City's Fire Department would ensure that adequate emergency access and circulation would be provided. Therefore, potential interference by the Project with emergency response and emergency evacuation plans would be a less-than-significant impact.

g) **Less than Significant Impact.** The Project Site is not located within or near any State Responsibility Areas[14] or other wildland areas The nearest such area is approximately 1.15 miles east of the Project site. Therefore, the potential impact related to wildland fire would be less-than-significant.

X. Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		X		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in:				
i) result in substantial erosion or siltation on- or off-site;			X	
ii) substantially increase the rate or the amount of surface runoff in a manner which would result in flooding on- or off-site;			X	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
iv) impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

a) **Less than Significant with Mitigation Incorporated.** A project normally would have an impact on surface water quality if discharges associated with the project would create pollution, contamination, or nuisance as defined in Water Code Section 13050, or that cause regulatory standards to be violated as defined in the applicable National Pollutant Discharge Elimination System (NPDES) stormwater permit or Water Quality Control Plan for a receiving water body. For the purpose of this specific issue, a significant impact could occur if the proposed Project would discharge water that does not meet the quality standards of the agencies which regulate surface water quality and water discharge into stormwater drainage systems. Significant impacts could also occur if the Project does not comply with all applicable regulations with regard to surface water quality as governed by the State Water Resources Control Board (SWRCB). These regulations include preparation of a Water Quality Management Plan (WQMP) to reduce potential post-construction water quality impacts.

Construction Impacts

Three general sources of potential short-term, construction-related stormwater pollution associated with the proposed Project include: 1) the handling, storage, and disposal of construction materials containing pollutants; 2)

the maintenance and operation of construction equipment; and 3) earth-moving activities which, when not controlled, may generate soil erosion via storm runoff or mechanical equipment. During site grading and excavation activities, bare soil would be exposed to wind and water erosion. If precautions are not taken to contain sediments, construction activities could produce sediment-laden storm runoff. In addition to increased erosion potential, hazardous materials associated with construction equipment could adversely affect water quality if spilled or stored improperly. Impacts associated with construction would be reduced to less than significant with the incorporation of **MM-HYD 1**.

Impact HYD-1: Construction activities have the potential to violate water quality or waste discharge requirements.

MM HYD-1: *Requirements for Contractors to Implement BMPs and Best Available Technologies.* EMWD would require contractors to implement BMPs and best available technologies to reduce potential impacts to water quality that would result from construction activities. To reduce or eliminate construction-related water quality impacts before the onset of construction activities, EMWD would obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Construction Permit. Construction activities would comply with the conditions of the permit including preparation of a storm water pollution prevention plan, implementation of BMP's, and monitoring impacts, if any, to water quality. As part of this process, multiple BMP's should be implemented to provide effective erosion and sediment control. BMP's to be implemented as part of this mitigation measure may include, but not be limited to, the following:

- Temporary erosion control measures such as silt fences, staked straw bales, silt/sediment basins and traps, check dams, sandbag dikes, and temporary re-vegetation or other groundcover shall be employed for disturbed areas.
- Storm drain inlets on the site and in downstream offsite areas shall be protected from sediment with the use of BMP's acceptable to EMWD, local jurisdictions and the California Regional Water Quality Control Board, Santa Ana Region.
- Dirt and debris shall be swept from the construction zone on a regular basis, particularly before predicted rainfall events.
- No disturbed surfaces shall be left without erosion control measures in place from early fall to early spring (October 15 and April 15).

<u>Operational Impacts</u>

The proposed Project would be subject to post-construction BMPs to address increases in impervious surfaces, methods to decrease incremental increases in off-site stormwater flows, and methods for decreasing pollutant loading in off-site discharges as required by the applicable NPDES requirements. Common post-construction BMPs include filtering stormwater through vegetated areas prior to discharge into the City's storm drain system or retaining stormwater on-site to filter back into the groundwater. The proposed well would not generate hazardous wastewater that would require any special waste discharge permits.

Therefore, impacts would be less than significant with adherence to existing regulatory requirements and with incorporated mitigation.

b) **Less than Significant Impact.** The proposed project is anticipated to produce between 1000 to 3000 acre feet of water annually. According to the North Perris Groundwater Development Initial Siting Study (EMWD, 2014), the estimated production rate in the area of the proposed well is up to 3000 acre feet per year. As such, the well would not overdraft water supplies from the groundwater basin. Therefore, the operation of the well would not substantially decrease groundwater supplies, interfere with groundwater recharge, nor impede sustainable groundwater management of the basin.

c.i) **Less than Significant Impact.** According to the City of Perris General Plan EIR, the project lies within San Jacinto watershed; the only major tributary within the City is the Perris Valley Channel (City of Perris, 2005). The channel lies less than a mile east of the Project. In addition, a smaller drainage ditch, "Lateral A", which flows into the Perris Valley Channel lies roughly one-quarter mile to the north of the proposed Project area. However, these do not lie within the proposed Project site and the Project would not result in the alteration of these drainages. Additionally, the Project is small in scale and would not lead to a substantial alteration of existing drainage patterns. Therefore, the impact is less than significant.

c.ii) **Less than Significant Impact.** As discussed in Section IX(c.i), a river or stream does not lie within the proposed Project site. Additionally, the Project is small in scale and would not lead to a substantial alteration of the existing drainage patterns. Therefore, the impact is less than significant.

c.iii) **Less than Significant Impact.** The project has the potential to produce runoff as "blow-off" (stagnant or dormant water which accumulates in the well between operational runs) results in excess water on-site. However, the project includes the construction of a blow-off pond designed to capture this water. The blow off pond would be up to 0.75 acres and be able to store u to 1.2 MG of water. The blow off pond also serves the purpose of percolating the water. In addition, the Project would include a wellhead treatment facility, which would prevent additional polluted runoff. Therefore, the impact would be less than significant.

c.iv) **Less than Significant Impact.** According to the General Plan EIR (City of Perris 2005), the Project does lie within the 100-year flood inundation zone; however, the Project does not contain features that would impede or re-direct flood flows under the flood scenario. Therefore, the impact would be less than significant.

d) **Less than Significant Impact.** According to the General Plan EIR (City of Perris 2005), the Project does lie within the maximum dam inundation area of four reservoirs (Pigeon Pass Reservoir, Lake Perris Reservoir, Little Lake Reservoir and Diamond Valley Lake). Lake Perris Reservoir is less than two miles east of the project. In 2005, the California Department of Water Resources (CDWR) identified a seismic safety risk in the Perris Dam (City of Perris, 2005); currently DWR is in the process of upgrading the dam for seismic safety (California Department of Water Resources, 2016). Therefore, the structures being built as a part of this Project would be subject to potential damage under a dam failure scenario. However, existing dam safety regulations along with the benefit of the new seismic upgrade would result in a less than significant impact. The Project site is not subject to tsunami due to its elevation (over 1000 feet) and distance from the ocean. According to DWR's Perris Dam Remediation Program EIR (2010), there is the possibility of a seiche waves at Lake Perris; however, the dam is designed to contain these events; additionally, the strengthening of the dam further reduces this risk. According to the General Plan, the Perris Valley does contain areas with risk of mud or debris flow however these areas with the highest risk are within canyon or stream bottoms. Therefore, impacts would be less than significant.

e) **Less than Significant Impact.** The Regional Board's Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan (i) designates beneficial uses for surface and ground waters, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy, and (iii) describes implementation programs to protect all waters in the region. Development allowed by the Project would be required to adhere to requirements of the water quality control plan, including all existing regulation and permitting requirements. This would include the incorporation of best management practices (BMPs) to protect water quality during construction and operational periods. Development of the Project would also be subject to all existing water quality regulations and programs, including all applicable construction permits. Existing General Plan policies related to water quality would also be applicable to the Project. Implementation of these policies, in conjunction with compliance with existing regulatory programs, would ensure that water quality impacts related to the Project would be less than significant.

XI. Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

a) **No Impact.** The Project site is located in the northern part of the city, in Planning Area 1, which is primarily made up of land designated for industrial and business park uses. Existing uses are characterized as agricultural, residential, commercial, and industrial. The Project site is also included in the Perris Valley Commerce Center Specific Plan, which has been designed to encourage a mix of land uses, and also to implement General Plan infrastructure improvement needs, such as roads, water, sewer, and flood control facilities. As such, the Project use would be consistent with the general uses in the vicinity and therefore would not divide an established community.

b) **No Impact.** As stated above, the Project site is included in the Perris Valley Commerce Center Specific Plan, which encourages urbanization of this area/site. The proposed Project would not change the land use designation/zoning of the site because it is exempt from the City zoning ordinance pursuant to Section 53091(e) of the California Government Code, which exempts construction of facilities for production, generation, storage, treatment, or transmission of water. With that said, as the analysis herein shows, the Project would avoid significant environmental impacts with the implementation of mitigation measures. Therefore, implementation of the proposed Project would not conflict with applicable plans, policies and regulations. As discussed previously, the Project would not conflict with the Western Riverside MSHCP.

XII. Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

a) **No Impact.** The Project site is designated as "Urban Area" by the California Geological Survey, and therefore is not considered a mineral resource site by the state. No impacts would occur.

b) **No Impact.** The Project site is not designated as a mineral resource site in either the General Plan or the Perris Valley Commerce Center Specific Plan. No impacts would occur.

XIII. Noise

Would the project result in	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?		X		
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	

a) **Less-than-Significant With Mitigation Incorporated.** Chapter 7.34.060 of the Perris Municipal Code regulates construction noise in the City. It is unlawful for any person between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on a legal holiday, with the exception of Columbus Day and Washington's birthday, or on Sundays to erect, construct, demolish, excavate, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise. Construction activity shall not exceed 80 dBA in residential zones in the city.

Chapter 16.22 of the Perris Municipal Code regulates new development including "sensitive receptors" located near arterials, railroads and the airport. "Sensitive receptors" refers to types of land uses that are adversely affected by various noise sources. Such land uses are defined in Section 16.22.020 of the Municipal Code to include: residences, schools, libraries, hospitals, churches, offices, hotels, motels, and outdoor recreational areas. Factors used to define sensitive receptors include the potential for interference with speech communication, the need for freedom from noise intrusion, the potential for sleep interference, and subjective judgment. "Noise impacted projects" are defined as residential projects, or portions thereof, which are exposed to an exterior noise level of 60 dBA CNEL or greater. Such projects must include noise insulation design and construction assemblies that achieve an exterior-to-interior noise reduction sufficient to keep interior noise levels to a maximum of 45 dBA CNEL. This standard applies to any habitable room furnished for normal use with doors and windows closed. Specific construction techniques and materials that will achieve various levels of noise reduction are defined. Specifications for preparation of an acceptable acoustical report are also defined.

Existing Noise Environment. The Project site is located in the northern part of the city, in Planning Area 1, where existing uses are characterized as agricultural, residential, commercial, and industrial. General Plan noise measurements for the area indicate ambient noise levels ranging from 41.4 dBA to 72.7 dBA, with an average noise level of approximately 53.5 dBA. The Project site is bounded to the north, south, and east by vacant land, and on the west by a residential dwelling, with an office building and RV storage further west. The greatest contributor to ambient noise near the Project site is traffic noise along Nance Street, which is minimal given that Nance Street is a dirt road. Other noise sources in the area include construction activities and aircraft overflights. There are no discernible, substantial stationary noise sources within or near the Project site.

As described above under "Project Description," the Project would be developed in three phases: Phase 1 (Drilling and Testing) and Phase 2 (Equipping) would constitute short-term activities; Phase 3 (Operation and Maintenance) would constitute long-term activities.

Short-Term Activities. Phase 1 would include continuous activities (24 hours per day, seven days per week) for three to four weeks, followed by a decrease in activity to 12 hours per day for an additional two weeks. These activities would include drilling test wells, constructing temporary structures (a field office, dog house, pipe storage areas, etc.), and installing an approximately 60-foot long sewer line connection. Project plans also call for installation of a 24-foot high sound barrier. At the end of Phase 1, the temporary structures would be removed. Equipment for Phase 1 would include a drill rig, air compressor, tractor/backhoe/loader, off-highway trucks, water trucks, sweeper/scrubber, and plate compactor.

Phase 2 anticipates activities for 12 hours per day for a period of four weeks. Activities would include construction of the well building (approximately 2,500 square feet) and installation of related equipment (i.e., wellhead treatment facility, turbine pumping unit and drive, disinfection equipment, possible air removal facilities). An alternative pump design may be considered during Project design. A new transmission pipeline would be constructed either along the public right-of-way west on Nance Street to Perris Boulevard (Alternative #1) or east on Nance Street to Redlands Avenue (Alternative #2).

Other improvements during Phase 2 would include creating a blow-off pond and connecting it to the well production facility via an approximately 200 foot long pipe, and constructing an electrical transformer for connection to Southern California Edison service. (A 40-foot high communication antenna tower is anticipated at some unspecified future date.) Equipment for Phase 2 would be similar to Phase 1, but would include a crane instead of a drilling rig.

Short-Term Noise Impacts. Noise associated with short-term (Phase 1 and Phase 2) activities would result primarily from construction activities. Construction noise impacts usually occur during the noise-sensitive times of the day (i.e., early morning, evening, or night hours), or in areas immediately adjoining noise-sensitive land uses, or if construction lasts a long time. Construction activities expected to generate considerable amounts of noise would depend on the types of construction equipment used, the timing and duration of noise-generating activities, and the distance between the noise sources and noise-sensitive receptors.

Earth-moving equipment such as graders, scrapers, bulldozers, and backhoes commonly generate maximum noise levels of 80 to 85 dBA at a distance of 100 feet. Table 6 shows noise levels from typical construction equipment at a distance of 50 feet. (Note that pile drivers, the noisiest piece of construction equipment, are not planned to be used for the proposed Project.) Noise levels at 50 feet associated with general types of construction projects are shown in Table 7. As Table 7 shows, construction noise levels commonly range from about 78 to 88 dBA measured at a distance of 50 feet from the center of the activity. Construction noise levels drop off at a rate of about 6 decibels per doubling of distance between the source and the receptor. However, these short-term (Phase 1 and Phase 2) activities could produce substantial noise effects in excess of agency standards.

EMWD follows the Riverside County Noise Standard (County Ordinance No. 847 & 847.1), which permits a maximum noise level up to 65 dBA during daytime hours and 55 dBA during nighttime hours (Table 1, Sound Level Standards). Some construction would occur near property lines, and could exceed the County noise standard, which would therefore be considered a potentially significant impact. However, implementation of MM NOI-1 is recommended to reduce this potentially significant impact to less than significant.

Impact NOI-1: The proposed Project could expose people to excess noise levels.

MM NOI-1: *Implement Noise Control BMPs.* Consistent with EMWD noise control practices,[15] the following measures shall be implemented to reduce noise from short-term project activities:

(a) Scheduling. Noise levels in excess of 65 db shall be allowed only during daytime operations for brief periods of time. Every reasonable effort shall be made to minimize noise levels during nighttime operations to below the allowed 55 dBA, including, as appropriate, limiting activities near sensitive receptors to daytime hours. The measures to be used in effecting noise suppression shall include, but are not limited to, equipping all internal combustion engines with critical residential silencers (mufflers), sound blankets shielding noise-producing equipment from nearest areas of human occupancy by locating in such positions as to direct greatest noise emissions away from such areas, and conducting operations in the most effective manner to minimize noise generation consistent with the execution of the contract in a timely and economic manner.

(b) Noise Control Barriers. Noise control barrier walls and equipment shall be installed as needed to achieve a noise level of 55 db or less at the property lines. Noise control barrier walls shall be designed by a registered civil engineer to minimize disturbance to persons living or working nearby, and to the general public.

(c) Equipment Mufflers and Maintenance. Equip all internal combustion engines with critical residential silencers (mufflers); install sound blankets over equipment; shield noise-producing equipment; and install noise control barrier walls.

(d) Idling. Prohibit unnecessary idling of internal combustion engines.

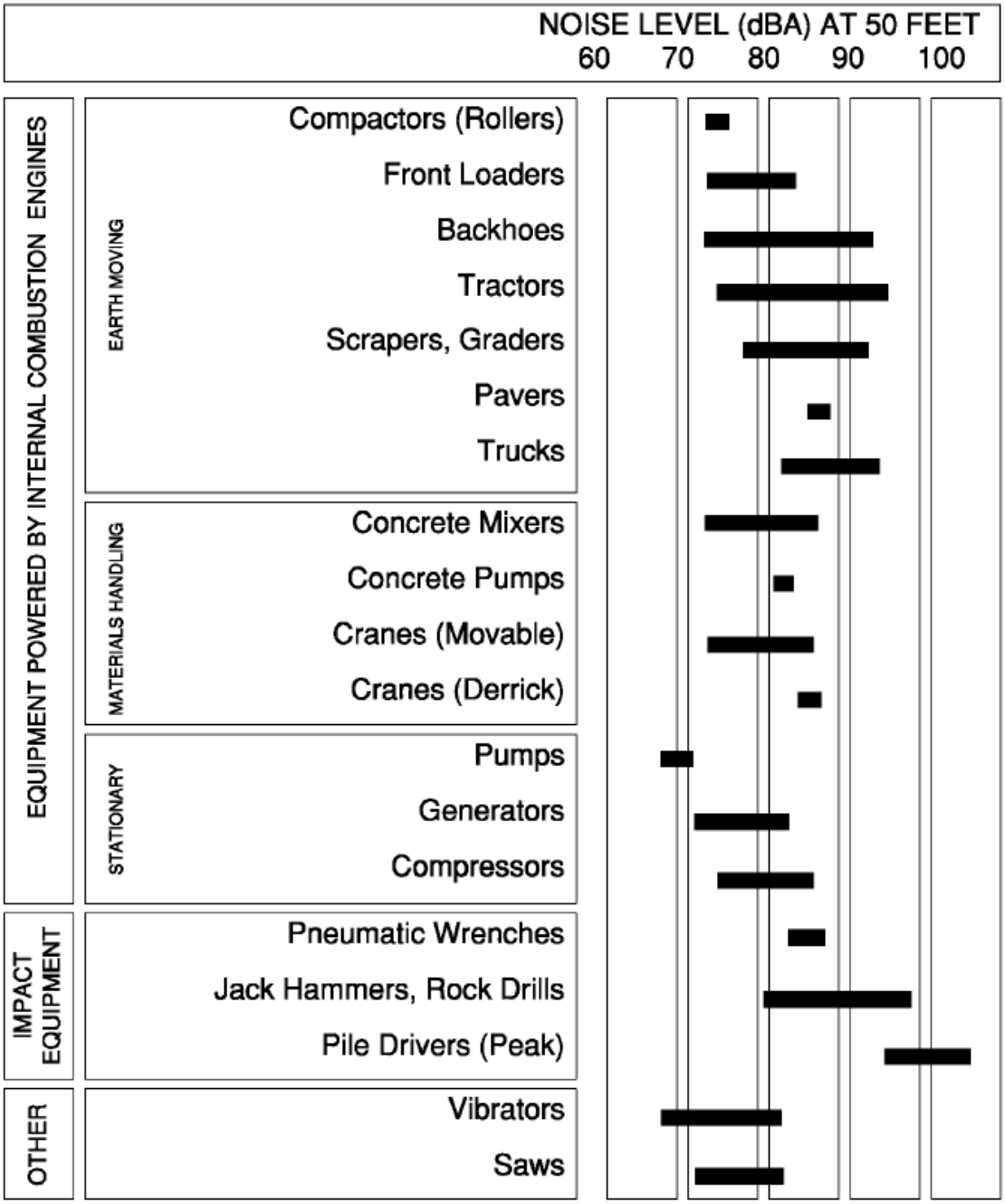
(e) Equipment Location. Locate all stationary noise-generating equipment, such as air compressors, as far as practical from existing nearby residences and other noise sensitive land uses.

(f) Quiet Equipment Selection. Select quiet equipment, particularly air compressors, whenever possible. Fit motorized equipment with proper mufflers in good working order.

(g) Noise Disturbance Coordinator. A noise disturbance coordinator responsible for responding to any local complaints about construction noise shall be designated. The disturbance coordinator shall determine the cause of any noise complaint (i.e., bad muffler) and require that reasonable measures be implemented to correct the problem. Prior to beginning of noise-intensive activities, a telephone number for the noise disturbance coordinator shall be prominently included in the notice to be issued by the EMWD to all adjacent residents who may be affected by the project.

Implementation of these measures would reduce the short-term noise impacts of the Project to a less-than-significant level.

Table 6:
Typical Construction Equipment Noise Levels



NOTE: Based on limited available data samples.

SOURCE: United States Environmental Protection Agency, 1971, "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances," NTID 300-1.

Table 7:
Typical Noise Level Ranges at 50 Feet, L_{eq} in dBA at Construction Sites

	Domestic Housing		Public Works Roads and Highways, Sewers, and Trenches	
Phase	I	II	I	II
Ground Clearing	83	83	84	84
Excavation	88	75	88	78
Foundations	81	81	88	88
Erection	81	65	79	78
Finishing	88	72	84	84

SOURCE: U.S. EPA, Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.

Sensitive Receptors. As shown in Figure 1 (Regional and Vicinity Map), there are three nearby residential dwellings that could be considered sensitive receptors. One dwelling unit is located on Flair Court, immediately west and adjacent to the Project. The other two dwelling units are located along Nance Street; one at the corner of Las Palmas (aka Johnson) and Nance Street approximately 705 feet to the east of the Project site, and the second approximately 1,090 feet to the east of the Project site on Nance Street. These residential dwellings could be subject to substantial construction period noise. Noise from constructing the field office and settling tanks near the west side of the Project site could exceed the EMWD noise standard for the dwelling on Flair Court. Noise from constructing the new transmission pipeline proposed in Alternative #2 could exceed the EMWD noise standard for the two dwellings along Nance Street. Noise effects exceeding the EMWD standard on any of these residential dwellings would therefore be considered a potentially significant impact, and mitigation is proposed to reduce this impact to a less than significant level.

Impact NOI-2: The proposed Project would expose sensitive receptors to excess noise levels.

MM NOI-1 See description above.

With **MM-NOI-1** incorporated, impacts would be less than significant.

Long-term (Operational) Activities. Project long-term activities would include operation of the well (running the pump and turbine, possible use of air removal equipment, disinfectant preparation, etc.). Weekly site visits by staff are also anticipated, but are not expected to produce a noticeable (3 dBA) increase in traffic noise, and so would not be considered a significant effect. The well building would house the pumping plant equipment, disinfection facilities, and possible air removal equipment, and would be located approximately 125 feet from the nearest sensitive receptor (the residential dwelling on Flair Court, on the western adjacent parcel). Though the building structure as well as its distance from the dwelling might provide sufficient noise attenuation, Project mechanical (i.e., pump and turbine) noise could create excessive noise levels. Because Project details do not include noise characteristics of the production equipment or how effective the structure would be in buffering mechanical noise, project operations could exceed noise level standards, which would represent a potentially significant impact. Mitigation is proposed to reduce this impact to a less than significant level.

Impact NOI-3: Long-term operation of the proposed project could expose people to excess noise levels.

MM NOI-2: *Project Equipment Review and Revision by Acoustic Specialist.* Prior to any Project design approval, information regarding equipment sound generation characteristics and sufficiency of buffering or other attenuation measures that demonstrate Project compliance with established noise standards shall be reviewed by a qualified acoustical specialist, and any necessary changes to Project plans shall be made.

With **MM-NOI-2** incorporated, impacts would be less than significant.

b) **Less-than-Significant With Mitigation Incorporated.** Project noise impacts are discussed under item (a) above, including measures designed to reduce impacts.

Common sources of vibration within communities include railroads and construction activities. The Project site is approximately 1.8 miles to the east of the nearest railroad tracks, and therefore would not be exposed to vibration from railroad activities. However, short-term Project activities may cause a temporary increase in groundborne vibration in the Project vicinity.

Groundborne vibration generated by construction activities is generally highest during pile driving, which is not planned. Next to pile driving, grading activity has some potential for structural vibration impacts if large bulldozers, large trucks, or other heavy equipment are used where very old structures are present. Though the Project would not require pile driving, short-term (Phase 1 and Phase 2) activities would be expected to use heavy equipment (i.e,. tractor/backhoe/loader, trucks, air compressor, drill rig, crane) that could produce excessive short-term groundborne vibration. Use of heavy equipment during Project demolition and construction activities could generate substantial vibration levels that may damage nearby structures and/or interfere with human activities, which would be considered a potentially significant impact. Mitigation is proposed to reduce this impact to a less than significant level.

Impact NOI-4: Short-term construction activities could expose people to excess groundborne noise and vibration.

MM NOI-3: *Implement Groundborne Vibration BMPs.* To reduce groundborne vibration levels on nearby receptors (within 50 feet of project activities) to acceptable levels, incorporate the following measures:

(a) Restrict vibration-generating activity to between the hours of 7:00 AM and 7:00 PM, Monday through Friday. (People are more aware of vibration in their homes during the nighttime hours.) Prohibit such activity on weekends and holidays.

(b) Operate earth-moving equipment on the construction lot as far away from vibration-sensitive sites as possible.

(c) Phase demolition, earth-moving and ground-impacting operations (including removal of temporary structures) so as not to occur in the same time period. Unlike noise, the total vibration level produced could be significantly less when each vibration source operates separately.

(d) Select demolition methods not involving impact, where possible.

(e) Avoid vibratory rollers and packers near sensitive areas.

(f) Notify nearby residents and property owners prior to the beginning of vibration-generating activities.

Incorporation of these measures would reduce groundborne vibration impacts to less-than-significant levels.

c) **Less-than-Significant Impact.** The Project site is located approximately 1.5 miles south of March Air Reserve Base/Inland Port Airport. The Project site is located outside of the 60 dB noise contour and outside the designated General Approach/Departure Traffic Pattern Envelope, within which approximately 80 percent of aircraft overflights are estimated to occur. Therefore, the impact from airport noise would be less-than-significant.

XIV. Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

a) **No Impact.** The City of Perris is a rapidly growing City; the United States Census Bureau estimates the City's population as 74,971 as of 2015; this is an increase of over 6000 residents from 2010 when the population was 68,386 (United States Census Bureau 2016). In fact, the population has increased from 36,393 since the year 2000. This Project is not anticipated to create new jobs and result in subsequent growth in the area. In general, the Project is designed to meet planned growth demands for water in the region. The proposed Project would not require any regularly employed staff. The only operations at the facility would be monthly landscaping and periodic maintenance visits. Therefore, the proposed Project would not be expected to generate any new employment or induce any population growth in the City or region, and no impact would occur. Therefore, no impacts would occur.

b) **No impact.** The proposed Project would occur on a vacant parcel of land and, thus would not result in the displacement of any existing people or housing. No impact would occur.

XV. Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Fire protection?				X
b) Police protection?				X
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

a) **No impact.** The City of Perris contracts with the Riverside County Fire Department provide fire protection services within the City; the City has two fire stations and fourteen firefighters.[16] The proposed Project consists of water extraction, treatment and distribution facilities to be constructed on a vacant parcel and within the existing roadway right of way. All facilities would be constructed to existing code requirements using materials that would minimize potential fire related issues. The Project would not spur the growth of the region in an unplanned manner that would place unexpected future demands on existing fire services. As such, it would not require the building of new fire protection related buildings or structures. There would be no impact to fire protection services.

b) **No impact.** The City of Perris contracts with the Riverside County.[17] The Project would occur on one parcel and the property will have a security fence around it to secure the well and the property. No other increased demands for security would occur as a result of the proposed Project. The Project would not result in increased demand for police services and subsequently not result in the provision of new or expanded police facilities. Therefore, there would be no impact to police protection services.

c) **No impact.** The City of Perris is served by three school districts: (1) the Perris Elementary School District (2) the Perris Union High School District; and (3) the Val Verde Unified School District.[18] Including charter schools, the Perris Elementary School District has eight elementary schools and one middle school. The Perris Union High School District is comprised of five high schools (this includes the California Military Institute). The Val Verde Unified School District contains six elementary schools, two middle schools and three high schools. The proposed Project includes the construction of water extraction, treatment and delivery facilities on a vacant parcel, and the extension of pipelines within the existing roadway right-of-way. The proposed Project would not directly impact area schools, nor would it result in the demand for additional schools as there would be no increase of population. The Project would not require the construction or expansion of schools or education related facilities. There would be no impact to schools as a result of the proposed Project.

d) **No impact.** The City of Perris maintains 17 parks and/or facilities (e.g Senior Center) throughout the City.[19] The proposed Project includes the construction of water extraction, treatment and delivery facilities on a vacant parcel, and the extension of pipelines within the existing roadway right-of-way. The proposed project would not directly impact existing parks, nor would it result in the demand for additional parks as there would be no increase of population. There would be no impact to parks.

e) **No impact.** The proposed Project would not impact any other public facilities.

XVI. Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

a) **No Impact.** The City of Perris maintains 17 parks and/or facilities (e.g Senior Center) throughout the City. [20] The proposed Project includes the construction of water extraction, treatment and delivery facilities on a vacant parcel, and the extension of pipelines within the existing roadway right-of-way. The proposed project would not directly impact existing parks, nor would it result in the demand for additional parks as there would be no increase of population. Therefore, the Project would not result in the increased deterioration of a recreational facility. Therefore, there would be no impact.

b) **No Impact.** The Project does not include any recreational facilities or require the construction of new facilities and there would not be an adverse physical effect to the environment. Therefore, there would be no impact.

XVII. Transportation

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Would the project conflict or be inconsistent with CEQA guidelines section 15064.3, subdivision (b)?				X
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e) Result in inadequate emergency access?			X	

a) **Less than Significant Impact.** The Project area is within the Perris Valley Commerce Specific Plan; the specific plan has the purpose of providing guidance to create a high quality area for industrial, commercial, and office land uses (City of Perris 2012). The plan addresses transportation and circulation in the specific plan area; the area includes a freeway (I-215), a parkway (Mid-County Parkway), the Ramona Expressway, three arterials and several secondary arterials. The plan is designed, in part, to accommodate the traffic associated with existing and future trucking and vehicular traffic in the area. Numerous truck routes exist in the specific plan area including Perris Blvd, Redmond Avenue and Harvey Knox Blvd; all three of these roads are relatively close to the Project area. These truck routes serve the commercial and industrial uses in the area including the Home Depot, Lowes and Ross Stores Distribution Centers; the result is increased traffic due to employees traveling to the warehouses and traffic associated with delivery trucks. There would be an increase construction related traffic while the facilities were being constructed. Operation of the facility would include occasional maintenance and landscaping trips to and from the site. The increase in both construction and operational traffic is considered a less than significant impact.

The Perris Valley Commerce Center Specific Plan (2012) addresses non-vehicular traffic in the specific plan area; the plan considers both pedestrian and bicycle path circulation. The proposed Project does not include changes to roadways or design features that would conflict with the performance or safety of alternative transportation facilities. Therefore, there would be no impact.

b) **No Impact.** CEQA Guidelines Section 15064.3 subdivision (b) has been included in the 2018 CEQA Guidelines as part of the implementation of SB 743 which requires local jurisdictions to use Vehicle Miles Travelled (VMT) instead of Level of Service (LOS) methodologies for the purpose of determining the significance of traffic impacts under CEQA. Also, as part of the implementation of SB 743 local jurisdictions are given until July 1, 2020 to develop and implement thresholds of significance criteria and methodologies for evaluating VMT under the new SB 743 requirements. Moreover, as discussed in Section XVII(a) above, the contribution to traffic due to this Project would be minimal. Therefore, impacts with respect to CEQA Guidelines Section 15064.3(b) are less than significant.

c) **Less than Significant Impact.** The operation of the Project would occur within one parcel and would not impact surrounding roads or create dangerous curves or intersections. During construction, routine road closures or one-way traffic may be required when extending the pipelines from the project site to existing underground utilities. During construction, the proposed Project would comply will all local regulations regarding temporary road closures or and/or one-way traffic controls. Therefore, impacts would be less than significant.

d) **Less than Significant Impact.** The operations of the proposed Project would not result in inadequate emergency access. If road closures and/or one way traffic controls are required during construction, EMWD would comply with all requirements of the City, Sherriff, and Riverside County Fire. Impacts would be less than significant.

XVIII. Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a Cultural Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or				X
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

California Assembly Bill (AB) 52, through its implementing regulations, requires that lead agencies consult with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the Proposed Project and who have requested in writing to be informed by the lead agency of proposed projects in the tribe's geographic area (PRC Section 21080.3.1(b) and (d)). Pursuant to AB 52, EMWD as the CEQA Lead Agency sent AB 52 consultation notification letters via certified mail on November 27, 2019 to six Native American groups affiliated with the Project's geographic area (**Table 8**). The letters included a description of the Proposed Project and provided a map figure depicting the Project location. In a letter dated December 30, 2019, Lacy Padilla, Archaeologist with the Agua Caliente Band of Cahuilla Indians' Tribal Historic Preservation Office requested formal government-to-government consultation. EMWD responded with an e-mail to Lacy Padilla on December 30, 2019. EMWD held AB52 consultation with the Agua Caliente Band of Cahuilla Indians on January 6, 2020. In an e-mail dated December 6, 2019, Travis Armstrong, Tribal Historic Preservation Officer for the Morongo Band of Mission Indians, deferred to the Pechanga Band of Luiseno Indians for the Proposed Project. In an e-mail dated January 2, 2020 from Juan Ochoa, Assistant Tribal Historic Preservation Office for the Pechanga Cultural Resources Department, the Tribe transmitted a letter from Tuba Ebru Ozdil (Tribal Cultural Analyst) requesting formal government-to-government consultation. EMWD responded to Juan Ochoa via e-mail on January 2, 2020. EMWD held AB52 consultation with the Pechanga Band of Luiseno Indians on January 27, 2020. In a letter dated December 19, 2019, Cheryl Madrigal, Tribal Historic Preservation Officer with the Rincon Band of Luiseno Indians stated that the Tribe did not request immediate government to government consultation. EMWD responded with an e-mail to Cheryl Madrigal on December 26, 2019. In a letter dated January 3, 2020, Joe Ontiveros, Tribal Historic Preservation Officer with the Soboba Band of Luiseno Indians requested formal government-to-government consultation. EMWD responded with an e-mail to Joe Ontiveros on January 6, 2020. EMWD held AB52 consultation with the Soboba Band of Luiseno Indians on January 23, 2020. In an e-mail dated December 17, 2019, Alexandra McCleary, Tribal Archaeologist with the San Manuel Band of Mission Indians stated that the Tribe did not request government to government consultation. EMWD responded with an e-mail to Alexandra McCleary on December 17, 2019.

Table 8:
Summary of AB52 Consultation

Contact	Tribe/Organization	Date Notification Sent	Response Received	EMWD Response	Meeting
Lacy Padilla	Agua Caliente Band of Cahuilla Indians	11/27/19	12/30/19	12/30/19	1/6/20
Travis Armstrong	Morongo Band of Mission Indians	11/27/19	12/6/19	12/9/19	Deferred to Pechanga
Tuba Ebru Ozdil	Pechanga Band of Luiseno Indians	11/27/29	1/2/20	1/2/20	1/27/20
Destiny Colocho	Rincon Band of Luiseno Indians	11/27/19	12/19/19	12/26/19	Did not request consultation
Joe Ontiveros	Soboba Band of Luiseno Indians	11/27/19	1/3/20	1/6/20	1/23/20
Alexandra McCleary	San Manuel Band of Mission Indians	11/27/19	12/17/19	12/17/29	Did not request consultation
SOURCE: EMWD, 2020					

a) **No Impact.** No tribal cultural resources were identified as a result of consultation with Aqua Caliente Band of Cahuilla Indians, Pechanga Band of Mission Indians or Soboba Band of Luiseno Indians. Therefore, no tribal cultural resources listed in or eligible for listing in the California Register, or on a local register of historic resources as defined in PRC Section 5020.a(k) would be impacted by the Project and no mitigation is required. No impact would occur.

a) **No impact**. No tribal cultural resources were identified as a result of the consultation with Agua Caliente Band of Cahuilla Indians, Pechanga Band of Mission Indians or Soboba Band of Luiseño Indians. Therefore, no tribal cultural resources that have been determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1, would be impacted by the Project and no mitigation is required. No impact would occur.

XIX. Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

a) **Less than significant impact.** The Project would require water, wastewater collection and treatment, storm water drainage, electrical power, natural gas, and telecommunication facilities. An analysis of impacts is provided below.

Water

Operation of the proposed water well would not require the provision of any municipal water supplies. As the Project does not include the construction of dwelling units, no WSA is required.[21] Water use within the City includes domestic, commercial, industrial and landscape irrigation. Most connections within the City's service area, including landscaped areas and City parks, are metered. Based on the fact that the proposed well will not require municipal water supply during operation, and will actually contribute to the overall water supply in the region, it can be assumed that water demand from the development will not exceed the City's annual water demand and would not require the relocation or construction of new or expanded water supply facilities. Therefore, impacts will be less than significant.

Wastewater

The local wastewater treatment system is designed to comply with federal regulations (National Pollution Discharge Elimination System) administered by the RWRCB (City of Perris 2004). Moreover, the proposed Project is anticipated to generate nominal wastewater during normal operations and periodic maintenance activities as a result of inclusion of a restroom that will connect to existing sewer lines in Nance Street. Therefore, the proposed Project

would not result of new or expanded wastewater treatment facilities. Therefore, the Project would have a less than significant impact.

Stormwater

At Project completion the site would be comprised of pervious and impervious surfaces. Stormwater would either be absorbed into pervious surfaces or would travel as sheet flow off the impervious surfaces and onto the pervious surfaces where it would be absorbed. Post-Project runoff from the site would equal pre-project runoff, with excess runoff from increased impervious surfaces being directed to an on-site retention/detention basin. Therefore, through the proposed Project would have a less than significant impact on stormwater facilities.

Electric Power

The Project site would be serviced by Southern California Edison, and would connect to the existing power grid via above ground electrical lines along Nance Street. Although the Project would require new electrical line tie ins for service, it would not result in the need for new electrical substations or electrical generating facilities. Additionally, the potable water well and associated equipment and appurtenances would use a minimal amount of electricity during operation. Therefore, the Project would have a less than significant impact.

Natural Gas

The Southern California Gas Company (Gas Company) would provide natural gas services to the Project site. The majority of the gas supply is transported via transmission pipelines owned by private companies. Any new connections and service installations would be reviewed and approved by the Gas Company and the Riverside County Public Works Department. Although the Project would require new natural gas services connections, it would not result in the need for new natural gas supplies or infrastructure. Therefore, the Project would have a less than significant impact.

Telecommunication Facilities

The proposed Project would include construction of a communication tower antenna measuring approximately 40 feet high for purpose of communicating with EMWD's Supervisory Control and Data Acquisition (SCADA) system. The Project would not require the construction of any other telecommunications facilities. The Project site would be required to comply with all Federal, State and local regulations for installation and wiring of telecommunications to the Project. With adherence to existing Riverside County Electrical, Building and Safety code requirements, the Project would have a less than significant impact.

For the above reasons, the Project is not anticipated to require relocation or construction of new or expanded wastewater treatment, storm drainage, electric power, natural gas, or telecommunications facilities.

b) **Less than Significant Impact.** EMWD provides water service for the majority of the City of Perris; a relatively small portion of the City is served by the City of Perris Water District (near downtown). However, the City of Perris Water District purchases water for distribution from EMWD (City of Perris 2004). The proposed Project is a new water facility and provides EMWD with an additional source of supply in light of the decrease in water available through the SWP during the drought years and due to the uncertainty in the future of this source. The Project itself would not increase the demand for water in the region, as it would serve the existing population and anticipated future growth. Therefore, the proposed Project would have a less than significant impact as sufficient water supplies are available to serve the Project during normal, dry, and multiple dry years.

c) **Less than Significant Impact.** Wastewater is treated by EMWD at the Perris Valley Regional Water Reclamation Facility; the facility has typical inflows of 13.8 million gallons per day (mgd) (Eastern Municipal Water District, 2014). Currently, the facility has the capacity to treat 22.0 mgd so the facility has capacity for potential future increases in wastewater. In any case, the Project, a potable water well and treatment facility, is not anticipated to result in a substantial increase the amount of wastewater because wastewater would not be a byproduct of the proposed operations.

d) **Less than Significant Impact.** Solid waste disposal is provided by CR&R Incorporated – Environmental Services. According to CalRecycle (2016) , in 2015, waste is primarily transferred to the El Sobrante Landfill in Corona or the Badlands Landfill in Moreno Valley (these two landfills took in about 96% of the waste produced in Perris during 2015). Several other landfills received substantially smaller amounts of waste including the Sycamore Landfill in Santee and Lamb Canyon Sanitary Landfill in Beaumont. This analysis would focus on the El Sobrante and Badlands landfills The El Sobrante Landfill is managed by Waste Management and was estimated to have 209 million cubic yards of remaining capacity as of 2014 (Waste Management 2014); the landfill was estimated to have 50 years of projected operations as of 2014. The Riverside County Department of Waste Resources operates the Badlands Sanitary Landfill. As of 2015, the remaining capacity of the landfill was slightly less than 16 million cubic yards and the landfill is expected to reach capacity around 2022 (Cal Recycle 2016). Construction of the facility is anticipated to result in the production of some solid waste. Project operations are not expected to produce substantial amounts of solid waste. Overall, the amount of solid waste produced, as a result of this Project is negligible compared to the daily waste produced in the City of Perris and in comparison to the capacity available at the two primary landfills. The proposed Project would not require any regularly employed staff. The only operations at the facility would be weekly inspections, monthly landscaping, and periodic maintenance visits, and would generate negligible amounts of solid waste during operation (primarily related to landscaping and minor refuse from maintenance). Therefore, because there would be adequate landfill capacity in the region to accommodate Project-generated waste, and the proposed Project is not expected to generate a substantial quantity of solid waste, the impact would be less than significant.

e) **No Impact.** The proposed Project would be required to comply with all applicable federal, state, County, and City statutes and regulations related to solid waste as a standard Project condition of approval. Therefore, no impact would occur.

XX. Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

a) **No Impact.** The Project Site is not located within or near any State Responsibility Areas or very high fire hazard severity zones.[22] The nearest such area is approximately 1.15 miles east of the Project site. No circulation changes are proposed as part of the Project. Implementation of the proposed Project would not impair an adopted emergency response plan or emergency evacuation plan.

b) **No Impact.** The Project Site is not located within or near any State Responsibility Areas or very high fire hazard severity zones. The nearest such area is approximately 1.15 miles east of the Project site. The Project site is relatively flat with no noticeable slopes in the Project vicinity. Impacts related to exacerbation of wildfire would not occur.

c) **No Impact.** The Project Site is not located within or near any State Responsibility Areas or very high fire hazard severity zones. The nearest such area is approximately 1.15 miles east of the Project site. The Project does not require the installation of roads, fuel breaks, emergency water sources, power lines, or other utilities that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. No impact would occur.

d) **No Impact.** The Project site is located within a completely urbanized area. The Project Site is not located within or near any State Responsibility Areas or very high fire hazard severity zones. The nearest such area is approximately 1.15 miles east of the Project site. The Project will not expose people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. No impact would occur.

XXI. Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X		
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

a) **Less than Significant with Mitigation Incorporated**. The proposed Project would not substantially impact habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. Adverse impacts to biological resources would not occur. Mitigation measures BIO-1 and BIO-2 would be implemented to ensure impacts to fish and wildlife species, plant and animal communities, and rare or endangered plants animals would not occur. Adverse impacts to historic resources would not occur. Mitigation Measures CUL-1 through CUL-5 and Mitigation Measures GEO-2 through GEO-5 would be implemented in the event any important archaeological resources, paleontological resources, tribal cultural resources, or human remains are discovered during ground disturbing activities. This site is not known to have any association with an important example of California's history or prehistory. The environmental analysis provided in Section III concludes that impacts related to emissions of criteria pollutants and other air quality impacts would be less than significant. Sections pertaining to impacts related to climate change and hydrology and water quality would be less than significant. Based on the preceding analysis of potential impacts, no evidence is presented that this Project would degrade the quality of the environment. EMWD finds that impacts related to degradation of the environment would be less than significant with mitigation incorporated.

b) **Less than Significant with Mitigation Incorporated.** Cumulative impacts can result from the interactions of environmental changes resulting from one proposed project with changes resulting from other past, present, and future projects that affect the same resources, utilities and infrastructure systems, public services, transportation network elements, air basin, watershed, or other physical conditions. Such impacts could be short-term and temporary, usually consisting of overlapping construction impacts, as well as long term, due to the permanent land use changes and operational characteristics involved with the Project.

Section 15130(b)(1) of the CEQA Guidelines identifies two methods to determine the scope of related projects for cumulative impact analysis:

List-of-Projects Method: a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency. The Well 204 Project is currently being considered as one project of several within a grant application to the State Water Board called the Perris North Program. The other projects include projects that would result in the construction and operation of groundwater monitoring wells, extraction wells, treatment and distribution facilities also within the Perris North Basin. The other projects include the following:

- Cactus Avenue Corridor Groundwater Wells Project;
- Perris North Groundwater Monitoring Project; and
- Well 65/66 Project.

The Cactus Corridor Project consists of the development and use of up to six groundwater extraction wells, one water treatment plant and pipelines. The Perris North Groundwater Monitoring Project is designed to monitor the presence of groundwater contaminants of concern from nonpoint sources throughout the Perris North Basin. The Groundwater Monitoring project consists of up to nine monitoring wells that would be constructed at various locations within the Perris North Groundwater Management Zone. The Well 65/66 Project consists of the development and use of two new groundwater wells and water treatment plant also within the Perris North Basin. Although related due to their inclusion in the grant application, each project is a stand-alone project independent of the other for project implementation.

Construction of these projects would occur at different times and sites far enough removed from each other that construction related cumulative effects such as fugitive dust and construction noise would be less than significant. Development would adhere to applicable rules and regulations related to dust suppression, traffic control, storm water control, handling/storage of hazardous materials, and regulations related to protections for plants/animals/waters of the State and US. Cumulative impacts in these areas are also considered less than significant. The only operational vehicle trips associated with the various projects listed above would be the infrequent monitoring/maintenance trips, which would result in an insignificant cumulative increase on area roadways separated in time and distance. Cumulative noise and air quality effects from these projects would also be less-than-significant due to their minimal contribution. Therefore, these projects are not expected to create impacts that are individually limited, but cumulatively considerable.

Summary-of-Projections Method: a summary of projections contained in an adopted general plan or related planning document or in a prior environmental document that has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

<u>Non-Cumulative Impacts</u>

Impacts related to aesthetics, air quality, population and housing, public services, recreation, transportation, and utilities have no potential for cumulative impacts because impacts are limited to on-site conditions and include no component that could result in similar impacts over time or space. Therefore, no cumulative impacts related to these topics would occur.

Impacts related to biological resources, cultural/tribal cultural resources, geology and soils, hazards, hydrology and water quality, and noise were found to be potentially significant and require mitigation to reduce to less than significant levels; therefore, the Project could contribute considerably to significant regional cumulative impacts in these topical areas. These topics are discussed in detail below.

Biological Resources. The context for assessing cumulative impacts to biological resources is the Project site and vicinity that includes other non-developed properties. Mitigation Measures BIO-1 and BIO-2 have been incorporated requiring preconstruction surveys for burrowing owls or any other nesting birds. These measures would eliminate potentially significant impacts associated with next or tree removal. Therefore, the Project would have no contribution to a cumulative loss of important biological resources in the region.

Cultural/Tribal Cultural Resources. The context for assessing cumulative impacts to local archeological and paleontological knowledge of our past is the resources in the Project site and vicinity that includes other non-developed properties. Loss of on-site or nearby archaeological and paleontological resources could reduce or eliminate important information relevant to the San Jacinto Basin and the State of California. Mitigation Measures CUL-1 through CUL-5 and Mitigation Measures GEO-2 through GEO-5 have been incorporated requiring evaluation of any discovered potential archaeological resources, paleontological resources or human remains, the uniqueness of the archaeological or paleontological sample or ancestry of the remains, and appropriate steps to preserve or curate the artifact or remains. This would eliminate any potential loss of important regional archaeological and paleontological information that may be buried under the project site; therefore, the Project would have no contribution to a cumulative loss of important regional archaeological or paleontological knowledge.

Geology and Soils. The context for assessing geology and soils impacts is the project site and the project vicinity. The project site and vicinity are in a liquefaction zone as defined by the PVCCSP. Mitigation Measure GEO-1 would require geotechnical analysis or a geotechnical report that would evaluate the potential for damage to the well and related infrastructure. Therefore, the Project would have no contribution to a cumulative impact related to liquefaction impacts to well infrastructure.

Hazards and Hazardous Materials. The context for assessing cumulative hazards impacts is the Project site and vicinity that includes other non-developed properties. Mitigation Measure HAZ-1 has been incorporated requiring consultation between EMWD and March Air Reserve Base prior to issuance of construction permits. These measures would eliminate potentially significant impacts associated with nearby flights associated with the base. Therefore, the Project would have no contribution to a cumulative hazards impact in the region.
Hydrology and Water Quality. The context for assessing geology and soils impacts is the Project site and the Project vicinity. Project construction activities could generate soil erosion off-site that could impact water quality. Mitigation Measure HYD-1 would require BMPS for erosion control and eliminate any potentially significant impacts to water quality. Therefore, the Project would have no contribution to a cumulative impact to water quality.

Noise. The context for assessing cumulative noise impacts to the region is the extent to which temporary or permanent noise generating sources exist in the area. Noise generating sources can create annoyance to residents and can cause vibration impacts. Mitigation Measure NOI-1 would require noise control BMPs to be implemented. Mitigation Measure NOI-2 would require construction equipment review by an acoustic specialist, and NOI-3 would require implementation of groundborne vibration BMP's to reduce impacts to sensitive receptors. These measures would eliminate any regional noise impacts resulting from construction or operation of the proposed Project site; therefore, the Project would have no contribution to cumulative noise impacts in the region.

Global Impacts

One topic of global concern is climate change. As discussed in the greenhouse gas section of this document, climate change is the result of numerous, cumulative sources of greenhouse gas emissions all over the world. The Project would not contribute considerably to global climate change.

Based on the above analysis concerning the local, regional, and global impacts of the Project in consideration of past, current, and future projects, the EMWD hereby finds that the contribution of the proposed Project to cumulative impacts would be less than significant with mitigation incorporated.

c) **Less than Significant with Mitigation Incorporated.** Based on the analysis of the Project's impacts in the responses to the environmental topics previously discussed, there is no indication that this Project would result in substantial adverse effects on human beings. While there would be a variety of temporary adverse effects during construction related to noise, these would be reduced to less than significant levels through mitigation. Long-term effects include a slight increase in vehicular traffic and traffic related noise, use of hazardous materials, emissions of criteria pollutants and greenhouse gas emissions. The analysis herein concludes that direct and indirect environmental effects would at worst require mitigation to reduce to less than significant levels. Generally, environmental effects would result in less than significant impacts. Based on the analysis in this Initial Study/Mitigated Negative Declaration, the EMWD finds that direct and indirect impacts to human beings would be less than significant with mitigation incorporated.

References

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[7] State CEQA Guidelines, Appendix F. These new guidelines were part of amendments issued pursuant to SB97. A copy of this document is available for public review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2007.0903E.

[8] California Natural Resources Agency, 2009. Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97, p. 71. Website: http://ceres.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf. Accessed November 26, 2019.

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[21] Public Resources Code. State Water Code Sections 10910-10915. http://www.swrcb.ca.gov/laws_regulations/. Accessed January 2020.

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Appendix A:

Air Quality and Greenhouse Gas Modeling Results

Phase 1 total – 6 weeks (4 weeks 24hrs, 2 weeks 12 hrs)

Phase I – Grading (2 weeks – 24 hour days, 7 days)

Equipment	Horsepower	Load Factor	Hours per Day
Off highway Trucks	479	0.57	8
Plate compactors	8	0.43	4
Sweepers/scrubbers	91	0.68	2
Tractors/loaders/backhoes	108	0.55	12
Water trucks	189	0.5	4

Phase I - Well Drilling (4 weeks: 2 weeks – 24 hour days, 7 days; 2 weeks – 12 hour days, 7 days)

Equipment	Horsepower	Load Factor	Hours per Day
Air compressors	106	0.48	8/4
Bore/drill rigs	291	0.75	16/8
Cranes	399	0.43	12/6
Off highway Trucks	479	0.57	8/4
Plate compactors	8	0.43	4/2
Pumps	53	0.74	16/8
Sweepers/scrubbers	91	0.68	2/1
Tractors/loaders/backhoes	108	0.55	12/6
Water trucks	189	0.5	4/2

Phase I - Temporary Groundwater Production Well Components (1 week, 12 hour day, 7 days)

Equipment	Horsepower	Load Factor	Hours per Day
Cranes	399	0.43	6
Off highway Trucks	479	0.57	4
Plate compactors	8	0.43	2
Sweepers/scrubbers	91	0.68	1
Tractors/loaders/backhoes	108	0.55	6

EMWD Well 204

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	3.60	1000sqft	0.08	3,600.00	0
Other Non-Asphalt Surfaces	2.42	Acre	2.42	105,415.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project specific construction scheduling

Off-road Equipment - Project Specific

Off-road Equipment - Project Specific

Off-road Equipment - Project Specific

Off-road Equipment - Project Specific

Off-road Equipment - Project Specific

Grading -

Trips and VMT -

Vehicle Trips - One maintenance trip per week.

Energy Use - Security Lighting

Water And Wastewater - No indoor water facilities

Solid Waste - No Solid Waste Generation

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	6.00	7.00
tblConstructionPhase	NumDays	6.00	14.00
tblConstructionPhase	NumDays	220.00	14.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	3/11/2017	3/20/2017
tblConstructionPhase	PhaseStartDate	3/5/2017	3/14/2017
tblEnergyUse	NT24E	5.02	0.00
tblEnergyUse	NT24NG	17.13	0.00
tblEnergyUse	T24E	2.69	0.00
tblEnergyUse	T24NG	16.16	0.00
tblOffRoadEquipment	LoadFactor	0.50	0.50

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					
2017	0.0789	0.7802	0.4989	1.0800e-003	9.6500e-003	0.0395	0.0492	2.5800e-003	0.0372	0.0398	0.0000	96.1774	96.1774	0.0228	0.0000	96.6569
Total	**0.0789**	**0.7802**	**0.4989**	**1.0800e-003**	**9.6500e-003**	**0.0395**	**0.0492**	**2.5800e-003**	**0.0372**	**0.0398**	**0.0000**	**96.1774**	**96.1774**	**0.0228**	**0.0000**	**96.6569**

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					
2017	0.0789	0.7802	0.4989	1.0800e-003	9.6500e-003	0.0395	0.0492	2.5800e-003	0.0372	0.0398	0.0000	96.1773	96.1773	0.0228	0.0000	96.6568
Total	**0.0789**	**0.7802**	**0.4989**	**1.0800e-003**	**9.6500e-003**	**0.0395**	**0.0492**	**2.5800e-003**	**0.0372**	**0.0398**	**0.0000**	**96.1773**	**96.1773**	**0.0228**	**0.0000**	**96.6568**

	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	tons/yr										MT/yr					
Area	0.5203	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.4615	3.4615	1.6000e-004	3.0000e-005	3.4750
Mobile	2.6000e-004	9.3000e-004	3.4300e-003	1.0000e-005	4.8000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	0.5854	0.5854	3.0000e-005	0.0000	0.5860
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5205**	**9.3000e-004**	**3.5100e-003**	**1.0000e-005**	**4.8000e-004**	**1.0000e-005**	**5.0000e-004**	**1.3000e-004**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**4.0470**	**4.0470**	**1.9000e-004**	**3.0000e-005**	**4.0611**

Mitigated Operational

Phase II Well Head Facilities	Paving Equipment	0	8.00	130	0.36
Phase II Blow Off Pond	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Phase I Well Drilling & Temp Well Comp	Welders	0	8.00	46	0.45
Phase II Well Head Facilities	Welders	0	8.00	46	0.45
Phase I Grading	Off-Highway Trucks	1	8.00	400	0.38
Phase I Grading	Plate Compactors	1	4.00	8	0.43
Phase I Grading	Sweepers/Scrubbers	1	2.00	64	0.46
Phase I Grading	Other Construction Equipment	1	4.00	171	0.42
Phase I Well Drilling & Temp Well Comp	Air Compressors	1	8.00	78	0.48
Phase I Well Drilling & Temp Well Comp	Bore/Drill Rigs	1	8.00	205	0.50
Phase I Well Drilling & Temp Well Comp	Off-Highway Trucks	1	4.00	400	0.38
Phase I Well Drilling & Temp Well Comp	Plate Compactors	1	2.00	8	0.43
Phase I Well Drilling & Temp Well Comp	Pumps	1	8.00	84	0.74
Phase I Well Drilling & Temp Well Comp	Sweepers/Scrubbers	1	1.00	64	0.46
Phase I Well Drilling & Temp Well Comp	Other Construction Equipment	1	2.00	171	0.42
Phase II Well Head Facilities	Air Compressors	1	4.00	78	0.48
Phase II Well Head Facilities	Bore/Drill Rigs	1	8.00	205	0.50
Phase II Well Head Facilities	Off-Highway Trucks	1	4.00	400	0.38
Phase II Well Head Facilities	Plate Compactors	1	2.00	8	0.43
Phase II Well Head Facilities	Pumps	1	8.00	84	0.74
Phase II Well Head Facilities	Sweepers/Scrubbers	1	1.00	64	0.46
Phase II Well Head Facilities	Other Construction Equipment	1	2.00	171	0.42
Phase II Blow Off Pond	Sweepers/Scrubbers	1	1.00	64	0.46
Phase II Blow Off Pond	Off-Highway Trucks	1	4.00	400	0.38
Phase II Pipelines	Cranes	1	6.00	226	0.29
Phase II Pipelines	Off-Highway Trucks	1	4.00	400	0.38
Phase II Pipelines	Plate Compactors	1	2.00	8	0.43
Phase II Pipelines	Sweepers/Scrubbers	1	1.00	64	0.46
Phase II Pipelines	Tractors/Loaders/Backhoes	1	6.00	97	0.37

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
Phase II Pipelines	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase I Grading	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase I Well Drilling & Temp Well Comp	9	23.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase II Well Head Facilities	9	46.00	18.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Phase II Blow Off Pond	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Phase I Grading - 2017

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0124	0.1315	0.0771	1.5000e-004		6.7500e-003	6.7500e-003		6.2200e-003	6.2200e-003	0.0000	14.0847	14.0847	4.2900e-003	0.0000	14.1748

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	1.1600e-003	1.7100e-003	0.0178	4.0000e-005	3.5300e-003	3.0000e-005	3.5600e-003	9.4000e-004	3.0000e-005	9.6000e-004	0.0000	3.1828	3.1828	1.6000e-004	0.0000	3.1862
Total	**1.1600e-003**	**1.7100e-003**	**0.0178**	**4.0000e-005**	**3.5300e-003**	**3.0000e-005**	**3.5600e-003**	**9.4000e-004**	**3.0000e-005**	**9.6000e-004**	**0.0000**	**3.1828**	**3.1828**	**1.6000e-004**	**0.0000**	**3.1862**

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	0.0362	0.3803	0.2225	4.6000e-004		0.0198	0.0198		0.0189	0.0189	0.0000	43.6075	43.6075	0.0106	0.0000	43.8309
Total	**0.0362**	**0.3803**	**0.2225**	**4.6000e-004**		**0.0198**	**0.0198**		**0.0189**	**0.0189**	**0.0000**	**43.6075**	**43.6075**	**0.0106**	**0.0000**	**43.8309**

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	1.1600e-003	1.7100e-003	0.0178	4.0000e-005	3.5300e-003	3.0000e-005	3.5600e-003	9.4000e-004	3.0000e-005	9.6000e-004	0.0000	3.1828	3.1828	1.6000e-004	0.0000	3.1862
Total	**1.1600e-003**	**1.7100e-003**	**0.0178**	**4.0000e-005**	**3.5300e-003**	**3.0000e-005**	**3.5600e-003**	**9.4000e-004**	**3.0000e-005**	**9.6000e-004**	**0.0000**	**3.1828**	**3.1828**	**1.6000e-004**	**0.0000**	**3.1862**

3.4 Phase II Well Head Facilities - 2017

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	0.0176	0.1802	0.1026	2.3000e-004		9.1100e-003	9.1100e-003		8.6200e-003	8.6200e-003	0.0000	20.6491	20.6491	5.2100e-003	0.0000	20.7584
Total	**0.0176**	**0.1802**	**0.1026**	**2.3000e-004**		**9.1100e-003**	**9.1100e-003**		**8.6200e-003**	**8.6200e-003**	**0.0000**	**20.6491**	**20.6491**	**5.2100e-003**	**0.0000**	**20.7584**

Total	**2.5300e-003**	**0.0266**	**0.0154**	**3.0000e-005**	**0.0000**	**1.3600e-003**	**1.3600e-003**	**0.0000**	**1.2500e-003**	**1.2500e-003**	**0.0000**	**3.0048**	**3.0048**	**9.2000e-004**	**0.0000**	**3.0242**

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	1.0000e-004	1.5000e-004	1.5500e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2768	0.2768	1.0000e-005	0.0000	0.2771
Total	**1.0000e-004**	**1.5000e-004**	**1.5500e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2768**	**0.2768**	**1.0000e-005**	**0.0000**	**0.2771**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5300e-003	0.0266	0.0154	3.0000e-005		1.3600e-003	1.3600e-003		1.2500e-003	1.2500e-003	0.0000	3.0048	3.0048	9.2000e-004	0.0000	3.0242
Total	**2.5300e-003**	**0.0266**	**0.0154**	**3.0000e-005**	**0.0000**	**1.3600e-003**	**1.3600e-003**	**0.0000**	**1.2500e-003**	**1.2500e-003**	**0.0000**	**3.0048**	**3.0048**	**9.2000e-004**	**0.0000**	**3.0242**

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	1.0000e-004	1.5000e-004	1.5500e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2768	0.2768	1.0000e-005	0.0000	0.2771
Total	**1.0000e-004**	**1.5000e-004**	**1.5500e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2768**	**0.2768**	**1.0000e-005**	**0.0000**	**0.2771**

3.6 Phase II Pipelines - 2017

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	4.2500e-003	0.0469	0.0228	5.0000e-005		2.2600e-003	2.2600e-003		2.0800e-003	2.0800e-003	0.0000	4.3947	4.3947	1.3400e-003	0.0000	4.4229
Total	**4.2500e-003**	**0.0469**	**0.0228**	**5.0000e-005**		**2.2600e-003**	**2.2600e-003**		**2.0800e-003**	**2.0800e-003**	**0.0000**	**4.3947**	**4.3947**	**1.3400e-003**	**0.0000**	**4.4229**

Mitigated	2.6000e-004	9.3000e-004	3.4300e-003	1.0000e-005	4.8000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	0.5854	0.5854	3.0000e-005	0.0000	0.5860
Unmitigated	2.6000e-004	9.3000e-004	3.4300e-003	1.0000e-005	4.8000e-004	1.0000e-005	5.0000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	0.5854	0.5854	3.0000e-005	0.0000	0.5860

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.29	0.29	0.29	1,275	1,275
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.29	0.29	0.29	1,275	1,275

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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 Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.516610	0.060517	0.179979	0.140587	0.041566	0.006616	0.015092	0.027587	0.001923	0.002530	0.004314	0.000602	0.002075

5.0 Energy Detail

4.4 Fleet Mix

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	3.4615	3.4615	1.6000e-004	3.0000e-005	3.4750
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3.4615	3.4615	1.6000e-004	3.0000e-005	3.4750
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Other Non-Asphalt Surfaces	0	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
General Light Industry	0	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		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

	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	0.1263					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3939					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Total	**0.5203**	**0.0000**	**8.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.0000**	**1.6000e-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	0.1263					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3939					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Total	**0.5203**	**0.0000**	**8.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.0000**	**1.6000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

10.0 Vegetation

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	7.00	12.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblSolidWaste	SolidWasteGenerationRate	4.46	0.00
tblVehicleTrips	ST_TR	1.32	0.08
tblVehicleTrips	SU_TR	0.68	0.08
tblVehicleTrips	WD_TR	6.97	0.08
tblWater	IndoorWaterUseRate	832,500.00	0.00

Area	2.8507	1.0000e-005	6.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3200e-003	1.3200e-003	0.0000		1.4000e-003
Energy	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
Mobile	1.4500e-003	4.7600e-003	0.0193	4.0000e-005	2.7000e-003	8.0000e-005	2.7800e-003	7.2000e-004	7.0000e-005	7.9000e-004		3.6886	3.6886	1.6000e-004		3.6920
Total	**2.8522**	**4.7700e-003**	**0.0199**	**4.0000e-005**	**2.7000e-003**	**8.0000e-005**	**2.7800e-003**	**7.2000e-004**	**7.0000e-005**	**7.9000e-004**		**3.6899**	**3.6899**	**1.6000e-004**	**0.0000**	**3.6934**

	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	Phase I Grading	Grading	1/1/2017	1/14/2017	7	14	
2	Phase I Well Drilling & Temp Well Comp	Trenching	1/15/2017	2/11/2017	7	28	
3	Phase II Well Head Facilities	Building Construction	2/12/2017	2/25/2017	7	14	
4	Phase II Blow Off Pond	Grading	2/26/2017	3/4/2017	7	7	
5	Phase II Pipelines	Trenching	3/14/2017	3/20/2017	7	7	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase II Blow Off Pond	Air Compressors	0	6.00	78	0.48
Phase II Well Head Facilities	Cement and Mortar Mixers	0	8.00	9	0.56
Phase II Well Head Facilities	Cranes	1	6.00	226	0.29
Phase I Well Drilling & Temp Well Comp	Generator Sets	0	8.00	84	0.74
Phase I Well Drilling & Temp Well Comp	Cranes	1	6.00	226	0.29
Phase I Well Drilling & Temp Well Comp	Forklifts	0	7.00	89	0.20
Phase II Well Head Facilities	Forklifts	0	7.00	89	0.20
Phase II Well Head Facilities	Pavers	0	8.00	125	0.42
Phase II Well Head Facilities	Rollers	0	8.00	80	0.38
Phase II Well Head Facilities	Generator Sets	0	8.00	84	0.74
Phase I Grading	Rubber Tired Dozers	0	8.00	255	0.40
Phase I Well Drilling & Temp Well Comp	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Phase II Blow Off Pond	Graders	0	8.00	174	0.41
Phase I Grading	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Phase II Well Head Facilities	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Phase II Blow Off Pond	Rubber Tired Dozers	0	8.00	255	0.40
Phase I Grading	Graders	0	8.00	174	0.41
Phase II Well Head Facilities	Paving Equipment	0	8.00	130	0.36
Phase II Blow Off Pond	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Phase I Well Drilling & Temp Well Comp	Welders	0	8.00	46	0.45
Phase II Well Head Facilities	Welders	0	8.00	46	0.45
Phase I Grading	Off-Highway Trucks	1	8.00	400	0.38

	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	0.0487	0.0611	0.7632	1.8400e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396		148.7275	148.7275	7.3200e-003		148.8811
Total	**0.0487**	**0.0611**	**0.7632**	**1.8400e-003**	**0.1453**	**1.1700e-003**	**0.1465**	**0.0385**	**1.0800e-003**	**0.0396**		**148.7275**	**148.7275**	**7.3200e-003**		**148.8811**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000				0.0000
Off-Road	1.7777	18.7870	11.0158	0.0218		0.9647	0.9647		0.8879	0.8879	0.0000	2,217.9578	2,217.9578	0.6761		2,232.1556
Total	**1.7777**	**18.7870**	**11.0158**	**0.0218**	**0.0000**	**0.9647**	**0.9647**	**0.0000**	**0.8879**	**0.8879**	**0.0000**	**2,217.9578**	**2,217.9578**	**0.6761**		**2,232.1556**

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	0.0487	0.0611	0.7632	1.8400e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396		148.7275	148.7275	7.3200e-003		148.8811
Total	**0.0487**	**0.0611**	**0.7632**	**1.8400e-003**	**0.1453**	**1.1700e-003**	**0.1465**	**0.0385**	**1.0800e-003**	**0.0396**		**148.7275**	**148.7275**	**7.3200e-003**		**148.8811**

3.3 Phase I Well Drilling & Temp Well Comp. - 2017

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	2.7302	27.1671	15.8899	0.0344		1.4164	1.4164		1.3469	1.3469		3,433.5042	3,433.5042	0.8377		3,451.0967
Total	**2.7302**	**27.1671**	**15.8899**	**0.0344**		**1.4164**	**1.4164**		**1.3469**	**1.3469**		**3,433.5042**	**3,433.5042**	**0.8377**		**3,451.0967**

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	0.1378	1.4234	1.6886	3.9100e-003	0.1125	0.0227	0.1352	0.0321	0.0208	0.0529		386.4009	386.4009	2.7300e-003		386.4581
Worker	0.1722	0.2163	2.7004	6.5100e-003	0.5142	4.1400e-003	0.5183	0.1364	3.8100e-003	0.1402		526.2665	526.2665	0.0259		526.8101
Total	**0.3100**	**1.6397**	**4.3889**	**0.0104**	**0.6267**	**0.0268**	**0.6535**	**0.1684**	**0.0246**	**0.1931**		**912.6674**	**912.6674**	**0.0286**		**913.2683**

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	2.5102	25.7350	14.6521	0.0325		1.3011	1.3011		1.2316	1.2316	0.0000	3,251.6686	3,251.6686	0.8197		3,268.8824
Total	**2.5102**	**25.7350**	**14.6521**	**0.0325**		**1.3011**	**1.3011**		**1.2316**	**1.2316**	**0.0000**	**3,251.6686**	**3,251.6686**	**0.8197**		**3,268.8824**

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	0.1378	1.4234	1.6886	3.9100e-003	0.1125	0.0227	0.1352	0.0321	0.0208	0.0529		386.4009	386.4009	2.7300e-003		386.4581
Worker	0.1722	0.2163	2.7004	6.5100e-003	0.5142	4.1400e-003	0.5183	0.1364	3.8100e-003	0.1402		526.2665	526.2665	0.0259		526.8101
Total	**0.3100**	**1.6397**	**4.3889**	**0.0104**	**0.6267**	**0.0268**	**0.6535**	**0.1684**	**0.0246**	**0.1931**		**912.6674**	**912.6674**	**0.0286**		**913.2683**

3.5 Phase II Blow Off Pond - 2017

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7221	7.6117	4.4076	9.2500e-003		0.3886	0.3886		0.3575	0.3575		946.3615	946.3615	0.2900		952.4507
Total	**0.7221**	**7.6117**	**4.4076**	**9.2500e-003**	**0.0000**	**0.3886**	**0.3886**	**0.0000**	**0.3575**	**0.3575**		**946.3615**	**946.3615**	**0.2900**		**952.4507**

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	0.0487	0.0611	0.7632	1.8400e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396		148.7275	148.7275	7.3200e-003		148.8811
Total	**0.0487**	**0.0611**	**0.7632**	**1.8400e-003**	**0.1453**	**1.1700e-003**	**0.1465**	**0.0385**	**1.0800e-003**	**0.0396**		**148.7275**	**148.7275**	**7.3200e-003**		**148.8811**

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	1.2140	13.3972	6.5066	0.0136		0.6459	0.6459		0.5944	0.5944	0.0000	1,384.1057	1,384.1057	0.4223		1,392.9749
Total	**1.2140**	**13.3972**	**6.5066**	**0.0136**		**0.6459**	**0.6459**		**0.5944**	**0.5944**	**0.0000**	**1,384.1057**	**1,384.1057**	**0.4223**		**1,392.9749**

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	0.0487	0.0611	0.7632	1.8400e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396		148.7275	148.7275	7.3200e-003		148.8811
Total	**0.0487**	**0.0611**	**0.7632**	**1.8400e-003**	**0.1453**	**1.1700e-003**	**0.1465**	**0.0385**	**1.0800e-003**	**0.0396**		**148.7275**	**148.7275**	**7.3200e-003**		**148.8811**

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	1.4500e-003	4.7600e-003	0.0193	4.0000e-005	2.7000e-003	8.0000e-005	2.7800e-003	7.2000e-004	7.0000e-005	7.9000e-004		3.6886	3.6886	1.6000e-004		3.6920
Unmitigated	1.4500e-003	4.7600e-003	0.0193	4.0000e-005	2.7000e-003	8.0000e-005	2.7800e-003	7.2000e-004	7.0000e-005	7.9000e-004		3.6886	3.6886	1.6000e-004		3.6920

General Light Industry	0	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
Other Non-Asphalt Surfaces	0	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		**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**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	2.8507	1.0000e-005	6.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3200e-003	1.3200e-003	0.0000		1.4000e-003
Unmitigated	2.8507	1.0000e-005	6.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3200e-003	1.3200e-003	0.0000		1.4000e-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	0.6922					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3200e-003	1.3200e-003	0.0000		1.4000e-003
Total	**2.8507**	**1.0000e-005**	**6.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.3200e-003**	**1.3200e-003**	**0.0000**		**1.4000e-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	0.6922					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3200e-003	1.3200e-003	0.0000		1.4000e-003
Total	**2.8507**	**1.0000e-005**	**6.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.3200e-003**	**1.3200e-003**	**0.0000**		**1.4000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Appendix B:

Biology – Special Status Species Desktop Search Results

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE **RareFind**

Query Summary:
Quad IS (Perris (3311772) OR El Casco (3311781) OR Riverside East (3311783) OR Sunnymead (3311782) OR Steele Peak (3311773) OR Lakeview (3311771) OR Lake Elsinore (3311763) OR Winchester (3311761) OR Romoland (3311762))
AND Elevation IS greater than OR equal to 1450
AND Elevation IS less than OR equal to 1460
AND Presence IS (Presumed Extant OR Possibly Extirpated)

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	Riparian	CTT61330CA	111	2	None	None	G3	S3.2	null	null	Riparian forest
Southern Riparian Scrub	Southern Riparian Scrub	Riparian	CTT63300CA	56	1	None	None	G3	S3.2	null	null	Riparian scrub
Arizona elegans occidentalis	California glossy snake	Reptiles	ARADB01017	260	3	None	None	G5T2	S2	null	CDFW_SSC-Species of Special Concern	null
Aspidoscelis hyperythra	orange-throated whiptail	Reptiles	ARACJ02060	368	1	None	None	G5	S2S3	null	CDFW_WL-Watch List, IUCN_LC-Least Concern, USFS_S-Sensitive	Chaparral, Cismontane woodland, Coastal scrub
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1375	1	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Phrynosoma blainvillii	coast horned lizard	Reptiles	ARACF12100	781	2	None	None	G3G4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinon & juniper woodlands, Riparian scrub, Riparian woodland, Valley & foothill grassland
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	Mammals	AMAFD05031	101	1	None	None	G5T3T4	S3S4	null	CDFW_SSC-Species of Special Concern	Chaparral, Coastal scrub
Dipodomys merriami parvus	San Bernardino kangaroo rat	Mammals	AMAFD03143	81	1	Endangered	Candidate Endangered	G5T1	S1	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Dipodomys stephensi	Stephens' kangaroo rat	Mammals	AMAFD03100	220	4	Endangered	Threatened	G2	S2	null	IUCN_EN-Endangered	Coastal scrub, Valley & foothill grassland
Neotoma lepida intermedia	San Diego desert woodrat	Mammals	AMAFF08041	132	1	None	None	G5T3T4	S3S4	null	CDFW_SSC-Species of Special Concern	Coastal scrub
Onychomys torridus ramona	southern grasshopper mouse	Mammals	AMAFF06022	28	1	None	None	G5T3	S3	null	CDFW_SSC-Species of Special Concern	Chenopod scrub

CNPS RPI Query Results (9-Quad), October 2019
EMWD Well 204 Project Site, Perris, CA

Scientific Name	Common Name	CRPR	CESA	FESA	Habitat
Abronia villosa var. aurita	chaparral sand-verbena	1B.1	None	None	Chaparral, Coastal scrub, Desert dunes
Allium munzii	Munz's onion	1B.1	CT	FE	Chaparral, Cismontane woodland, Coastal scrub, Pinyon and juniper woodland, Valley and foothill grassland
Artemisia palmeri	San Diego sagewort	4.2	None	None	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland
Astragalus pachypus var. jaegeri	Jaeger's bush milk-vetch	1B.1	None	None	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland
Atriplex coronata var. notatior	San Jacinto Valley crownscale	1B.1	None	FE	Playas, Valley and foothill grassland (mesic), Vernal pools
Atriplex parishii	Parish's brittlescale	1B.1	None	None	Chenopod scrub, Playas, Vernal pools
Berberis nevinii	Nevin's barberry	1B.1	CE	FE	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub
Brodiaea filifolia	thread-leaved brodiaea	1B.1	CE	FT	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools
Calochortus plummerae	Plummer's mariposa lily	4.2	None	None	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland
Calochortus weedii var. intermedius	intermediate mariposa lily	1B.2	None	None	Chaparral, Coastal scrub, Valley and foothill grassland
Carex buxbaumii	Buxbaum's sedge	4.2	None	None	Bogs and fens, Meadows and seeps (mesic), Marshes and swamps
Caulanthus simulans	Payson's jewelflower	4.2	None	None	Chaparral, Coastal scrub
Centromadia pungens ssp. laevis	smooth tarplant	1B.1	None	None	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland
Chorizanthe leptotheca	Peninsular spineflower	4.2	None	None	Chaparral, Coastal scrub, Lower montane coniferous forest
Chorizanthe parryi var. parryi	Parry's spineflower	1B.1	None	None	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland
Chorizanthe polygonoides var. longispina	long-spined spineflower	1B.2	None	None	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools
Convolvulus simulans	small-flowered morning-glory	4.2	None	None	Chaparral (openings), Coastal scrub, Valley and foothill grassland
Deinandra paniculata	paniculate tarplant	4.2	None	None	Coastal scrub, Valley and foothill grassland, Vernal pools
Dodecahema leptoceras	slender-horned spineflower	1B.1	CE	FE	Chaparral, Cismontane woodland, Coastal scrub (alluvial fan)
Dudleya multicaulis	many-stemmed dudleya	1B.2	None	None	Chaparral, Coastal scrub, Valley and foothill grassland
Harpagonella palmeri	Palmer's grapplinghook	4.2	None	None	Chaparral, Coastal scrub, Valley and foothill grassland
Hordeum intercedens	vernal barley	3.2	None	None	Coastal dunes, Coastal scrub, Valley and foothill grassland (saline flats and depressions), Vernal pools
Juglans californica	Southern California black walnut	4.2	None	None	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

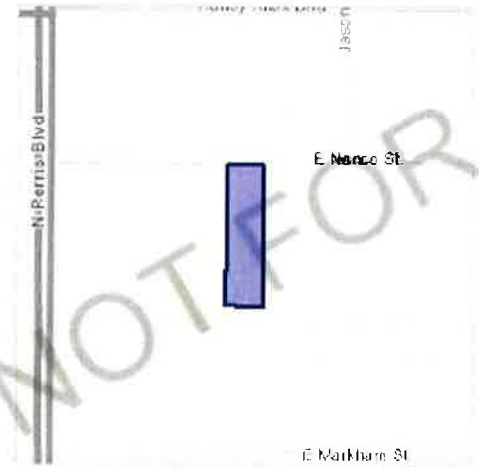
This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Riverside County, California



Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/

San Bernardino Merriam's Kangaroo Rat Dipodomys merriami parvus — Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/2060

Stephens' Kangaroo Rat Dipodomys stephensi (incl. D. cascus) — Endangered

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/3495

Birds

NAME	STATUS

Coastal California Gnatcatcher Polioptila californica californica — Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/8178

Least Bell's Vireo Vireo bellii pusillus — Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/5945

Southwestern Willow Flycatcher Empidonax traillii extimus — Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/6749

Insects

NAME	STATUS

Quino Checkerspot Butterfly Euphydryas editha quino (=E. e. wrighti) — Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/5900

Crustaceans

NAME	STATUS

Riverside Fairy Shrimp Streptocephalus woottoni — Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/8148

NOT FOR CONSULTATION

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE

NOT FOR CONSULTATION

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▩)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▩)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

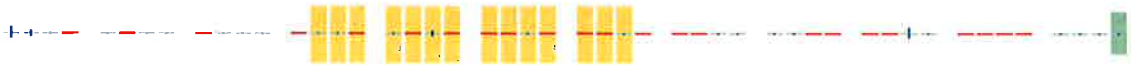
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

▩ probability of presence ▩ breeding season | survey effort – no data

NOT FOR CONSULTATION

Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

NOT FOR CONSULTATION

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Appendix C:

Cultural Resources Assessment Report

Phase I Cultural Resources Assessment of the Proposed Groundwater Production Well No. 204 Project City of Perris, County of Riverside, California

Prepared for:

Eastern Municipal Water District
Helen Stratton
P.O. Box 8300
Perris, CA 92572

Prepared by:

MIG.
1500 Iowa Avenue, Suite 110
Riverside, California 92507

Authors:
Christopher W. Purtell, M.A., RPA, Senior Archaeologist
Christopher Brown, Director of Environmental Services

Perris, CA United States Geological Survey 7.5" Quadrangle Map, Section 5 of Township 4 South, Range 5 West

Project Acreage: 2.3
Resources Indentified: None

June 17, 2016

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EXECUTIVE SUMMARY

The Eastern Municipal Water District (EMWD) is proposing the construction and operation of a new portable groundwater production facility identified as Well No. 204, located on East Nance Street in the City of Perris, Riverside County, California. The proposed project will operate on 2.3-arces of land that includes the construction of one new groundwater production well (No. 204), well head facilities and appurtenances. The project's appurtenances include: a new field office, water supply line, and water discharge pump, settling tanks, drill rig, dog house, mud tank, blow off pond, pipe trailer, and material and cutting storage and laydown yards. The EMWD anticipates producing on the order of 1,000 acre-feet of potable water from this well at an approximate production rate between 400 gallons per minute (gpm) and 1, 500 gpm.

The project site is located north of Markham Street, south of East Nance Street, east of Flair Court, and west of Johnson Avenue. The project site is situated within the Perris Valley Commerce Center (PVCC) Specific Plan Land Use Area. For the purpose of this report, all project components will collectively be referred to as the "Study Area", unless otherwise noted. The proposed project includes excavations across the majority of the Study Area.

MIG conducted a Phase I Cultural Resources Assessment of the Study Area to determine the potential impacts to cultural resources (including archaeological, historical, and paleontological resources) for the purpose of complying with the California Environmental Quality Act (CEQA) and the local cultural resource regulations. The scope of work for this assessment included a cultural resources records search through the California Historical Resources Information System-Eastern Information Center at the California University, Riverside (CHRIS-EIC), a Sacred Lands File (SLF) search through the California Native American Heritage Commission (NAHC) and follow-up Native American consultation, a paleontological resources records search through the Natural History Museum of Los Angeles County's Vertebrate Paleontology Section (NHMLAC) a pedestrian survey, eligibility evaluations for resources identified within the Study Area, impact analyses, and the recommendation of additional work and mitigation measures.

Archaeological Resources

The cultural resources records search results from the Eastern Information Center (CHRIS-EIC) indicated that there were no archaeological resources located within the Study Area. However, there are three (3) previously recorded archaeological resources (prehistoric and historic) and one (1) historic located within one-mile radius (1-prehistoric, 2-historic, and 1-historic structure) of Study Area. None of these resources will be impacted by the proposed project. There were no archaeological resources identified during the pedestrian survey.

A review of the City of Perris General Plan has identified the Study Area to be in a vicinity of low sensitivity for cultural resources consisting of one or less recorded sites per quarter square mile (City of Perris General Plan 2005). Therefore, the proposed project would result in no adverse change in the significance of an archaeological resource as defined in §15064.5.

The Study Area is comprised of a vacant land that was a formerly used as a construction laydown yard. The vacant land measures approximately: 637-feet north-south by 158-feet east-west and exhibits shallow plowing or disking of soils in a north-south direction. Despite the heavy disturbances of the Study Area that may have displaced archaeological resources on the surface, it is possible that intact archaeological resources exist at depth. As a result, recommended mitigation measures are provided in Chapter 9 to reduce potentially significant impacts to previously undiscovered archaeological resources that may be accidentally encountered during project implementation to a less than significant level.

INTRODUCTION 1

1.1 – Proposed Project and Location

The Eastern Municipal Water District (EMWD) is proposing the construction and operation of a new portable groundwater production facility identified as Well No. 204, located on East Nance Street in the City of Perris, Riverside County, California. The proposed project will operate on 2.3-arces of land and includes the construction of one new groundwater production well (No. 204), well head facilities and appurtenances. The project's appurtenances include: a new field office, water supply line, and water discharge pump, settling tanks, drill rig, dog house, mud tank, blow off pond, pipe trailer, and material and cutting storage and laydown yards. The EMWD anticipates producing on the order of 1,000 acre-feet of potable water from this well at an approximate production rate between 400 gallons per minute (gpm) and 1, 500 gpm.

The project site is located north of Markham Street, south of East Nance Street, east of Flair Court, and west of Johnson Avenue. The project site is situated within the Perris Valley Commerce Center (PVCC) Specific Plan Land Use Area. For the purpose of this report, all project components will collectively be referred to as the "Study Area", unless otherwise noted. The proposed project includes excavations across the majority of the Study Area.

The Study Area is located in the City of Perris, in Riverside County, California (Figure 1, Regional and Vicinity Map). The Study Area is depicted in Section 5 of Township 4 South, Range 5 West of the Perris CA United States Geological Survey (USGS) 7.5' topographic (Figure 2, USGS Topographic Map). The Study Area is surrounded by vacant land to the north adjacent to East Nance, to the south by Markham Street, to the east by Johnson Avenue, and to the west by Flair Court.

1.2 – Scope of Study and Personnel

MIG conducted a phase I cultural resources assessment of the Study Area from May 2016 through June 2016 to identify potential impacts to cultural resources (including archaeological, historical, and paleontological resources) and to develop mitigation measures to avoid, reduce, or mitigate potential impacts to resources for the purpose of complying with CEQA and local cultural resource guidelines. The scope of work for this assessment included a cultural resources records search through the CHRIS-EIC, a Scared Lands File (SLF) search through the NAHC and follow-up Native American consultation, a paleontological resources records search through the NHMLAC, a pedestrian survey, eligibility evaluations for the resources identified within the Study Area, impact analyses, and the recommendations of additional work and mitigation measures, if necessary.

The assessment was co-managed and this report compiled by Mr. Chris Purtell, M.A., RPA and Mr. Chris Brown. The pedestrian field survey was performed by Mr. Purtell. The record searches were conducted by Mr. Purtell. Qualifications of key personnel are provided in Appendix A.

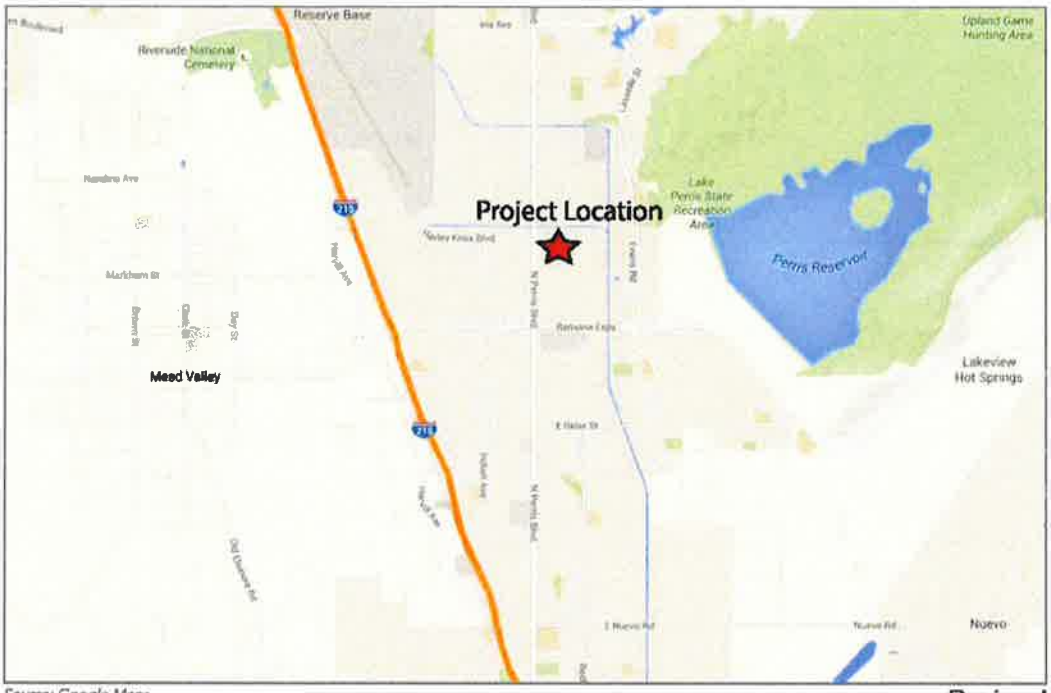
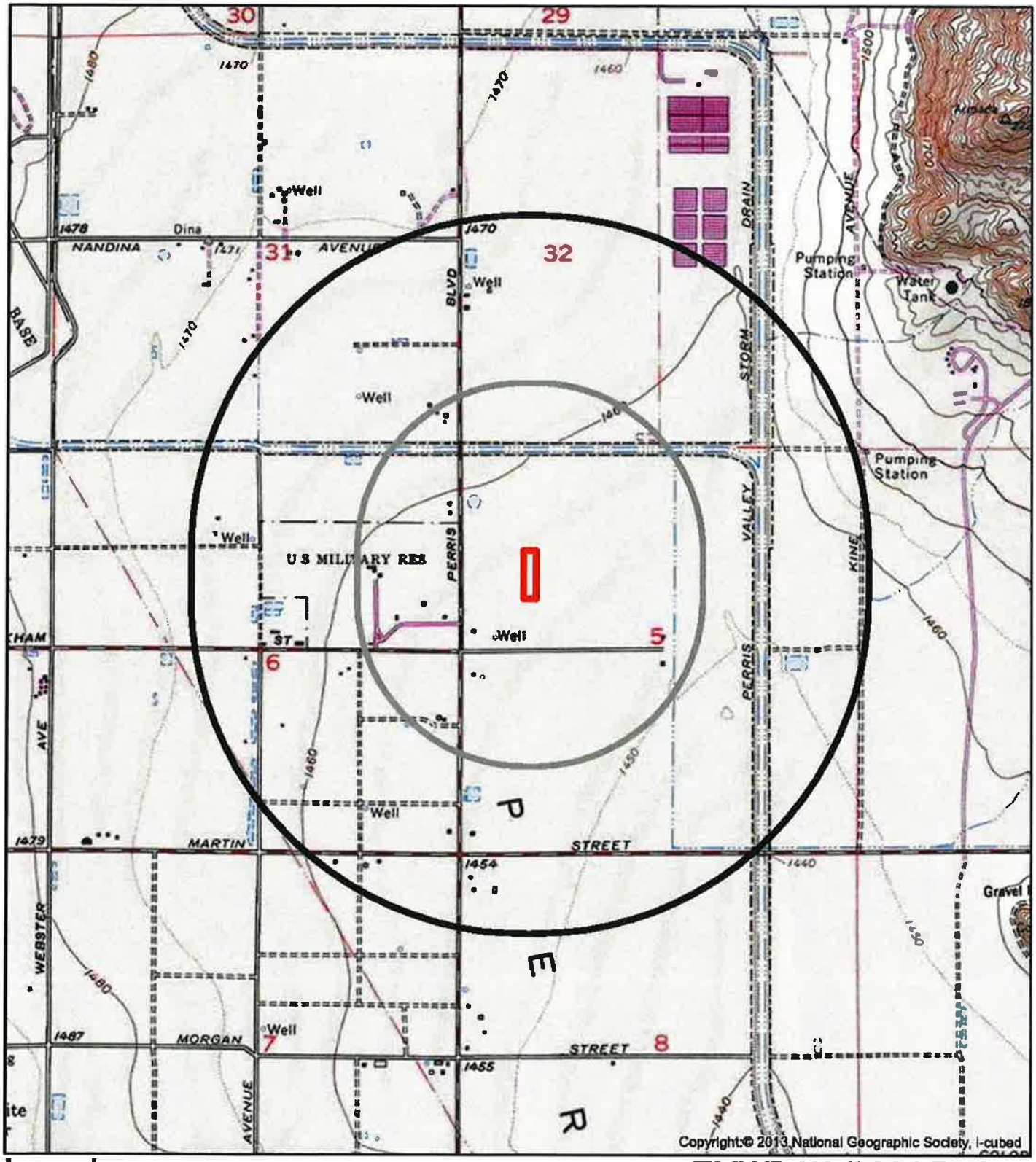




Figure 1 Regional and Vicinity Map

Eastern Municipal Water District Well 204
Perris, California



Legend

- 1 Mile Buffer
- 0.5 Mile Buffer
- Project Site

EMWD Well 204 Project

Section 5, Township 4 South, Range 5 West
Perris USGS 7.5 Minute Quadrangle
1:24,000

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REGULATORY SETTING 2

Regulatory Framework

Cultural resources are indirectly protected under the provisions of the Federal Antiquities Act of 1906 (16 U.S.C §§ 431 et seq.) and subsequent related legislation, regulations, policies, and guidance documents. The following is a summary of the applicable (federal, state, and local) regulatory framework related to the protection of cultural resources in California.

Numerous laws and regulations require federal, state, and local agencies to consider the effects of a proposed project on cultural resources. These laws and regulations establish a process for compliance, define the responsibilities of the various agencies proposing the action, and prescribe the relationship among other involved agencies (e.g., State Historic Preservation Office and the Advisory Council on Historic Preservation). The National Historic Preservation Act (NHPA) of 1966, as amended, CEQA, and Public Resources Code (PRC) 5024, are the primary federal and state laws governing and affecting preservation of cultural resources of national, state, regional, and local significance. Other relevant regulations and guidelines at the local level include the City's General Plan and Municipal Code. A description of the applicable laws, regulations, and guidelines are provided in the following paragraphs.

2.1 Federal Level

2.1.1 – NATIONAL HISTORIC PRESERVATION ACT OF 1966

Enacted in 1966, the National Historic Preservation Act (NHPA) (16 U.S.C §§ 470 et seq.) declared a national policy of historic preservation and instituted a multifaceted program, administered by the Secretary of the Interior, to encourage the achievement of preservation goals at the federal, state, and local levels. The NHPA authorized the expansion and maintenance of the National Register of Historic Places (NRHP), established the position of State Historic Preservation Officer (SHPO), provided for the designation of State Review Boards, set up a mechanism to certify local governments to carry out the purposes of the NHPA, assist Native American tribes in preserving their cultural heritage, and created the Advisory Council on Historic Preservation (ACHP).

In summary, the NHPA establishes the nation's policy for historic preservation and sets in place a program for the preservation of historic properties by requiring federal agencies to consider effects to significant cultural resources (i.e. historic properties) prior to undertakings.

2.1.2 – SECTION 106 OF THE FEDERAL GUIDELINES

Section 106 of the NHPA states that federal agencies with direct or indirect jurisdiction over federally funded, assisted, or licensed undertakings must take into account the effect of the undertaking on any historic property that is included in, or eligible for inclusion in, the NRHP and that the ACHP and SHPO must be afforded an opportunity to comment, through a process outlined in the ACHP regulations at 36 Code of Federal Regulations (CFR) Part 800, on such undertakings.

2.1.3 – NATIONAL REGISTER OF HISTORIC PLACES

The NRHP was established by the NHPA of 1966 as "an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment." The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, or association. A property is eligible for the NRHP if it is significant under one or more of the following criteria:

Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history.

Criterion B: It is associated with the lives of persons who are significant in our past.

a) Cause a substantial adverse change in the significance of an historical resource as defined in §15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Disturb any human remains, including those interred outside of formal cemeteries?

2.2.2 – California Register of Historical Resources

Created in 1992 and implemented in 1998, the California Register of Historical Resources (CRHR) is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate properties that are to be protected, to the extent prudent and feasible, from substantial adverse change."[1] Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks (CHLs) numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys, or designated by local landmarks programs may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria[2]:

Criterion 1: It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

Criterion 2: It is associated with the lives of persons important in our past.

Criterion 3: It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.

Criterion 4: It has yielded, or may be likely to yield, information important in history or prehistory.

Resources nominated to the CRHR must retain enough of their historic character or appearance to be recognizable as historic resources and to convey the reasons for their significance. It is possible that a resource whose integrity does not satisfy NRHP criteria may still be eligible for listing in the CRHR. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data. Resources that have achieved significance within the past 50 years also may be eligible for inclusion in the CRHR, provided that enough time has lapsed to obtain a scholarly perspective on the events or individuals associated with the resource.

2.3 – Other State Statutes and Regulations

2.3.1 – California Historical Landmarks

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have statewide historical significance by meeting at least one of the criteria listed below. The

[1] *California Public Resources Code § 5024.1(a).*
[2] *California Public Resources Code § 5024.1(b).*

2.3.5 – SENATE BILL 18

Senate Bill (SB) 18 (California Government Code, Section 65352.3) incorporates the protection of California traditional tribal cultural places into land use planning for cities, counties, and agencies by establishing responsibilities for local governments to contact, refer plans to, and consult with California Native American tribes as part of the adoption or amendment of any general or specific plan proposed on or after March 1, 2005. SB18 requires public notice to be sent to tribes listed on the Native American Heritage Commission's SB18 Tribal Consultation list within the geographical areas affected by the proposed changes. Tribes must respond to a local government notice within 90 days (unless a shorter time frame has been agreed upon by the tribe), indicating whether or not they want to consult with the local government. Consultations are for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code that may be affected by the proposed adoption or amendment to a general or specific plan.

2.3.6 – ASSEMBLY BILL 52

Assembly Bill (AB) 52 specifies that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource, as defined, is a project that may have a significant effect on the environment. AB 52 requires a lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation, prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project. AB 52 specifies examples of mitigation measures that may be considered to avoid or minimize impacts on tribal cultural resources. The bill makes the above provisions applicable to projects that have a notice of preparation or a notice of negative declaration filed or mitigated negative declaration on or after July 1, 2015. AB 52 amends Sections 5097.94 and adds Sections 21073, 21074, 2108.3.1., 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to the California Public Resources Code (PRC), relating to Native Americans.

2.3.7 – HEALTH AND SAFETY CODE, SECTIONS 7050 AND 7052

Health and Safety Code Section 7050.5 declares that, in the event of the discovery of human remains outside a dedicated cemetery, all ground disturbances must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

2.3.8 – PENAL CODE, SECTION 622.5

Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

2.5 – Local Level

2.5.1 – CITY OF PERRIS GENERAL PLAN-CONSERVATION ELEMENT

The City of Perris has put forth numerous policies with the Goals and Objectives section of the General Plan. These policies were created to identify and preserve the City's unique historical and archaeological resources for generations (City of Perris 2005).

Measure IV.A.2	For all projects subject to CEQA, applicants will be required to submit results of an archaeological records request through the Eastern Information Center at the University of Riverside.
Measure IV.A.3	Require Phase I Surveys for all projects located in areas that have not been previously surveyed for archaeological or historic resources, or which lie near areas where archaeological or historic sites have been recorded.

ENVIRONMENTAL SETTING 3

The Study Area is located on approximately 2.3 acres of land located in the Northeast Perris area of western Riverside County. The Project Site is bordered by vacant land on the north by East Nance Street, on the south by Markham Street, on the east by Johnson Avenue, and a residential residence and storage yard is located adjacent to Flair Court on the west. The project site is situated within the Perris Valley Commerce Center (PVCC) Specific Plan Land Use Area.

The elevation within the Study Area ranges from approximately 1,560 feet above mean sea level (MSL) in the north-northeast to 1,550 feet above MSL in the south-southwest. The Study Area is currently undeveloped and was formerly used as a construction laydown yard. The topography of the Study Area is relatively flat, with a slight slope along a northwest to southeast direction. Reviews of aerial photographs indicate that the Study Area has been highly disturbed by regular disking/plowing for weed abatement or agricultural usage.

Geologically, the Study Area is located in the north portion of the Peninsular Ranges geomorphic province. The Peninsular Ranges province is distinguished by northwest trending mountain ranges and valleys following faults branching from the San Andreas Fault. The Peninsular Ranges are bound to the east by the Colorado Desert and extend north to the San Bernardino – Riverside county line (Norris and Webb 1976), west into the submarine continental shelf, and south to the California state line.

The Perris Valley, in which the Study Area lies, is a northwest-southwest trending inland valley between the Lakeview Mountains and the Santa Ana-Elsinore Mountains. The Study Area is located in the western portion of this valley, more than a mile east of the Gavilan Hills, a high portion of the Perris Structural Block that marks its western edge. The Perris Valley is one of several tectonically controlled valleys within the valley and ridge system of the Perris Structural Block. These are structurally depressed troughs filled with sediments of upper Pliocene through recent ages, and the ridges are composed of plutonic igneous rocks, metasedimentary rocks, and late-stage intrusive dikes (City of Perris 2011).

CULTURAL SETTING 4

4.1 – Prehistoric Context

Prehistory is most easily discussed chronologically, in terms of environmental change and recognized cultural developments. Several chronologies have been proposed for inland Southern California, the most widely accepted of which is Wallace's four-part Horizon format (1955), which was later updated and revised by Claude Warren (1968). The advantages and weaknesses of Southern California chronological sequences are reviewed by Warren (in Moratto 1984), Chartkoff and Chartkoff (1984), and Heizer (1978). The following discussion is based on Warren's (1968) sequence, but the time frames have been adjusted to reflect more recent archaeological findings, interpretations, and advances in radiocarbon dating.

4.1.1 – PALEO-INDIAN PERIOD (CA. 13,000-11,000 YEARS BEFORE PRESENT [YBP])

Little is known of Paleo-Indian peoples in inland southern California, and the cultural history of this period follows that of North America in general. Recent discoveries in the Americas have challenged the theory that the first Americans migrated from Siberia, following a route from the Bering Strait into Canada and the Northwest Coast sometime after the Wisconsin Ice Sheet receded (ca. 14,000 YBP), and before the Bering Land Bridge was submerged (ca. 12,000 YBP). Based on new research from the Pacific Rim, it has been proposed that modern humans settled islands of the eastern Pacific between 40,000 and 15,000 years ago. Evidence of coastal migration has also come from sites on islands off Alta and Baja California. As a result, these sites are contemporary with Clovis and Folsom points found in North America's interior regions. All of these new findings have made the coastal migration theory gain credibility in recent times (Erlandson et al. 2007).

The timing, manner, and location of the Bering Strait crossing are a matter of debate among archaeologists, but the initial migration probably occurred as the Laurentide Ice Sheet melted along the Alaskan Coast and interior Yukon. The earliest radiocarbon dates from the Paleo-Indian Period in North America come from the Arlington Springs Woman site on Santa Rosa Island, which is located approximately 36 miles off the coast of California and is approximately 150 miles west-northwest of the Study Area. These human remains date to approximately 13,000 YBP (Johnson, et al. 2002). Other early Paleo-Indian sites include the Monte Verde Creek site in Chile (Meltzer, et al. 1997) and the controversial Meadowcroft Rockshelter in Pennsylvania. Both sites have early levels dated roughly at 12,000 YBP. Lifeways during the Paleo-Indian Period were characterized by highly mobile hunting and gathering. Prey included megafauna such as mammoth and technology included a distinctive flaked stone toolkit that has been identified across much of North America and into Central America. They likely used some plant foods, but the Paleo-Indian toolkit recovered archaeologically does not include many tools that can be identified as designed specifically for plant processing.

The megafauna that appear to have been the focus of Paleo-Indian life went extinct during a warming trend that began approximately 10,000 years ago, and both the extinction and climatic change (which included warmer temperatures in desert valleys and reduced precipitation in mountain areas) were factors in widespread cultural change. Subsistence and social practices continued to be organized around hunting and gathering, but the resource base was expanded to include a wider range of plant and game resources. Technological traditions also became more localized and included tools specifically for the processing of plants and other materials. This constellation of characteristics has been given the name "Archaic" and it was the most enduring of cultural adaptations to the North American environment throughout this time period.

4.1.2 – ARCHAIC PERIOD (CA. 11,000-3,500 YBP)

The earliest Archaic Period life in inland southern California has been given the name San Dieguito tradition, after the San Diego area where it was first identified and studied (Warren 1968). Characteristic artifacts include stemmed projectile points, crescents and leaf-shaped knives, which suggest a continued, focus on large game, although not megafauna of the earlier Paleo-Indian period. Milling equipment appears in the archaeological record at approximately 7,500 years ago (Moratto 1984:158). Artifact assemblages with this equipment include basin milling stones and unshaped manos, projectile points, flexed burials under cairns, and cogged stones, and have been given the name La Jolla Complex (7,500–3,000 YBP). The transition from San Dieguito life to La Jolla life appears to have been an

valley of San Jose (ibid.:550). Their habitat covered every ecological zone from the ocean, sandy beaches, shallow inlets, coastal chaparral, grassy valleys oak groves, among various other niches. The primary food source consisted of game animals such as deer, rabbit, jackrabbit, woodrat, mice, ground squirrels, antelope, and various species of birds. Next to game animals, acorns were the most single important staple, and six different species were utilized (ibid.:552). The Luiseño social structure is unclear; however, each village was a clan-triblet-a group of people patrilineally related who owned an area in common and who were politically and economically autonomous from neighboring groups. The Luiseño were not organized into exogamous moieties such as were their neighbors, Cahuilla, Cupeño, and Serrano (Strong 1929:291). The hereditary village chief held an administrative position that combined and controlled religious, economic, and warfare powers (Boscana 1846:43). Marriage was arranged by the parents of children and important lineages were allied through marriage. Reciprocally useful alliances were arranged between groups in different ecological niches, and became springboards of territorial expansion, especially following warfare and truces (White1963:130). The Luiseño material culture included an array of tools that were made from stone, wood, bone, and shell, and which served to procure and process the region's resources. Needs for shelter and clothing were minimal in the region's forgiving climate, but considerable attention was devoted to personal decoration in ornaments, painting, and tattooing. The local pottery was well made, although it was not elaborately decorated (Laylander and Pham 2012).
The Luiseño material culture included an array of tools that were made from stone, wood, bone, and shell, and which served to procure and process the region's resources. Needs for shelter and clothing were minimal in the region's forgiving climate, but considerable attention was devoted to personal decoration in ornaments, painting, and tattooing. The local pottery was well made, although it was not elaborately decorated (Laylander and Pham 2012).

4.1.7 – CAHUILLA

The Cahuilla occupied a large area in the geographic center of southern California that was bisected by the Cocopa-Maricopa Trail in addition to Santa Fe and Yuman Trails. They occupied an area from the summit of the San Bernardino Mountains in the north to Borrego Springs and the Chocolate Mountains in the south, portions of the Colorado Desert west of Orocopia Mountain to the east, and the San Jacinto Plain near Riverside and the eastern slopes of Palomar Mountain to the west (Bean 1978). The Cahuilla hunted with throwing sticks, clubs, nets, traps, dead falls with seed triggers, spring-poled snares, arrows (often poison-tipped) and self-backed and sinew-backed bows. They sometimes fired bush clumps to drive game out in the open, and flares to attract birds at night. Baskets of various kinds were used for winnowing, leaching, grinding, transporting, parching, storing, and cooking. Pottery vessels were used for carrying water, for storage, cooking, serving food and drink. Cahuilla tools included mortars and pestles, manos and metates, fire drills, awls, arrow-straighteners, flint knives, wood, horn, and bone spoons and stirrers, scrapers, and hammerstones. Woven rabbit skin blankets served to keep people warm in cold weather. Feathered costumes were worn for ceremonial events, and at these events the Cahuilla made music using rattles derived from insect cocoon, turtle and tortoise shell, and deer-hoofs, along with wood rasps, bone whistles, bull-roarers, and flutes, to make music. They wove bags, storage pouches, cords, and nets from the fibers of yucca.

4.1.8 – EUROPEAN CONTACT

European contact with the Native American groups that likely inhabited the Study Area and surrounding region began in 1542 when Spanish explorer, Juan Rodriguez Cabrillo, arrived by sea during his navigation of the California coast. Sebastian Vizcaino arrived in 1602 during his expedition to explore and map the western coast that Cabrillo visited 60 years earlier. In 1769, another Spanish explorer, Gaspar de Portola, passed through Luiseño/Kumeyaay territory and interacted with the local indigenous groups. In 1798, Mission San Luis Rey was established by the Spanish and it likely integrated the Native Americans from the surrounding region. Multiple epidemics took a great toll on Native American populations between approximately 1800 and the early 1860s (Porretta 1983), along with the cultural and political upheavals that came with European, Mexican, and American settlement (Goldberg 2001:50-52). In the beginning of the nineteenth century, some Spaniards who had worked at the missions began to set up what would later be known as the "Ranchos." The Rancho era in California history was a period when the entire state was divided into large parcels of land equaling thousands of acres apiece. These large estates were ruled over in a semi-feudal manner by men who had been deeded the land by first the Spanish crown, and later the Mexican government. In 1821 Mexico won independence from Spain and began to dismantle the mission system in California. As the missions began to secularize, they were transformed into small towns and most Native Americans would later be marginalized into reservations or into American society. It was during this time that "Americans" began to enter California. Many of the American Californians married

METHODS 5

5.1 – Cultural Resources Records Search

On May 20, 2016, Mr. Purtell conducted a records search of the Study Area and within a one-mile radius of the project boundaries at the CHRIS-EIC. The records search included a review of all recorded archaeological and historical resources within a one-mile radius of the Study Area as well as a review of cultural resource reports and historic topographic maps on file. In addition, MIG reviewed the California Points of Historical Interest (CPHI), the California Historical Landmarks (CHL), the California Register, the National Register, and the California State Historic Resources Inventory (HRI) listings. The purpose of the records search is to determine whether or not there are previously recorded archaeological or historical resources within the Study Area that required evaluation and treatment. The results also provide a basis for assessing the sensitivity of the Study Area for additional and buried cultural resources.

5.2 – Sacred Lands File Search and Native American Consultation

On May 10, 2016, Mr. Purtell commissioned a Sacred Lands File (SLF) records search of the Study Area through the NAHC and conducted follow-up consultation with the eighteen (18) Native American groups or individuals (inclusive of Luiseño and Cahuilla groups) identified by the NAHC as having affiliation with the Study Area vicinity. Each Native American group or individual listed was sent a project notification letter and map and was asked to convey any knowledge regarding prehistoric or Native American resources (archaeological sites, sacred lands, or artifacts) located within the Study Area or surrounding vicinity. The letter included information such as Study Area location and a brief description of the proposed project. Results of the search and follow-up consultation provided information as to the nature and location of additional prehistoric or Native American resources to be incorporated in the assessment whose records may not be available at the CHRIS-EIC.

5.3 – Paleontological Resources Records Search

On May 13, 2016, Mr. Purtell commissioned a paleontological resources records search through the Division of Geological Sciences at the NHMLAC in Redlands, California. This institution maintains files of regional paleontological site records as well as supporting maps and documents. This record search entailed an examination of current geologic maps and known fossil localities inside and within a one-mile radius of the Study Area. The objective of the records search was to determine the geological formations underlying the Study Area, whether any paleontological localities have previously been identified within the Study Area or in the same or similar formations near the Study Area, and the potential for excavations associated with the Study Area to encounter paleontological resources. The results also provide a basis for assessing the sensitivity of the Study Area for additional and buried paleontological resources.

5.4 – Pedestrian Survey

On June 1, 2016, MIG (Mr. Purtell) conducted a reconnaissance site survey of the Study Area to identify the presence of archaeological, historical, or paleontological resources. Mr. Purtell surveyed the Study Area and detailed notes and digital photographs were also taken of the Study Area and surrounding vicinity.

RESULTS 6

6.1 – Cultural Resources Records

Results of the records research conducted at the CHRIS-EIC indicate that there are no cultural resources (prehistoric or historic) recorded within the Study Area. However, there are three (3) previously recorded archaeological resources (prehistoric and historic) and one (1) historic structure located within one-mile radius (1-prehistoric, 2-historic, and 1-historic structure) of Study Area (see Table 1 Previously Recorded Cultural Resources within the Study Area). None of these resources will be impacted by the proposed project. There were no archaeological resources identified during the pedestrian survey. A brief summary of each of these cultural resources is provided below.

Table 1 Previously Recorded Cultural Resources within the Study Area

Resource No.	Resource Type	Description	NRHR Eligibility	CRHR Eligibility	Distance from the Project Site
RIV-CA-005516H P-33-005775	Historic Structure	Well house No. 6, March Air Force Base; dated circa 1953	Not Eligible	Not Eligible	Within a ½ mile to the southwest
RIV-CA-007758 P-33-014136	Prehistoric	Bedrock milling feature, ground equipment, and lithic scatter	Not Eligible	Not Eligible	¼ miles to the southeast
RIV-CA-00822 P-33-015853	Historic	Remains of an agricultural Irrigation system, including concrete pads; dated circa 1943 -1953	Not Evaluated	Not Evaluated	¾ miles to the northwest
RIV-CA-008312 P-33-016078	Historic	Remains of an historic water conveyance system and concrete water reservoir; dated post 1945	Not Evaluated	Not Evaluated	Within a ½ mile to the southwest

KEY:
NRHR = National Register of Historic Places
CRHP = California Register of Historic Resources

RIV-CA-005516H. This historic site was recorded by Tetra Tech, Inc. in 1999. The site is known as Well House No 6. Well house No. 6 is located by Building 3002 and was drilled in 1941 as part of the Gregory Radio Range complex associated with March Army Air Field. The well house is a cube-shaped building measuring 12 feet 4 inches square in plan. It has a concrete foundation and floor, and a flat concrete roof covered with tar and gravel. The exteriors of the walls have a beveled 2-inch setback 17.5 inches below the top of the building. The well house was constructed circa1941 to 1953 and does not appear to have undergone any alterations. The building was determined not to eligible for listing on the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR), under Criteria A, B, C, or D (NRHP) or 1,2,3, or 4 (CRHR). [3]

RIV-CA-007758. This prehistoric bedrock milling feature was first recorded by Clifford and Smith in 2005 and was recorded by Goodwin and Strudwick in 2012. The site consists of four bedrock milling features, 15 grinding slicks, and a single metate fragment. The site measures approximately 50-feet north/south by 100-feet east/west. Goodwin and Strudwick conducted a Phase II Testing and Evaluation of the site, in which they excavated 12 shovel test pits and 3 (1-meter by 1-meter) test units. The results of this investigation showed no significant intact deposits, features or artifacts and showed the site to be a typical example of a common resource type: a processing/temporary camp site lacking substantial subsurface deposits with moderate to severe disturbance. The authors concluded that site does not appear eligible for the California Register; and the remaining data potential for site has been realized by the current testing program.[4]

[3] California Department of Parks and Recreation. 1999. Primary Record for CA-RIV-005516H. Site form on file at the Eastern Information Center, University of California, Riverside

[4] California Department of Parks and Recreation. 2012 Primary Record for CA-RIV-007758.. Site form on file at the Eastern Information Center, University of California, Riverside

RI-09270	2015	Archaeological/Paleontological Monitoring Program Stratford Ranch Industrial Park Project in the City of Perris, Riverside County, California	Archaeological/Paleontological Monitor	Daniel Ballester
RI-09277	2015	Archaeological/Paleontological Monitoring Program ORE Industrial; Perris Valley Logistics; Tentative Parcel Map No. 36010 Project in the City of Perris, Riverside County, California CRM	Archaeological/Paleontological Monitor	Daniel Ballester

RI-07538. This study was conducted in 2007, and documents the results of the Cultural Resources Technical Report in support of the North Perris Industrial Specific Plan for the City of Perris. A cultural resources assessment was conducted and included cultural resources records searches, Native American consultation, and a pedestrian survey of the approximately six square-mile project area (3,860 acres) in the City of Perris. A cultural resource assessment concluded that the proposed Industrial Specific Plan Project Area exhibited a low sensitivity for both historic-period built-environmental features and archaeological remains. The report concluded that any proposed project located within the Industrial Specific Plan Area should require a Cultural Resource Assessment prior to the issuance of a Conditional Use Permit.[7]

6.2 – Sacred Lands File Search and Native American Consultation

The NAHC SLF records search results (received May 16, 2016) revealed that there are no known "Native American cultural resources" in the SLF database within the Study Area. As per NAHC suggested procedure, follow-up letters were sent via certified mail on May 19, 2016 to the eighteen (18) Native American individuals and organizations identified by the NAHC as being affiliated with the vicinity of the Study Area. The letters requested any additional information they may have about Native American cultural resources that may be affected by the proposed project. As of June 9, 2016, MIG has received responses from the following three (3) tribes: The Santa Rosa Band of Mission Indians, Rincon Band of Mission Indians, and the Agua Caliente Band of Cahuilla Mission Indians. The San Luis Band of Mission Indians deterred their comments to the Pechanga Band of Mission Indians or to the Soboba Tribe. The Rincon Band of Mission Indians stated that the project was not within their historic boundaries, had no project concerns, and deferred further comments to the Pechanga Band of Luiseno Indians or the Soboba Band of Luiseno Indians who are located closer to the project area. Finally, the Agua Caliente Band of Cahuilla Mission Indians requested a cultural technical report of the Study Area (the report was in-progress at the time of their request) to include CHIRIS- Record Search results before they would comment on the proposed project. As of June 9, 2016, MIG has received no other responses from the Native American community concerning the proposed project. MIG will keep the Applicant apprised with the progress of this on-going Native American consultation. The NAHC SLF records search results, the Native American contact list, and the Native American Consultation Matrix is provided in Appendix B of this report.

6.3 – Paleontological Resources Records Search

Results of the paleontological resources records search through NHMLAC indicate that no vertebrate fossil localities from the NHMLAC records have been previously recorded within the Study Area or within a one-mile radius. Moreover, no paleontological resources were identified by MIG during the pedestrian survey. Nevertheless, the results of the literature review and the search at the NHMLAC indicate that the Study Area is situated upon surficial deposits of Quaternary Alluvium, derived primarily as alluvial fan deposits from the hills immediately to the northeast and also to the west. These Quaternary alluvial fan deposits are unlikely to contain significant fossil vertebrates, at least in the uppermost layers. Deeper and older Quaternary deposits that may well contain significant fossil vertebrate remains probably underlie the surficial Quaternary Alluvium deposits. Excavations in this older alluvium therefore have high potential to impact paleontologic resources. Further, a review of the City of Perris's General Plan indicate that the Study

[7] CRM Tech. 2007. Cultural Resources Technical Report: North Perris Industrial Specific Plan: City of Perris, Riverside County, California. Report prepared by CRM Tech, Colton, California 92324; prepared for Albert A. Webb Associates, Riverside, California 92506. Report on file at the Eastern Information Center, University of California, Riverside.



Photograph 1: Study Area, view towards the north



Photograph 2: Study Area, view towards the south



Photograph 3: Study Area, view towards the east



Photograph 4: Study Area, view towards the west



Photograph 5: Short-bed camper shell, view towards the south



Photograph 6: Paintroller,closeup

EVALUATION 7

Evaluation of cultural resources is determined by conducting an "evaluation" of a resource's eligibility for listing in the California Register; determining whether it qualifies as a "unique archaeological resource" and determining whether the resource retains integrity. This is achieved by applying the California Register criteria (including criteria for a "unique archaeological resource") as defined in Chapter 2 of this report. If a resource is determined eligible for listing in the California Register or qualifies as a "unique archaeological resource" and retains integrity, then the resource is considered an archaeological resource or a historical resource pursuant to CEQA §15064.5 and any substantial adverse change to the resource is considered a significant impact on the environment. The CEQA guidelines do not provide criteria to evaluate paleontological resources.

7.1 – Archaeological Resources

As discussed previously in Chapter 6, no known archaeological resources from the EIC records were recorded within the Study Area. However, there are three (3) previously recorded archaeological resources (prehistoric and historic) and one (1) historic structure located within a one-mile radius (1-prehistoric, 2-historic, and 1-historic structure) of the Study Area. None of these resources will be impacted by the proposed project. There were no archaeological resources identified during the pedestrian survey. A search of the City of Perris's General Plan indicate that the Study Area lies in a vicinity of low sensitivity for cultural resources, consisting of one recorded cultural site (prehistoric or historic) per square mile (City of Perris General Plan 2005). Nevertheless, despite the heavy disturbances of the Study Area that may have displaced archaeological resources on the surface, it is possible that intact archaeological resources exist at depth. As a result, recommended mitigation measures are provided in Chapter 9 to reduce potentially significant impacts to previously undiscovered archaeological resources that may be accidentally encountered during project implementation to a less than significant level.

7.2 – Historical Resources

As discussed previously in Chapter 6, no known historical resources from the EIC records were recorded within the Study Area. However, there was one (1) previously recorded historic structure (CA-RIV- 005516H) located within a one-mile radius of the Study Area. This historic resource will not be impacted by the proposed project. There were no historic structures (built environments) identified during the pedestrian survey. Therefore, the proposed project would result in no adverse change in the significance of a historical resource.

7.3 – Paleontological Resources

As discussed previously in Chapter 6, no known paleontological resources from the NHMLAC records were recorded within the Study Area, or within a one-mile radius, and no resources were identified during the pedestrian survey. Moreover, no paleontological resources were identified by MIG during the pedestrian survey. Nevertheless, the results of the literature review and the search at the NHMLAC indicate that the Study Area is situated upon surficial deposits of Quaternary Alluvium, derived primarily as alluvial fan deposits from the hills immediately to the northeast and also to the west. These Quaternary alluvial fan deposits are unlikely to contain significant fossil vertebrates, at least in the uppermost layers. Deeper and older Quaternary deposits that may well contain significant fossil vertebrate remains probably underlie the surficial Quaternary Alluvium deposits. Excavations in this older alluvium therefore have high potential to impact paleontologic resources. Further, a review of the City of Perris's General Plan indicate that the Study Area is located within a vicinity of low to high paleontological sensitivity, exhibiting surface exposures of younger Pleistocene valley deposits overlying older valley alluvium at depth; thus, requiring paleontological construction monitoring once subsurface excavations reach five (5) feet in depth, and monitoring levels reduced if appropriate, at the discretion of a certified Project Paleontologist. (City of Perris General Plan 2005, Mitigation Measure IV.A.4). As a result, recommended mitigation measures are provided in Chapter 9 to reduce potentially significant impacts to previously undiscovered paleontological resources or unique geological features that may be accidentally encountered during project implementation to a less than significant level.

IMPACTS/EFFECTS ANALYSIS 8

The purpose of this chapter is to discuss the potential impacts to archaeological, historical, and paleontological resources, and human remains associated with implementing the proposed project.

8.1 – CEQA Significance Thresholds

8.1.1 – ARCHAEOLOGICAL RESOURCES

The current CEQA Guidelines state that a project will have a significant impact on the environment if it will cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. According to the CEQA Guidelines, an archaeological resource is further defined as a resource that qualifies as a "historical resource" pursuant to CEQA Guidelines Section 15064.5 or a "unique archaeological resource" pursuant to Section 21083.2 of the Public Resources Code. These terms are defined earlier in this report. Therefore, a project will have a significant impact on the environment if it will cause a "substantial adverse change" in the significance of a historical resource or "damage" to a unique archaeological resource. A "substantial adverse change" (as defined in the CEQA Guidelines) is caused when one or more of the following occurs:

- Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

- The significance of a historical resource is materially impaired when a project:

  - Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

  - Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

  - Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

The CEQA Guidelines do not define "damage" when it comes to unique archaeological resources, but it can be reasonably interpreted as having a meaning similar to that of "substantial adverse change" (as defined above).

8.1.2 – HISTORICAL RESOURCES

The current CEQA Guidelines state that a project will have a significant impact on the environment if it will cause a substantial adverse change in the significance of a historical resource as defined in §15064.5. According to the CEQA Guidelines, a historical resource is further defined as a resource that qualifies for listing in the California Register or another federal or local register. The criteria for listing are defined earlier in this report. Therefore, a project will have a significant impact on the environment if it will cause a "substantial adverse change" in the significance of a historical resource. The definition of "substantial adverse change" is provided in the previous section, 8.1.1.

The Secretary of the Interior's Standards for Rehabilitation (Standards) are codified in 36 Code of Federal Regulations (CFR) Section 67.7. In most circumstances, the Standards are relevant in assessing whether there is a substantial adverse change under CEQA. Section 15064.5b(3) of the CEQA Guidelines states in part that ". . . a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving,

8.2.4 – PALEONTOLOGICAL RESOURCES

Results of the paleontological resources records search through the NHMLAC indicated no known paleontological resources from the NHMLAC records were recorded within the Study Area, or within a one-mile radius, and no resources were identified during the pedestrian survey. Moreover, no paleontological resources were identified by MIG during the pedestrian survey. Nevertheless, the results of the literature review and the search at the NHMLAC indicate that the Study Area is situated upon surficial deposits of Quaternary Alluvium, derived primarily as alluvial fan deposits from the hills immediately to the northeast and also to the west. These Quaternary alluvial fan deposits are unlikely to contain significant fossil vertebrates, at least in the uppermost layers. Deeper and older Quaternary deposits that may well contain significant fossil vertebrate remains probably underlie the surficial Quaternary Alluvium deposits. Excavations in this older alluvium therefore have high potential to impact paleontologic resources. Further, a review of the City of Perris's General Plan indicate that the Study Area is located within a vicinity of low to high paleontological sensitivity, exhibiting surface exposures of younger Pleistocene valley deposits overlying older valley alluvium at depth; thus, requiring paleontological construction monitoring once subsurface excavations reach five (5) feet in depth, and monitoring levels reduced if appropriate, at the discretion of a certified Project Paleontologist. (City of Perris General Plan 2005, Mitigation Measure IV.A.4). As a result, recommended mitigation measures are provided in Chapter 9 to reduce potentially significant impacts to previously undiscovered paleontological resources or unique geological features that may be accidentally encountered during project implementation to a less than significant level.

8.2.5 – HUMAN REMAINS

No known human remains have been identified from the database within a one-mile radius of the Study Area. No human remains were identified during the pedestrian survey of the Study Area. However, these findings do not preclude the existence of previously unknown human remains located below the ground surface, which may be encountered during construction excavations associated with the proposed project. Similar to the discussion regarding archaeological resources above, it is also possible to encounter buried human remains during construction given the proven prehistoric occupation of the region, the identification of multiple surface archaeological resources within two-miles of the Study Area, and the favorable natural conditions that would have attracted prehistoric inhabitants to the area. As a result, mitigation measures are recommended in the following chapter that would reduce potentially significant impacts to previously unknown human remains that may be unexpectedly discovered during project implementation to a less than significant level.

RECOMMENDED MITIGATION MEASURES 9

9.1 – Archeological Resources

In the event of the unanticipated discovery of archaeological resources during earthmoving operations the following mitigation measures are recommended to reduce potentially significant impacts to archaeological resources that are accidentally discovered during implementation of the proposed project to a less than significant level:

Mitigation Measure CULT-1: Conduct Archaeological Sensitivity Training for Construction Personnel. The Applicant shall retain a qualified professional archaeologist who meets U.S. Secretary of the Interior's Professional Qualifications and Standards, to conduct an Archaeological Sensitivity Training for construction personnel prior to commencement of excavation activities. The training session shall be carried out by a cultural resources professional with expertise in archaeology, who meets the U.S. Secretary of the Interior's Professional Qualifications and Standards. The training session will include a handout and will focus on how to identify archaeological resources that may be encountered during earthmoving activities and the procedures to be followed in such an event, the duties of archaeological monitors, and the general steps a qualified professional archaeologist would follow in conducting a salvage investigation if one is necessary.

Mitigation Measure CULT-2: Cease Ground-Disturbing Activities and Implement Treatment Plan if Archaeological Resources Are Encountered. In the event that archaeological resources are unearthed during ground-disturbing activities, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A buffer area of at least 50 feet shall be established around the find where construction activities shall not be allowed to continue until a qualified archaeologist has examined the newly discovered artifact(s) and has evaluated the area of the find. Work shall be allowed to continue outside of the buffer area. All archaeological resources unearthed by project construction activities shall be evaluated by a qualified professional archaeologist, who meets the U.S. Secretary of the Interior's Professional Qualifications and Standards. Should the newly discovered artifacts be determined to be prehistoric, Native American Tribes/Individuals should be contacted and consulted and Native American construction monitoring should be initiated. The Applicant and City shall coordinate with the archaeologist to develop an appropriate treatment plan for the resources. The plan may include implementation of archaeological data recovery excavations to address treatment of the resource along with subsequent laboratory processing and analysis.

Mitigation Measure CULT-3: Monitor Construction Excavations for Archeological Resources in Younger Alluvial Sediments. The Applicant shall retain a qualified archaeological monitor, who will work under the direction and guidance of a qualified professional archaeologist, who meets the U.S. Secretary of the Interior's Professional Qualifications and Standards. The archaeological monitor shall be present during all construction excavations (e.g., grading, trenching, or clearing/grubbing) into non-fill younger Pleistocene alluvial sediments. Multiple earth-moving construction activities may require multiple archaeological monitors. The frequency of monitoring shall be based on the rate of excavation and grading activities, proximity to known archaeological resources, the materials being excavated (native versus artificial fill soils), and the depth of excavation, and if found, the abundance and type of archaeological resources encountered. Full-time monitoring can be reduced to part-time inspections if determined adequate by the project archaeologist.

the Society of Vertebrate Paleontology, to develop an appropriate treatment plan for the resources. Treatment may include implementation of paleontological salvage excavations to remove the resource along with subsequent laboratory processing and analysis or preservation in place. At the paleontologist's discretion and to reduce construction delay, the grading and excavation contractor shall assist in removing rock samples for initial processing.

Mitigation Measure CULT-8: Prepare Report Upon Completion of Monitoring Services. Upon completion of the above activities, the professional paleontologist shall prepare a report summarizing the results of the monitoring and salvaging efforts, the methodology used in these efforts, as well as a description of the fossils collected and their significance. The report shall be submitted to the Applicant, the City, the Natural History Museum of Los Angeles County, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the project and required mitigation measures.

9.4 – Human Remains

Components of the proposed project that require excavation activities, the following mitigation measure is recommended to reduce potentially significant impacts to previously unknown human remains that are unexpectedly discovered during excavations to a less than significant level:

Mitigation Measure CULT-9: Cease Ground-Disturbing Activities and Notify County Coroner If Human Remains Are Encountered. If human remains are unearthed during implementation of the Proposed Project, the City of Perris and the Applicant shall comply with State Health and Safety Code Section 7050.5. The City of Perris and the Applicant shall immediately notify the County Coroner and no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC shall then identify the person(s) thought to be the Most Likely Descendent (MLD). After the MLD has inspected the remains and the site, they have 48 hours to recommend to the landowner the treatment or disposal, with appropriate dignity, the human remains and any associated funerary objects. Upon the reburial of the human remains, the MLD shall file a record of the reburial with the NAHC and the project archaeologist shall file a record of the reburial with the CHRIS-EIC. If the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner rejects the recommendation of the MLD and the mediation provided for in Subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.

REFERENCES CITED 10

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1978 Serrano. In R. F. Heizer, (ed.). Handbook of North American Indians. Vol. 8: California: 575-587. Washington, DC: Smithsonian Institute.

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Appendix A Resumes

Christopher W. Purtell, M.A., RPA

SENIOR ARCHAEOLOGIST

Christopher Purtell is an archaeologist and archaeological project manager with over ten years of professional experience. He is well-versed in project management, environmental compliance, subcontracting, archaeological survey, excavation, monitoring, data recovery, laboratory analysis, and in the development of mitigation and treatment plans.

Mr. Purtell has successfully coordinated cultural resource projects, mitigation measures, and recommendations pursuant to the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA). Mr. Purtell has worked with a variety of lead and regulatory agencies, including Los Angeles County, Riverside County, San Bernardino County, Ventura County, Orange County, Kern County, Inyo County, Bureau of Land Management, and the Bureau of Indian Affairs, among others. Mr. Purtell is a Registered Professional Archaeologist (RPA) and his training and background meet the U.S. Secretary of the Interior's Professional Qualifications Standards as a Principle Investigator and Field Director for prehistoric and historic archaeology.

His project management duties have included profit and loss responsibilities, budget management, scope preparation, project task administration, Native American scoping/consultation, subcontractor evaluation and procurement, coordination with lead agencies, clients, and project result meetings with the public and stakeholders both in public and in private forms. His experience also includes cultural resources staff management, review and oversight of cultural surveys results and site recordation to include GIS management and databases, preparation of technical reports and overseeing the quality control assurance of all deliverables.

AFFILIATIONS

- Register of Professional Archaeologist (ID No. 990027)
- Society for American Archaeology (SAA)
- Society for California Archaeology (SCA)

TRAINING

- OSHA 8-hr Annual HazWaste Operations Refresher Certification, March 2016
- OSHA 40-hr HazWaste Operations Certification (Certification No. 10052), January 2014

EDUCATION

- Master of Arts, Anthropology (Emphasis in Archaeology), California State University Fullerton, Fullerton, CA
- Bachelor of Arts, Anthropology/Archaeology, Minor in Geography, California State University Dominguez Hills, Carson, CA

RELEVANT EXPERIENCE

- Senior Archaeologist and Project Manager, Section 106 Evaluation Assessment for the Lytle Creek Ranch South Residential Commercial Development-City of Rialto, San Bernardino County
- Senior Archaeologist, PSEP SL32-21 Pasadena Hydro-test Project for Southern California Gas Company-City of Pasadena, County of Los Angeles
- Senior Archaeologist, PSEP SL 36-9-09 North Section Pismo Beach Hydro-test Project for Southern California Gas Company-City of Pismo Beach, County of San Luis Obispo
- Senior Archaeologist, Long Span P610466 & P613008 Project for San Diego Gas and Electric-City of Bonsall, County of San Diego
- Senior Cultural Resources Specialist, Grounding Rods and Laterals Installation at San Fernando Substation for Southern California Edison-City of San Fernando, County of Los Angeles
- Senior Archaeologist and Project Manager, Cultural Resources Assessment for the Proposed North San Diego County Recycled Water Project-San Diego County
- Senior Archaeologist and Project Manager, Archaeological Survey Report California Street Off-Ramp Project-City of Ventura, Ventura County
- Project Manager and Senior Cultural Resources Coordinator, Runway Safety Area Improvement to Runway 6L-24R Project-Los Angeles International Airport, Los Angeles County
- Archaeological Project Manager, Catalina Renewable

Appendix B NAHC Response and Native American Consultation Matrix

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

May 16, 2016

Christopher W. Purtell, M.A., RPA
MIG

Sent by E-mail: cpurtell@migcom.com
Number of Pages: 6

RE: Proposed EMWD Well 204 Project (Project No. 13498), City of Perris, Perris USGS Quadrangle, Riverside County, California

Dear Mr. Purtell:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties. A search of the SFL was completed for the USGS quadrangle information provided with negative results.

Our records indicate that the lead agency for this project has not requested a Native American Consultation List for the purposes of formal consultation. Please note that the intent of the referenced codes below is to mitigate impacts to tribal cultural resources, as defined, for California Environmental Quality Act (CEQA) projects under AB-52.

As of July 1, 2015, Public Resources Code Sections 21080.3.1 and 21080.3.2 **require public agencies** to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose mitigating impacts to tribal cultural resources:

> **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. (Public Resources Code Section 21080.3.1(d))

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.3.1(d), formal notification must include 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. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the 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 have already been recorded on or adjacent to the APE;
   - 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;
   - If the probability is low, moderate, or high that cultural resources are located in the APE.

Native American Contact List
Riverside County
May 16, 2016

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway Cahuilla
Indio , CA 92203
(760) 342-2593

(760) 347-7880 Fax

Los Coyotes Band of Mission Indians
Shane Chapparosa, Chairman
P.O. Box 189 Cahuilla
Warner Springs , CA 92086
Chapparosa@msn.com
(760) 782-0711

(760) 782-0712 Fax

Pala Band of Mission Indians
Shasta Gaughen, PhD, THPO
PMB 50, 35008 Pala Temecula Rd. Luiseno
Pala , CA 92059 Cupeno
sgaughen@palatribe.com
(760) 891-3515

(760) 742-3189 Fax

Pauma Band of Luiseno Indians - Pauma & Yuima
Temet Aguilar, Chairperson
P.O. Box 369, Ext. 303 Luiseno
Pauma Valley , CA 92061
(760) 742-1289

(760) 742-3422 Fax

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resources Manager
P.O. Box 1477 Luiseno
Temecula , CA 92593
pmacarro@pechanga-nsn.gov
(951) 770-8100

(951) 506-9491 Fax

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670 Cahuilla
Anza , CA 92539
admin@ramonatribe.com
(951) 763-4105

(951) 763-4325 Fax

Rincon Band of Mission Indians
Jim McPherson, Tribal Historic Pres. Officer
1 West Tribal Road Luiseno
Valley Center , CA 92082
vwhipple@rincontribe.org
(760) 749-1051

(760) 749-5144

Soboba Band of Luiseno Indians
Carrie Garcia, Cultural Resources Manager
P.O. Box 487 Luiseno
San Jacinto , CA 92581 Cahuilla
carrieg@soboba-nsn.gov
(951) 654-2765

(951) 654-4198 Fax

Torres-Martinez Desert Cahuilla Indians
Mary Resvaloso, Chairperson
P.O. Box 1160 Cahuilla
Thermal , CA 92274
tmchair@torresmartinez.org
(760) 397-0300

(760) 397-8146 Fax

Santa Rosa Band of Mission Indians
Steven Estrada, Chairman
P.O. Box 391820 Cahuilla
Anza , CA 92539
(951) 659-2700

(951) 659-2228 Fax

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 or agency of statutory responsibility as defined in Public Resources Code Sections 21080.3.1 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 is only applicable for contacting local Native Americans with regard to cultural resources for the proposed EMWD Well 204 Project (Project No. 13498), City of Perris, Perris USGS Quadrangle, Riverside County, California.

Native American Contact List
Riverside County
May 16, 2016

San Luis Rey Band of Mission Indians
Cultural Department
1889 Sunset Drive — Luiseno
Vista , CA 92081 — Cupeno
cjmojado@slrmissionindians.org
(760) 724-8505

(760) 724-2172 Fax

Santa Rosa Band of Mission Indians
Terry Hughes, Tribal Administrator
P.O. Box 391820 — Cahuilla
Anza , CA 92539
thughes@santarosacahuilla-nsn.gov
(951) 659-2700

(951) 659-2228 Fax

Kupa Cultural Center (Pala Band)
Shasta Gaughen, Assistant Director
PMB 50, 35008 Pala Temecula Rd. — Luiseno
Pala , CA 92059
sgaughen@palatribe.com
(760) 891-3515

(760) 742-4543 Fax

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs , CA 92264
(760) 699-6800

(760) 699-6919 Fax

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Rroad — Cahuilla
Banning , CA 92220 — Serrano
(951) 849-8807
(951) 755-5200
(951) 922-8146 Fax

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula , CA 92593
striplett@pechanga-nsn.gov
(951) 770-6000

(951) 695-1778 Fax

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley , CA 92061
(760) 742-3771

(760) 742-3779 Fax

Agua Caliente Band of Cahuilla Indians THPO
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs , CA 92264
ACBCI-THPO@aguacaliente.net
(760) 699-6907
(760) 567-3761 Cell
(760) 699-6924 Fax

Augustine Band of Cahuilla Mission Indians
Karen Kupcha
P.O. Box 849 — Cahuilla
Coachella , CA 92236
(760) 398-4722

Pauma Band of Luiseno Indians - Pauma & Yuima
Charles Devers, Cultural Committee
P.O. Box 369, Ext. 317 — Luiseno
Pauma Valley , CA 92061
(760) 742-1289

(760) 742-3422 Fax

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 or agency of statutory responsibility as defined in Public Resources Code Sections 21080.3.1 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 is only applicable for contacting local Native Americans with regard to cultural resources for the proposed EMWD Well 204 Project (Project No. 13498), City of Perris, Perris USGS Quadrangle, Riverside County, California.

Native American Consultation Record

Project Name: EMWD Groundwater Production Well No. 204 Project
Project Number: 13498
NAHC Contact Initiated: 5/13/2016
NAHC Letter Received: 5/16/2016

Results: The NAHC's SLF Search failed to identify Native American Cultural Resource within the Project Area or within a one-mile radius of the Project Area.
The NAHC recommended that we contact eighteen (18) Native American Tribes/Individuals listed below.

Matrix prepared by Chris Purtell

Follow-up conducted by Katherine Zamora

Group/Name	Date Contact was Initiated	Method of Contact	Response
Augustine Band of Cahuilla Mission Indians Mary Ann Green, Chairperson 760-398-4722	5/19/2016	U.S. Certified Mail	Left voice mail on June 2, 2016 @ 12:00 p.m. No response as of June 9, 2016
Cabazon Band of Mission Indian Doug Welmas, Chairperson 760-342-2593	5/19/2016	U.S. Certified Mail	Left voice mail on June 2, 2016 @ 12:05 p.m. No response as of June 9, 2016
Los Coyotes Band of Cahuilla and Cupeno Indians Janice Elzendnga, Tribal Administrator 760-782-0711	5/19/2016	U.S. Certified Mail	Left voice mail on June 2, 2016 @ 12:10 p.m. No response as of June 9, 2016
Los Coyotes Band of Mission Indians Shane Chapparosa, Chairman 760-782-0711	5/19/2016	U.S. Certified Mail	Left voice mail on June 2, 2016 @ 12:15 p.m. No response as of June 9, 2016
Morongo Band of Mission Indians Denise Torres, Cultural Resources Manager 951-849-8807	5/19/2016	U.S. Certified Mail	Left voice mail on June 2, 2016 @ 12:20 p.m. No response as of June 9, 2016

Group/Name	Date Contact was Initiated	Method of Contact	Response
Rincon Band of Mission Indians Jim McPherson, Tribal Historic Preservation Officer 760-398-4722	5/19/2016	U.S. Certified Mail	Response letter received on May 23, 2016. The letter stated: that the Project is within the Luiseno Aboriginal Territory of the Luiseno People however, it is not within Rincon's Historic Boundaries. We do not have any additional information regarding this project, but we defer this project to the Pechanga Band of Luiseno Indians or Soboba of Luiseno Indians who are located closer to your project area.
San Luis Rey Band of Mission Indians Tribal Council 760-724-8505	5/19/2016	U.S. Certified Mail	Telecom with Ms. Machado on June 2, 2016, @ 12:57 p.m. stated that the Tribe deferred to the Pechanga or Soboba Tribes.
Pechanga Band of Mission Indians Mark Macarro, Chairperson 951-770-6100	5/19/2016	U.S. Certified Mail	Left voice mail on June 2, 2016 @ 12:58 p.m. No response as of June 9, 2016
Cahuilla Band of Indians Luther Salgado, Chairperson 760-763-5549	5/19/2016	U.S. Certified Mail	Certified letter was returned on 5-26-16,: Respondent was not at this address.
La Jolla Band of Mission Indians Lavoone Peck, Chairwoman 760-742-3771	5/19/2016	U.S. Certified Mail	Left voice mail on June 2, 2016 @ 12:59 p.m. No response as of June 9, 2016
Agua Caliente Band of Cahuilla Mission Indians Patricia Garica-Plotkin, Director 760-699-6907	5/19/2016	U.S. Certified Mail	Response letter received on June 6, 2016 stated: After reviewing the project information provided and conducting a records search of ACBCI cultural registry it was determined that more information is needed. In order for the ACBCI to provide informed comments and recommendations we request the following: Copies of any cultural resource documentation (report and site records) generated in connection with this project.

Appendix C Paleo Record Search

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Vertebrate Paleontology Section
Telephone: (213) 763-3325
Fax: (213) 746-7431
e-mail: smcleod@nhm.org

27 May 2016

MIG / Hogle-Ireland
1500 Iowa Avenue, Suite 110
Riverside, CA 92507

Attn: Christopher W. Purtell, Senior Archaeologist

re: Vertebrate Paleontology Records Check for paleontological resources for the proposed EMWD Well 204 Project, MIG Project No. 13498, in the City of Perris, Riverside County, project area

Dear Christopher:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed EMWD Well 204 Project, MIG Project No. 13498, in the City of Perris, Riverside County, project area as outlined on the portion of the Perris USGS topographic quadrangle map that you sent to me via e-mail on 13 May 2016. We do not have any fossil localities directly within the proposed project area, but we do have fossil localities from the same type of sediments that probably occur as subsurface deposits in the proposed project area, although at some distance.

The entire proposed project area has surficial deposits of Quaternary Alluvium, derived primarily as alluvial fan deposits from the hills immediately to the northeast and also to the west. These Quaternary alluvial fan deposits are unlikely to contain significant fossil vertebrates, at least in the uppermost layers. Deeper and older Quaternary deposits that may well contain significant fossil vertebrate remains probably underlie the surficial Quaternary Alluvium, however. Our closest fossil vertebrate localities from these older Quaternary deposits are LACM 5168 and 6059, near Lake Elsinore almost directly south and south-southwest of the proposed project area, that produced fossil horse, *Equus*, and camel, *Camelops hesternus*.

Warren, Claude M.
1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. In Archaic Prehistory in the Western United States, edited by Cynthia Irwin-Williams, pp. 1-14. Eastern New Mexico University Contributions in Anthropology No. 1. Portales.

White, Raymond C.
1963 Luiseño Social Organization. University of California Publications in American Archaeology and Ethnology 48:91-194. Berkeley.

Appendix D:
Groundwater Development Initial Siting Study

Prepared for:

Eastern Municipal Water District
2270 Trumble Road
Perris, California 92572
(951) 928-3777

North Perris Groundwater Development Initial Siting Study

Perris, California

Prepared by:

Geosyntec consultants

engineers | scientists | innovators

1650 Iowa Street, Suite 180
Riverside, CA 92507
Telephone: (951) 682-8576
Fax (951) 682-8577
www.geosyntec.com

Project Number: HY1494

4 December 2014

TABLE OF CONTENTS (Continued)

Figure 6: Groundwater Contours
Figure 7: Cross Section A-A′
Figure 8: Cross Section B-B′
Figure 9: Cross Section C-C′
Figure 10: Map View of Proposed Investigation Subareas
Figure 11: 3D Cross Sectional View of Proposed Subareas
Figure 12 Proposed Subareas for Exploratory Boring

- Three subareas, designated as Subareas A-1, A-2 and A-3, were identified for the siting of an exploratory boring. The subareas are ranked in order, with Subarea A-1 estimated to have better groundwater development potential than Subareas A-2 and A-3; and
- Groundwater supply potential in the saturated alluvium is estimated to range from a lower range of approximately 650 AFY (400 gpm) in Subarea A-3 to higher range of approximately 3,000 AFY (1,840 gpm) in Subarea A-1.

Based on the Study results, the following recommendations are provided:

- The Study findings suggest that groundwater development opportunities are indeed available in the study area. However, the Study is based upon estimates from available data and records and as such, further site-specific exploration is recommended to field-verify the estimates provided herein. Geosyntec recommends that an exploratory boring be advanced in Subarea A-1 if possible, as it provides better groundwater development potential than Subareas A-2 and A-3;
- Upon selection of an exploratory boring location, Geosyntec recommends that the following be implemented:
  a) the boring be logged by a State licensed geologist;
  b) a down-hole geophysical log be performed; and
  c) a pumping test be performed to evaluate aquifer transmissivity and potential well production estimates (i.e., potential well yield, drawdown during pumping, and water quality conditions).

study, including site visit, utility clearance, and USA Dig Alert review, should be conducted prior to drilling at any location.

Table 1 - Department of Water Resources Water Well Standards - Offsets

Feature	Minimum Separation Distance (feet)	Source (DWR)
Sewer	50	Bulletin 74-81
Watertight Septic Tank	50	Bulletin 74-81
Pit Privy	50	Bulletin 74-81
Subsurface Sewage Leaching Field	100	Bulletin 74-81
Cesspool or Seepage Pit	150	Bulletin 74-81
Animal or Fowl Enclosure	100	Bulletin 74-81
Any Sewer Line (sanitary, industrial, or storm; main or lateral)	50	Bulletin 74-90
Watertight Septic Tank or Subsurface Sewage Leaching Field	100	Bulletin 74-90
Cesspool or Seepage pit	150	Bulletin 74-90
Animal or Fowl Enclosure	100	Bulletin 74-90
Sewage and Industrial Waste Ponds	site specific	Bulletin 74-90
Barnyard and Stables	site specific	Bulletin 74-90
Feedlots	site specific	Bulletin 74-90
Solid Waste Disposal Sites	site specific	Bulletin 74-90
Above and Below Ground Storage Tanks and Pipelines of Fuel or Chemicals	site specific	Bulletin 74-90
Storage and Preparation Areas for Pesticides, Fertilizers, and Other Chemicals	site specific	Bulletin 74-90
Production Water Wells	2000	District
Perris Drain	100	District
Community Water Supply Well	50	Bulletin 74-81/90

The study area and buffer zones for existing features are shown on Figures 2 and 3.

- Riverside County Habitat Conservation Agency; and
- California Department of Fish and Wildlife.

The drill hole logs from the 1970 Well Siting study, which were included in the *Office Report, Engineering Geology Perris Dam and Lake, Project Geology Report 58-11-05 Appendix C: Drill Hole Logs Part 2 of 2* [DWR, 1970], were not available for review to verify the cross sectional area for underflow from Perris Reservoir. Geosyntec's assessment of the Perris Dam underflow conditions are primarily based on the DWR (1970) Dam Siting Study and the DWR (2013) Draft Geologic Data Report.

3.2 Proposed Subarea Naming Convention

The following proposed location naming convention will be used for Geosyntec's recommended drilling locations. As requested, we have ranked the recommendations by numerical order. These recommended locations were identified based on available data, interpretation of driller and well construction data, and interpretation of geophysical data. A primary factor in choosing the proposed borehole locations is based on areas where relatively increased saturated alluvial thickness is expected to be encountered for potential well construction.

- All proposed subareas are identified with an "A":
  - "A-1"
  - "A-2"
  - "A-3"

4. STUDY RESULTS

The following section presents the results of Geosyntec's document review and groundwater development analysis. The proposed subareas for the borehole locations were based on the findings summarized below.

4.1 Documents Review Summary

- Based on information provided by the California Department of Fish and Wildlife, the proposed subareas for the siting of the exploratory borehole are outside the boundary of the known occupied habitat for the Stephens Kangaroo Rat (SKR). In addition, the Riverside County Habitat Conservation Agency maps for the San Jacinto core reserve were reviewed to verify that the proposed subareas were outside restricted habitat areas (Figure 3).

the location of groundwater well Vogel Engineers and traverses south intersecting groundwater wells EMWD 59 Indian, EMWD 56 New Perry, AG Sod Barret, AG Sod New Dawes, and AG Sod Main House. Based on the well logs, the estimated alluvium thickness range is approximately 432 feet to 880 feet, with the deepest section of alluvium occurring within the center of the cross section. Cross section B-B′ (Figure 8) crosses the northwestern portion of the study area and extends outside of the western boundary starting at groundwater well EMWD 56 New Perry and transverses northeast, intersecting groundwater wells Cocke, Mendez 01, and EMWD MVRWRF South. Based on the well logs, the estimated maximum alluvium thickness is 880 feet at EMWD 56 New Perry and shallows to the northeast to approximately 110 feet. Cross section C-C′ (Figure 9) is located along the western boundary of the study area and extends from the northwestern portion at groundwater well Cocke to the southwestern portion of the study area intersecting groundwater well Garat, and passing by groundwater wells Cooke Margaret, AG Sod New Dawes, and AG Sod Main House. Cross section B-B', which traverses closest to the Subarea A1 boring locations, shows the alluvial thickness between wells Cocke (550 feet) and Mendez 01 (400 feet) to be approximately 480 feet thick at a proposed exploratory borehole location (Figure 10).

4.3 Lithology

Based on the review of the lithologic logs, the study area is underlain by alluvial and fluvial clays, silts and sands, and bedrock. The soils from available drillers logs appeared to consist mainly of well-graded to poorly graded sand and silty sand with lenses of silt/clay units. Depth to bedrock encountered was based on the synthesis of the lithologic logs, drillers' well reports, and well construction data provided by the District and encountered during the documents review. Bedrock maps from a variety of sources were also blended into the interpretation of the alluvial thickness. These bedrock maps covered the right abutment area of the Perris Reservoir Dam which is adjacent to the study area.

4.4 Groundwater

Depth to groundwater data is shown on the cross sections (Figures 7-9). Based on the available data, groundwater depth in the study area ranged from approximately 30 feet to 138.8 feet below ground surface (ft bgs). Shallow ground water occurs at the northernmost well EMWD MVRWRF South (at 30 ft bgs) and is the deepest at groundwater well EMWD 59 Indian (136 ft bgs), which is located due west of the study area. Groundwater data is based on the 2012 groundwater levels provided by the District. The DWR Draft Geologic Data Report Perris Dam Seismic Remediation of Dam Embankment, Project Geology Report D-212; October 2013 indicates that

Based on the calculated hydraulic conductivity (k), the perpendicular saturated surface area (A), and the calculated hydraulic gradient, the groundwater discharge rate or underflow rate (Q) can be estimated by using Darcy's Law: $Q = k\ i\ A$.

Based on the above, the groundwater underflow originating from east of the study area may be calculated as follows. The estimated underflow rate in alluvium in the vicinity of the study area is the hydraulic conductivity of 97 gpd/ft^2 times the hydraulic gradient of 0.007 times the saturated cross sectional area of 1,120,000 ft^2. This flow rate is 760,480 gallons per day, or approximately 528 gallons per minute (gpm), or 852 acre feet per year (AFY). Assuming a 10 % variability in hydraulic conductivity (k), the estimated underflow originating from the east may range between 475 and 581 gpm or 766 and 937 AFY.

The anticipated groundwater production well specific capacity (volume of water pumped per foot of drawdown), or (q/s), can be estimated by Jacob's equation:

$q/s = T/(264 \log (0.3\ T\ t/r^2\ S))$

where:

- q = yield of the well in gpm
- s = drawdown of the well in ft
- T = transmissivity of the well in gpd/ft
- t = time of pumping in days
- r = radius of well in ft
- S = storage coefficient of the aquifer.

If typical values are assumed for the variables in the log function of the above equation such as t = 1 day, r = 0.5 ft, S = 0.075 (unconfined aquifer), and T = 11,600 gpd/ft, the specific capacity for the unconfined alluvial aquifer is given by:

$q/s = T/1391$ or approximately 8 gpm/ft.

Based on the above pumping test data results, the estimated specific capacity of a proposed production well is approximately 8 gallons per minute per foot (gpm/ft) of drawdown. Assuming a 100-ft drawdown and the calculated specific capacity of 8 gpm/ft, the estimated pump rate is approximately 800 gpm or approximately 1,290 AFY.

The existing production wells EMWD 56, EMWD 57, and EMWD 59, located west of the study area, have an average well specific capacity of 16 gpm/ft. Using the estimated

- Groundwater supply potential in the saturated alluvium is estimated to range from approximately 400 gpm (650 AFY) in Subarea A-3 to approximately 1,850 gpm (3,000 AFY) in Subarea A-1.
- A three-dimensional model of the study was prepared using lithologic logs and well construction logs of existing wells, and alluvium thickness plots. Figure 11 shows these components integrated in the determination of the proposed Subareas, A-1, A-2, and A-3 marked on the figure. A representative proposed exploratory borehole location lies within the Subarea A-1, which suggests an area of relatively increased saturated alluvium thickness as compared with surrounding areas.
- Figure 12 is a representation of the difference between the bedrock elevations in relation to current ground surface elevation. The proposed prioritized Subareas (A-1, A-2, and A-3) for an exploratory borehole are located where there are significant zones of saturated alluvium thickness.
- The proposed exploratory borehole location (Subarea A-1) meets the following siting criteria:
  - Greater than 2,000 feet from existing production wells;
  - At least 500 feet from the identified private and monitoring wells;
  - Greater than 100 feet from Perris Storm Drain and other storm drains; and
  - Greater than 1000 feet from Moreno Valley Regional Water Reclamation Facility (MVRWRF) storage ponds.
- The proposed locations are outside of the endangered species habitat for SKR, and no other endangered species were identified in the proposed areas.
- The land use in the immediate area of the proposed areas appears to be open land or industrial operations.

6. RECOMMENDATIONS

This initial Study found that substantial groundwater development opportunities appear to be available in the study area. However, the Study findings are based on evaluation of available data from diverse sources. As such, Geosyntec recommends that the District conduct a site-specific subsurface investigation to evaluate if the initial findings presented herein can be verified. The Study provides a recommendation for suitable locations for the advancement of an exploratory borehole (Subarea A-1) that can be used to evaluate groundwater production potential. The proposed, ranked Subareas

- The estimated underflow values for Perris Dam are based upon simplifying assumptions and may be biased toward higher than actual flow rates because the calculation assumes uniform aquifer permeability and saturation that may not actually exist in the subsurface.
- The potential underflow from Perris Reservoir may be altered by recent and ongoing retrofit construction at the Dam.
- The specific capacity and anticipated pumping rate values include simplifying assumptions, including 100% well efficiency and uniform aquifer parameters. Actual pumping rate conditions may be lower. In addition, part of the aquifer is dewatered during pumping, resulting in a lower transmissivity as the saturated thickness decreases which further decreases the actual achievable pump rate.

8. REFERENCES

Biehler, Shawn and Lee, Tien C. [1993]. "Delineation of a Buried Channel Southwest of Perris Dam, Riverside County, California, A Geophysical Study" 11 May 1993.

Board of Consultants (Campbell, D., Johnson, H., and Tayler, K) [1982]. "Review Report of Safety of Perris Dam" 7 October 1982.

Department of Water Resources [1970]. "Engineering Geology of Perris Dam and Lake" August 1970. (Note Appendix C – Borehole Logs of this Report was not available from this report.)

Department of Water Resources [2006]. "Perris Dam Remediation Groundwater Study" August 2006.

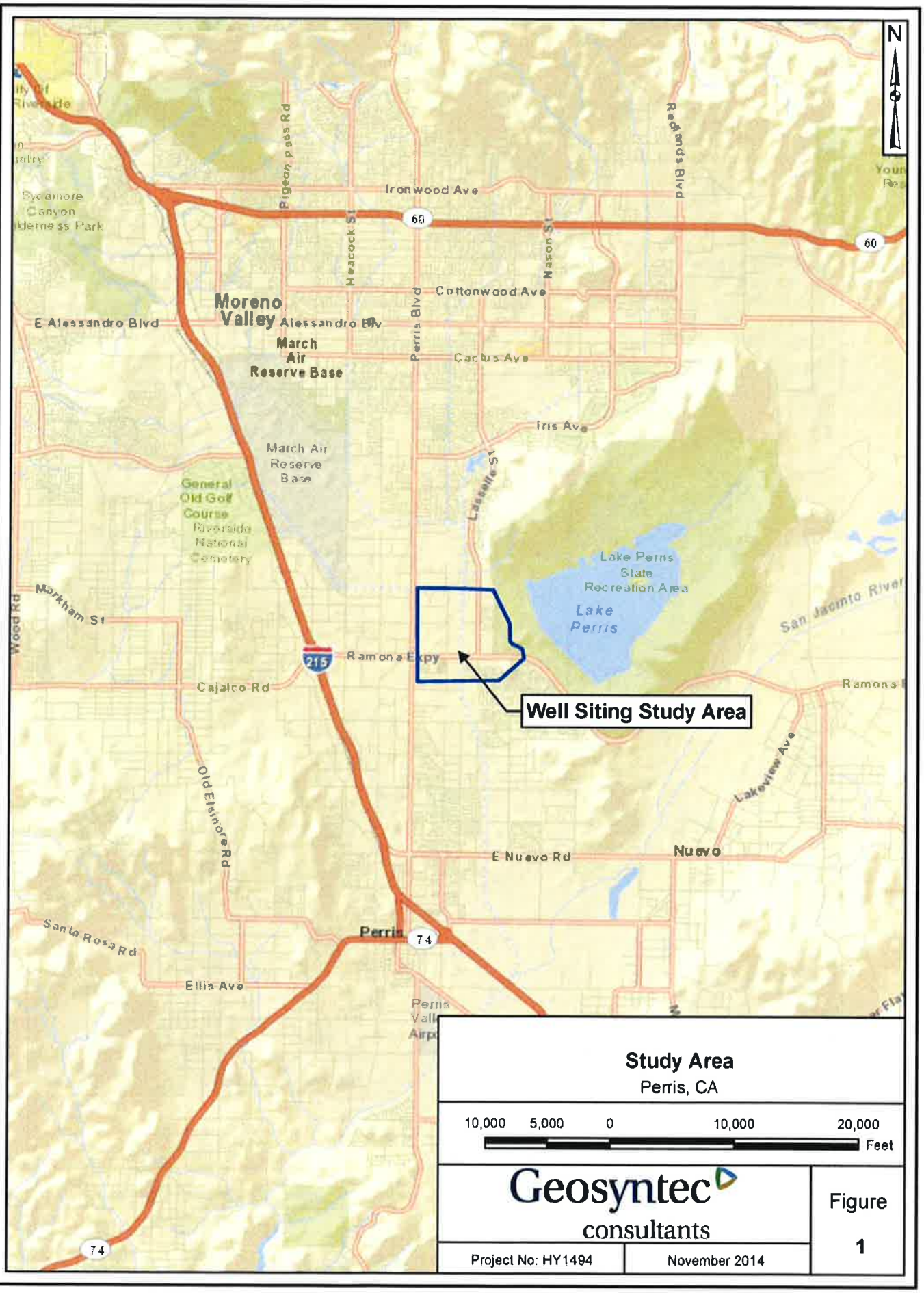
Department of Water Resources [2013]. "Geologic Data Report, Perris Dam Seismic Remediation of Dam Embankment" October 2013.

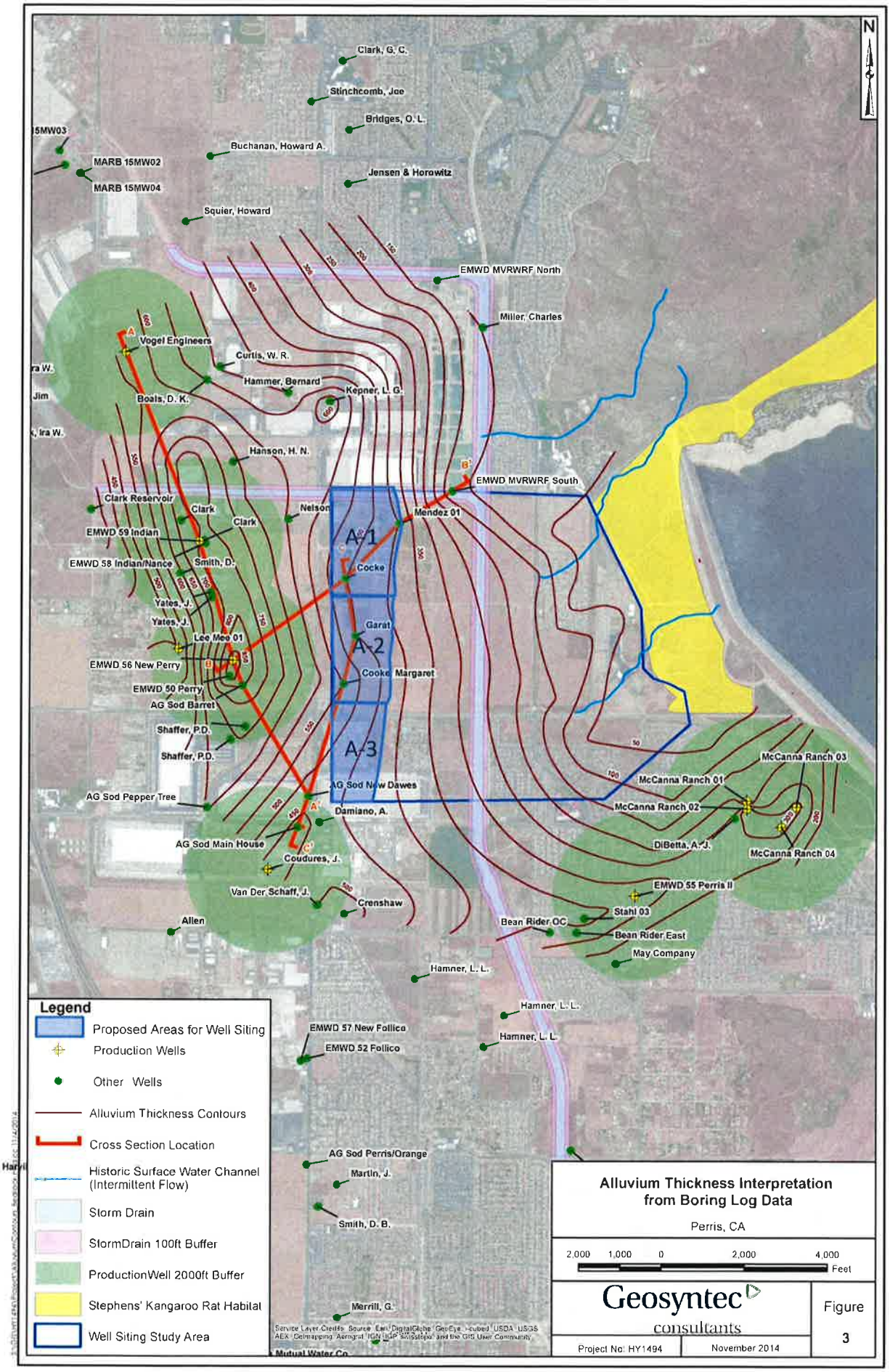
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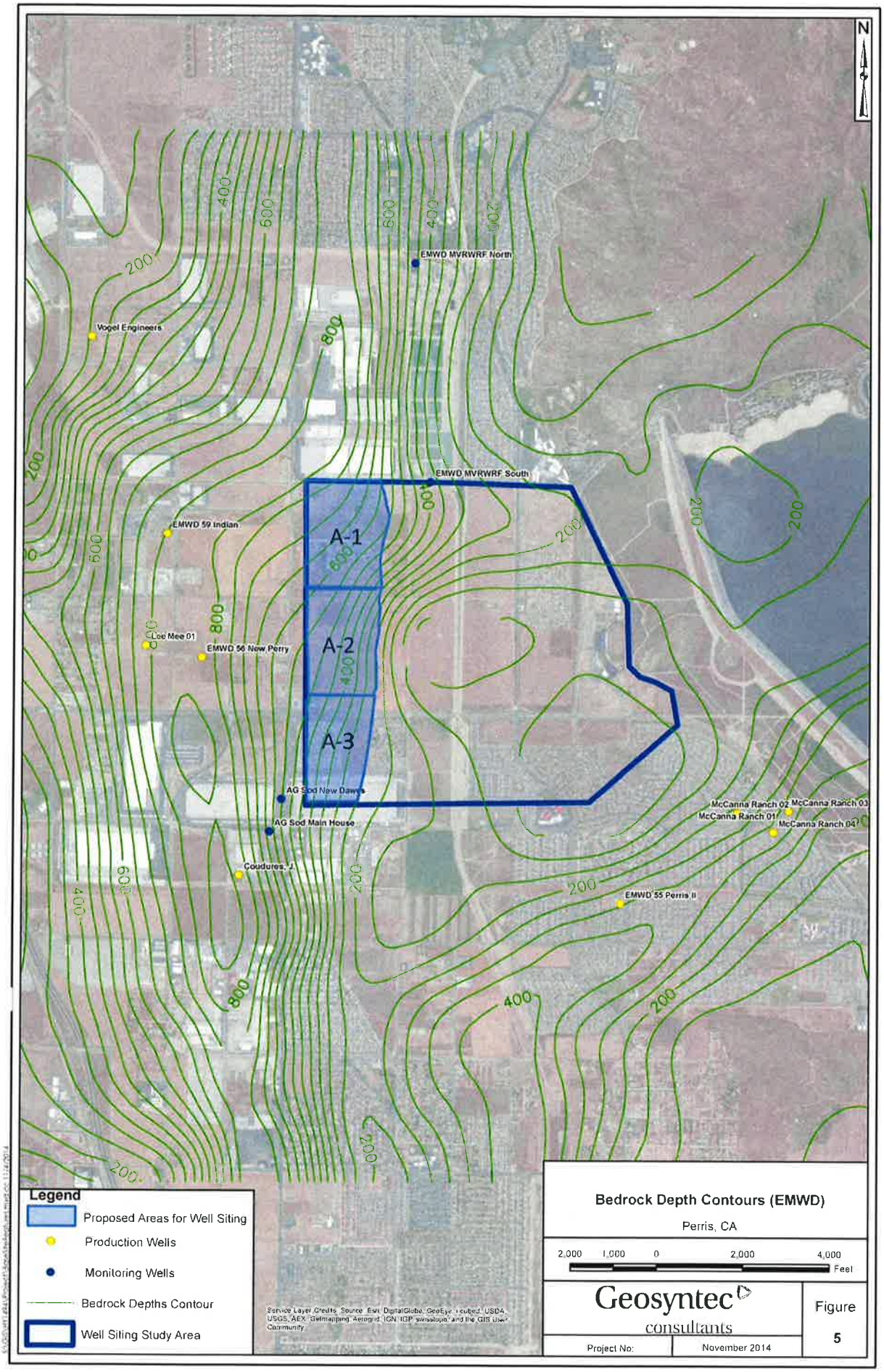
Driscoll, F.G., 1986, Groundwater and Wells

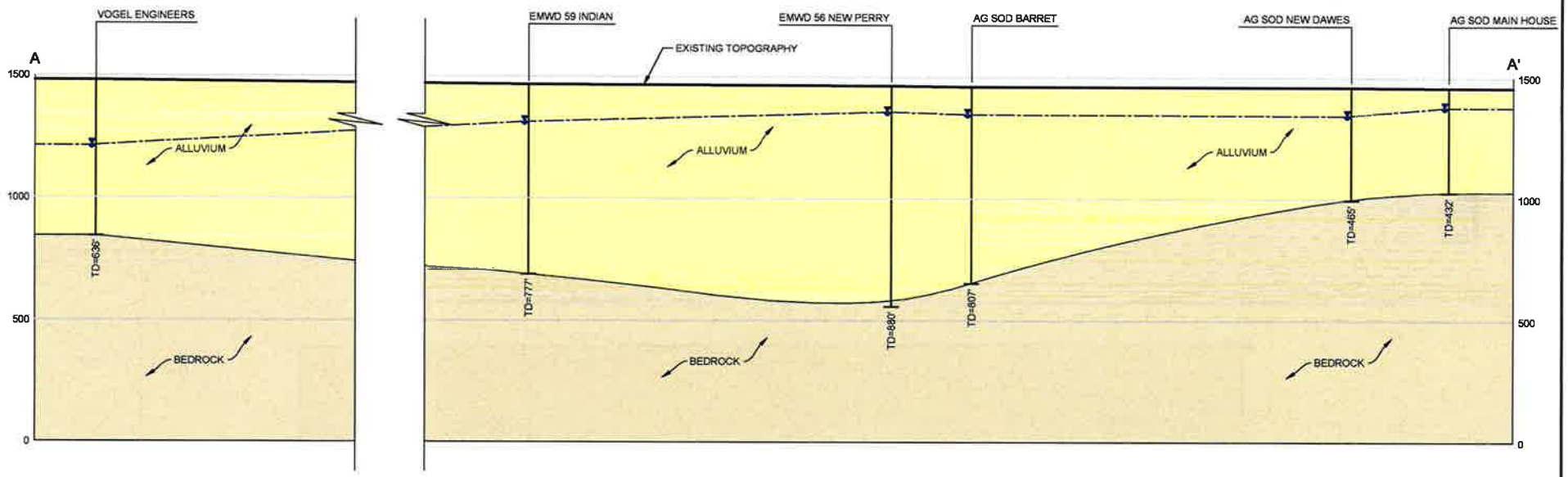
Nelson, Steven G. [1987]. "Biological Assessment Barratt Property, Lake Perris" April 1987.

Riverside County Habitat Conservation Agency [1995]. Habitat Conservation Agency, San Jacinto Core Reserve.


N
Ironwood Ave
60
Pigeon Pass Rd
Heacock St
Perris Blvd
Nason St
Redlands Blvd
Cottonwood Ave
E Alessandro Blvd
Moreno Valley
Alessandro Blv
March Air Reserve Base
Cactus Ave
Iris Ave
March Air Reserve Base
General Old Golf Course
Riverside National Cemetery
Lasselle St
Lake Perris State Recreation Area
Lake Perris
San Jacinto River
Markham St
Wood Rd
215
Ramona Expy
Cajalco Rd
Well Siting Study Area
Old Elsinore Rd
Lakeview Ave
E Nuevo Rd
Nuevo
Perris
74
Santa Rosa Rd
Ellis Ave
Perris Valley Airport
Study Area
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Geosyntec consultants
Project No: HY1494
November 2014
Figure 1
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N
Clark, G. C.
Stinchcomb, Joe
Bridges, O. L.
Buchanan, Howard A.
MARB 15MW03
MARB 15MW02
MARB 15MW04
Jensen & Horowitz
Squier, Howard
EMWD MVRWRF North
Miller, Charles
Vogel Engineers
Curtis, W. R.
Hammer, Bernard
Kepner, L. G.
Boals, D. K.
Hanson, H. N.
EMWD MVRWRF South
Clark Reservoir
Clark
Nelson
Mendez 01
Clark
EMWD 59 Indian
A-1
Cocke
EMWD 58 Indian/Nance
Smith, D.
Yates, J.
Yates, J.
Garat
A-2
Lee Mee 01
EMWD 56 New Perry
Cooke, Margaret
EMWD 50 Perry
AG Sod Barret
Shaffer, P.D.
Shaffer, P.D.
A-3
McCanna Ranch 03
McCanna Ranch 01
AG Sod New Dawes
AG Sod Pepper Tree
McCanna Ranch 02
Damiano, A.
DiBetta, A. J.
AG Sod Main House
McCanna Ranch 04
Coudures, J.
EMWD 55 Perris II
Van Der Schaff, J.
Crenshaw
Stahl 03
Allen
Bean Rider OC
Bean Rider East
May Company
Hamner, L. L.
Hamner, L. L.
EMWD 57 New Follico
Hamner, L. L.
EMWD 52 Follico
AG Sod Perris/Orange
Martin, J.
Smith, D. B.
Merrill, G.
Mutual Water Co
Legend
Proposed Areas for Well Siting
Production Wells
Other Wells
Alluvium Thickness Contours
Cross Section Location
Historic Surface Water Channel (Intermittent Flow)
Storm Drain
StormDrain 100ft Buffer
ProductionWell 2000ft Buffer
Stephens' Kangaroo Rat Habitat
Well Siting Study Area
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Alluvium Thickness Interpretation from Boring Log Data
Perris, CA
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Geosyntec consultants
Figure 3
Project No: HY1494
November 2014


N
EMWD MVRWRF North
Vogel Engineers
EMWD MVRWRF South
EMWD 59 Indian
A-1
A-2
A-3
Loe Mee 01
EMWD 56 New Perry
AG Sod New Dawn
AG Sod Main House
McCanna Ranch 02
McCanna Ranch 03
McCanna Ranch 01
McCanna Ranch 04
Coudures, J
EMWD 55 Perris II
200
400
600
800
Legend
Proposed Areas for Well Siting
Production Wells
Monitoring Wells
Bedrock Depths Contour
Well Siting Study Area
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Bedrock Depth Contours (EMWD)
Perris, CA
2,000 1,000 0 2,000 4,000
Feet
Geosyntec consultants
Figure 5
Project No:
November 2014



LEGEND

- GROUNDWATER LEVEL (OCTOBER, 2012)
- ALLUVIUM
- CRYSTALLINE BEDROCK

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SCALE IN FEET

DRAFT
FOR DISCUSSION PURPOSES ONLY

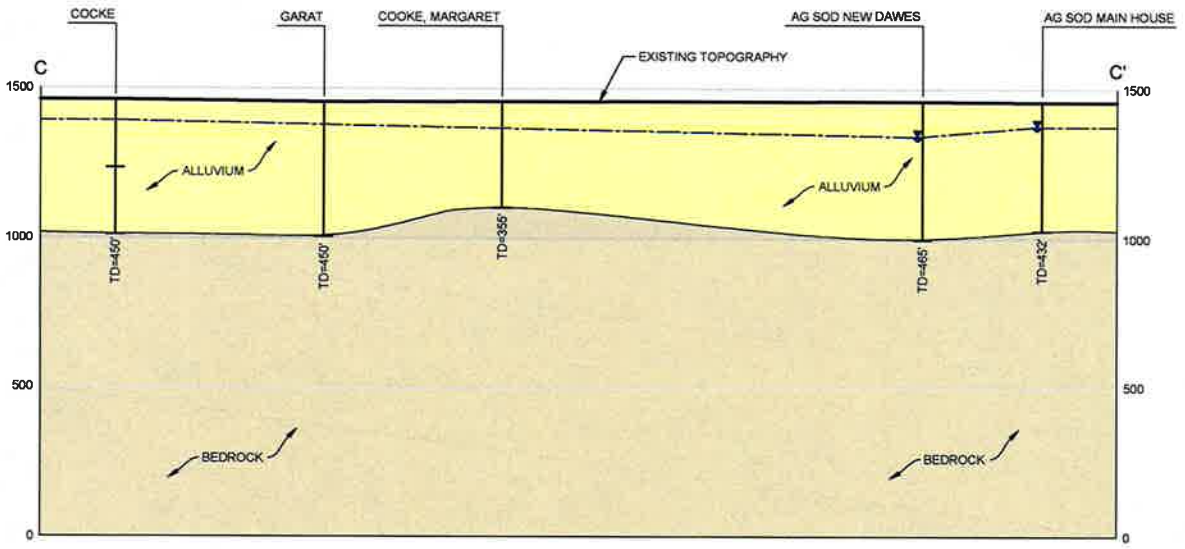
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WELL SITING STUDY
PERRIS, CALIFORNIA

Geosyntec consultants

Project No: HY1494 | October, 2014

Figure 7

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LEGEND

- GROUNDWATER LEVEL (OCTOBER, 2012)
- ALLUVIUM
- CRYSTALLINE BEDROCK

400'
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SCALE IN FEET

DRAFT
FOR DISCUSSION PURPOSES ONLY

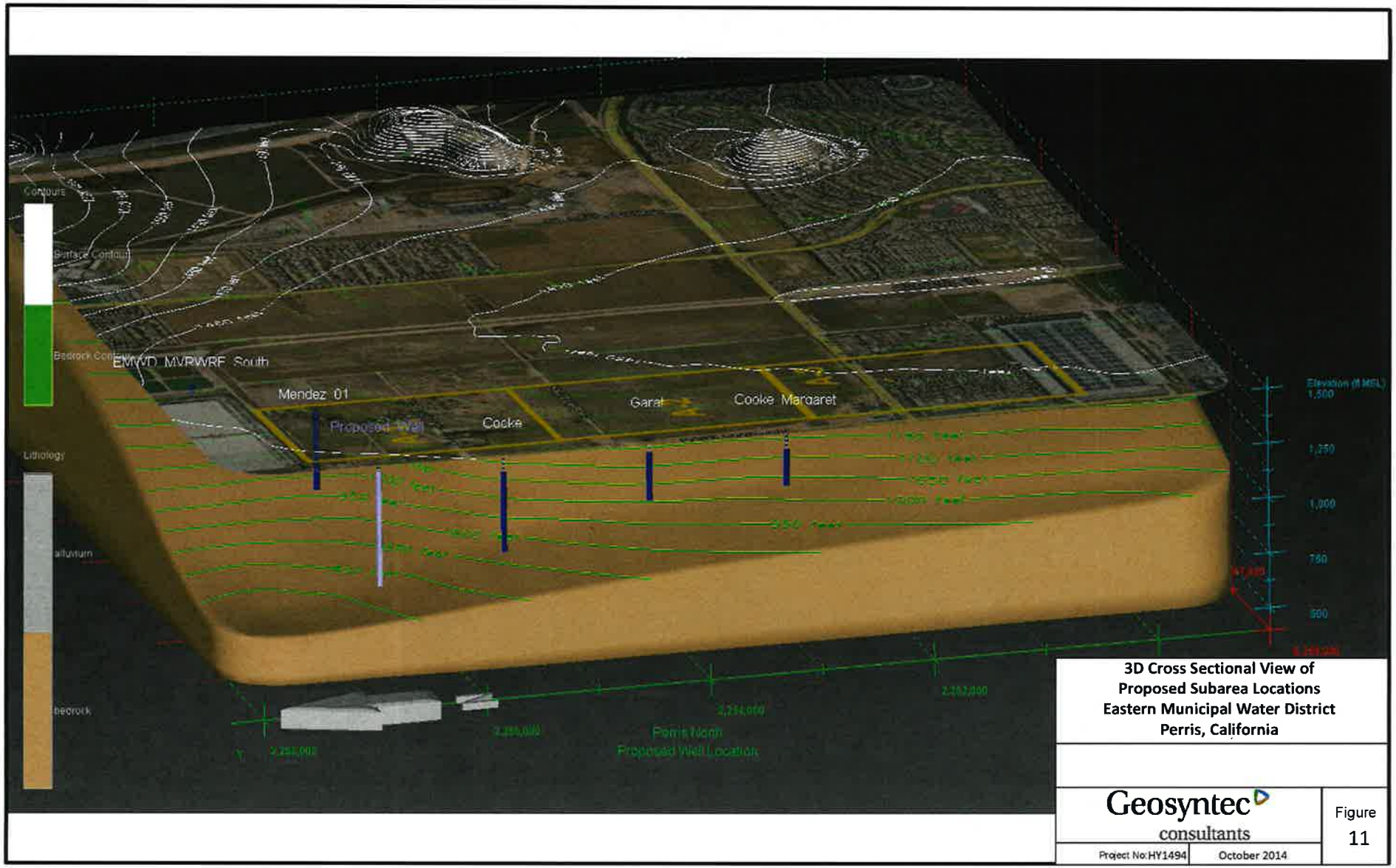
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WELL SITING STUDY
PERRIS, CALIFORNIA

Geosyntec consultants

Figure 9

Project No: HY1494 | October, 2014

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3D Cross Sectional View of
Proposed Subarea Locations
Eastern Municipal Water District
Perris, California

Geosyntec consultants

Project No:HY1494 | October 2014

Figure 11

Appendix E:

Drilling and Testing Summary Report for
Exploratory Borehole EMWD_EX_PV01

FINAL

Drilling and Testing Summary Report for Exploratory Borehole EMWD_EX_PV01, Perris, California

Prepared for

Eastern Municipal Water District



December 2015

CH2M HILL Engineers, Inc.
6 Hutton Centre Drive
Suite 700
Santa Ana, California 92707

Geologic materials encountered during drilling consisting of alluvial sediments from the ground surface to a depth of 490 feet bgs, where bedrock was encountered. Based on review of the soil cuttings, the drilling rate, drill rig behavior, and the geophysical logs for the exploratory borehole, the lithology encountered in the borehole is interpreted as follows:

- Young alluvium (ground surface to 330 feet bgs)
- Older alluvium or alluvial fan deposits (330 to 490 feet bgs)
- Weathered bedrock and bedrock (490 to 695 feet bgs).

The interpreted bedrock contact at 490 feet is consistent with the depth to bedrock near the Site, as presented in previous hydrogeologic evaluations for EMWD (Geosyntec, 2014).

EMWD has a target minimum yield of 650 gpm for a potential future well at the Site. To evaluate the suitability of the Site for installation of a production well, CH2M assumed a potential future well would be screened in the coarse alluvium from 200 to 330 feet bgs, where the highest groundwater discharge rates were observed while airlifting. Yield and drawdown data reported for nearby EMWD wells EMWD 56 New Perry and EMWD 59 Indian (EMWD, 1994, 2005) and specific capacity data reported by other consultants (Geosyntec, 2014) were used as the primary basis for estimating yield for a future well at the Site. Based on the review of these data, a properly constructed well at the Site screened from 200 to 330 feet bgs would have 25 to 41 feet of drawdown, or short-term pumping levels ranging from 77 to 93 feet bgs, if operated at the target yield of 650 gpm. The estimated pumping levels are well above the top of the screen and could easily accommodate a pump configuration capable of achieving 650 gpm.

Field measured water quality parameters, shown in Table 1, indicate no significant changes in groundwater quality with depth. Laboratory-reported concentrations for aluminum, chloride, color, specific conductance, fluoride, iron, manganese, and total dissolved solids exceed California primary MCLs or secondary MCLs for drinking water at most sample depths. In addition, boron was detected in all samples at concentrations much higher than are typically observed in EMWD production wells. All groundwater samples collected displayed elevated turbidity. It is possible that the turbid nature of the samples, the use of drilling fluid additives, or sample handling procedures for metals in particular biased results high.

CH2M recommends that prior to constructing a water supply well at the Site, a new test borehole should be advanced to approximately 500 feet bgs, and isolated aquifer zone testing and sampling should be performed to evaluate yield and water quality further. The preliminary recommendation for isolated aquifer zone testing and sampling intervals, assuming a 20-foot perforated interval, would be 130 to 150 feet bgs, 210 to 230 feet bgs, 295 to 315 feet bgs, and 440 to 460 feet bgs. A well at the Site could be installed to a depth of 490 feet, pending results of the isolated aquifer zone testing and sampling. Although the estimated yield at the Site appears favorable for achieving EMWD's target production rate of 650 gpm, more representative water quality data should be obtained to evaluate whether treatment or blending would be necessary at this location.

Acronyms and Abbreviations

µg/L	micrograms per liter
µmhos/cm	micromhos per centimeter
AFY	acre-feet per year
APN	Assessor's Parcel Number
bgs	below ground surface
CH2M	CH2M HILL Engineers, Inc.
EMWD	Eastern Municipal Water District
gpm	gallons per minute
gpm/ft	gallons per minute per foot
gpm/ft^2	gallons per minute per square foot
GR	gamma ray
MCL	maximum contaminant level
mg/L	milligrams per liter
NTU	nephelometric turbidity units
RLL3	resistivity Laterolog
RLN	resistivity long-normal
RSN	resistivity short-normal
Site	borehole location in the southern portion of real property known as APN-302-110-028, southeast of the intersection of Nance Street and Flair Court, in Perris, California
Sonic	sonic velocity/variable density
SP	spontaneous potential
TDS	total dissolved solids

1.3 Report Organization

This report is organized into sections as follows:

- Section 1, Introduction, describes the project location, purpose, and scope of work.
- Section 2, Drilling and Testing Methodology, provides detailed descriptions of inspection during borehole drilling, soil and groundwater sample collection, borehole geophysical logging, borehole destruction, and site restoration.
- Section 3, Results of Drilling and Testing, describes analysis and interpretation of borehole lithologic and geophysical logs, estimation of groundwater discharge rate during drilling and sampling, and the production zone.
- Section 4, Conclusions and Recommendations, provides conclusions and recommendations based on the results of the exploratory drilling.
- Section 5, References, lists references cited in this report.

Tables, figures, and appendices containing supporting information are provided at the end of the report.

- The Site was cleared of drilling equipment and cleaned to the satisfaction of EMWD and the property owner.

The selected method of drilling and sampling, combined with the subsurface conditions at the Site led to significant quantities of sediment were produced while airlifting groundwater samples. The excessive sediment removal likely increased the borehole diameter at the depths of groundwater samples and caused borehole stability issues that initiated the switch to direct mud rotary drilling.

Drill cuttings and fluids produced during drilling were contained in steel hoppers. Yellow Jacket excavated two shallow temporary pits near the drilling site that were used to contain and temporarily store excess fluids and cuttings generated during drilling.

Appendix A includes documentation of the field activities, including a photographic log of the field activities (Appendix A-1), field notes (Appendix A-2), and groundwater sample logs (Appendix A-3).

2.3 Soil Sample Collection, Logging and Documentation

Composite soil samples were collected across 10-foot intervals during borehole drilling. Soil samples were collected in 1-gallon sealable plastic bags for potential future analysis, and were placed in sealable plastic trays for visual inspection, logging, and archiving purposes. The tray compartments were labeled with the borehole name and depth intervals; copies were retained by CH2M and provided to EMWD. Bag samples were retained until the drilling was completed, then were disposed on the ground surface and incorporated into site restoration activities. The soil samples were logged in the field in accordance with the Unified Soil Classification System (U.S. Bureau of Reclamation, 1990a, 1990b). The lithologic log for EMWD_EX_PV01 is provided in Appendix B.

2.4 Groundwater Sample Collection and Analysis

Groundwater samples were collected while drilling to characterize water quality conditions at the Site. The samples were collected from the upper portion of the borehole that was advanced by dual-tube reverse air rotary drilling, which allowed the samples to be airlifted to the ground surface. Groundwater samples were not collected from the lower portion of the borehole, which was advanced by direct mud rotary drilling.

2.4.1 Groundwater Sample Collection

Groundwater samples were collected for field testing and laboratory analysis. Samples were collected and the groundwater discharge rate was estimated at 40-foot intervals once sufficient groundwater was encountered while drilling with the dual-tube reserve air rotary method. Drilling was paused for sampling, and groundwater was airlifted for 30 to 45 minutes in an attempt to flush the drilling fluids and allow the discharge water to clear and stabilize prior to collecting groundwater samples. Groundwater was first observed at a depth of approximately 80 feet bgs; however, there was an insufficient amount of water to airlift a sample until drilling was advanced to 120 feet bgs. Groundwater samples were collected at 120, 160, 200, 240, 280, and 320 feet bgs.

Groundwater from the drill rig cyclone discharge was periodically collected to monitor field parameters (pH, turbidity, conductivity, and temperature). Field parameters were recorded using a hand-held Horiba U52-2 water quality meter calibrated to laboratory-prepared standards. The groundwater discharge rate from the cyclone was estimated by measuring the time necessary to fill a 5-gallon bucket and then converting the rate into gpm. Field parameter data and estimated discharge rates are summarized in Table 1. Groundwater sample and production field forms are included in Appendix A-3.

Groundwater samples for laboratory analysis were collected in 5-gallon buckets and retained for approximately 2 hours to allow solids to settle. Subsequently, groundwater samples were decanted into

In addition to the groundwater samples, EMWD's laboratory analyzed the drilling fluid additives EZ-Mud and Quik-Gel Gold for metals, fluoride, and TDS.

2.5 Borehole Geophysical Logs

Downhole borehole geophysical logging was performed by Pacific Surveys of Claremont, California, subcontracted to Yellow Jacket. The geophysical logs provide important information about lithologic characteristics and groundwater quality. The specific geophysical logs obtained from the borehole included:

- Resistivity (short-normal [RSN] and long-normal [RLN])
- Resistivity laterolog (RLL3)
- Gamma ray (GR)
- Spontaneous potential (SP)
- Sonic velocity/variable density (Sonic)

Borehole geophysical logs are provided in Appendix D.

2.6 Borehole Destruction and Site Restoration

Upon completion of drilling, sample collection, and geophysical logging, the borehole was destroyed in accordance with the applicable State of California and EMWD requirements. The borehole was backfilled from the total depth (695 feet bgs) to approximately 10 feet bgs with a slurry mixture of cement with approximately 5 percent sodium bentonite using a tremie pipe. The tremie pipe was raised simultaneously as the cement-bentonite was pumped into the borehole. The upper 10 feet of the borehole was then backfilled with ¾-inch sodium bentonite chips and hydrated to ground surface.

Once fluids generated had evaporated sufficiently, Yellow Jacket backfilled the two shallow pits used to contain fluids and cuttings, and regraded the drill pad area to restore the original surface conditions. On September 4, 2015, following completion of field activities and demobilization of the contractors and equipment from the Site, CH2M staff inspected the drill pad area and found the area had been cleaned and restored to its original condition in accordance with the scope of work.

grainsize characteristics and geophysical log response. This interval is interpreted to consist of older alluvium or alluvial fan deposits.

- A distinct color change in soil samples (from brown to grayish brown), further reduction in drilling rate, increased chattering from the drill rig, an increase in subangular to angular grains, and a significant increase in mica content were observed at 490 feet. In addition, distinct shifts on the geophysical logs (reduced GR, increased resistivity, and reduced travel time on the sonic log) are observed at this depth. These observations suggest a transition from older alluvium deposits to weathered bedrock. The interpreted bedrock contact at 490 feet is consistent with the depth to bedrock in the vicinity of the Site, as presented in previous hydrogeologic evaluations for EMWD (Geosyntec, 2014).

3.2 Evaluation of Groundwater Production Potential

To evaluate the suitability of the Site for installation of a production well, CH2M assumed a potential future well would be constructed with 16- to 18-inch-diameter casing and screened in the coarse alluvium from 200 to 330 feet bgs, where the highest groundwater discharge rates were observed while airlifting. The above well size and screened interval assumed for this evaluation are generally consistent with the screen lengths and casing diameters of EMWD's nearby production wells. Data available from EMWD wells EMWD 56 New Perry, EMWD 59 Indian, EMWD Perris II, EMWD 57 New Follico, McCanna Ranch No. 3, and McCanna Ranch No. 4 – all within approximately 2 miles of the Site – were reviewed for this evaluation. Table 2 provides a compilation of well construction, yield, drawdown, and specific capacity data for EMWD's nearby production wells, which were used as a basis for evaluating potential yield of a new well at the Site.

EMWD has a target minimum yield of 650 gpm for a potential future well at the Site. Yield and drawdown data reported on State of California Well Completion Reports from initial pump testing of nearby EMWD wells EMWD 56 New Perry and EMWD 59 Indian were used as the primary basis for estimating yield for a future well at the Site (EMWD, 1994, 2005). EMWD 56 New Perry and EMWD 59 Indian are both located within 1 mile of the Site, and based on comparison of geophysical and lithologic logs, are screened across a depth interval consistent with the geology observed between 200 and 330 feet bgs at the Site. Thus it is assumed that a properly constructed well screened across this interval at the Site would exhibit similar hydraulic properties. Based on the average specific capacity normalized per foot of screen at EMWD's nearby representative wells (0.2 gallon per minute per square foot [gpm/ft^2]), a properly constructed well at the Site screened from 200 to 330 feet bgs would have a specific capacity of 26 gallons per minute per foot (gpm/ft), and would have 25 feet of drawdown if operated at the target yield of 650 gpm.

Other consultants reported more conservative values of specific capacity for EMWD's nearby wells of 16 gpm/ft (Geosyntec, 2014). This value is within the average specific capacity range for EMWD's production wells of 5 to 20 gpm/ft reported to CH2M (EMWD, 2015). Using the alternate, conservative specific capacity of 16 gpm/ft, EMWD's target yield of 650 gpm can be achieved with an estimated 41 feet of drawdown.

Assuming a static water level for a well screened from 200 to 330 feet bgs at the Site would be equivalent to the stabilized water level observed in EMWD_EX_PV01 (52 feet bgs), the top of the well screen would be approximately 148 feet below the static level in the well. Short-term pumping levels could range from 77 to 93 feet bgs, based on the drawdown estimates for the two specific capacity assumptions. The estimated pumping levels are well above the top of the screen and could easily accommodate a pump configuration capable of achieving 650 gpm.

3.4 Limitations

The depth-specific groundwater discharge rates and groundwater quality results are influenced by groundwater surrounding the drill bit and from overlying formations that potentially migrated down the outside of the dual-tube drill pipe because the drilling method does not seal off the borehole above the drill bit. The potential influence of water from above on water quality data and discharge rates may have been exacerbated by borehole instability issues, as described in Section 2.2. The amount of blending depends on characteristics of the aquifer materials and their tendency to facilitate hydraulic communication between sampling depths. Thus, depth-specific airlifted discharge rate measurements and water quality results are approximate and may overestimate or underestimate the actual concentrations and discharge rate for a given depth interval, depending on the constituent concentrations and degree of blending with water from overlying aquifer zones.

The evaluation of groundwater production potential for a new well is partially based on assumed correlations between the lithology observed at the Site and at nearby wells, and the specific capacity data documented for existing nearby wells upon installation. Should the specific capacity (normalized by screen length) of a future well installed at the Site be significantly less than the specific capacity observed in nearby EMWD wells, the estimated short-term drawdown could be more than predicted by this evaluation.

SECTION 5

References

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Waterloo Hydrogeologic. 2014. AquaChem, version 2014.2. Schlumberger Water Services.

Table 1. Summary of Groundwater Field Parameters and Discharge Rates

Exploratory Borehole EMWD_EX_PV01, Perris, California

Depth (ft bgs)	Date	Estimated Discharge Rate (gpm)	Temperature (°C)	pH	Electrical Conductivity (µmhos/cm)	Turbidity (NTU)
100[a]	8/24/2015	5 - 10	25.1	7.65	2,630	>1,000
120	8/24/2015	30	24.3	7.89	1,380	350
160	8/24/2015	50	25.0	8.50	1,180	>1,000
200	8/25/2015	40 - 50	21.7	7.70	1,070	>1,000
240	8/25/2015	60 - 65	22.7	8.00	1,320	>1,000
280	8/25/2015	65 - 70	21.7	8.40	1,400	>1,000
320	8/25/2015	65 - 73	21.7	8.22	1,300	>1,000

Notes:

[a] Insufficient groundwater produced; no associated water sample.

°C = degrees Celsius

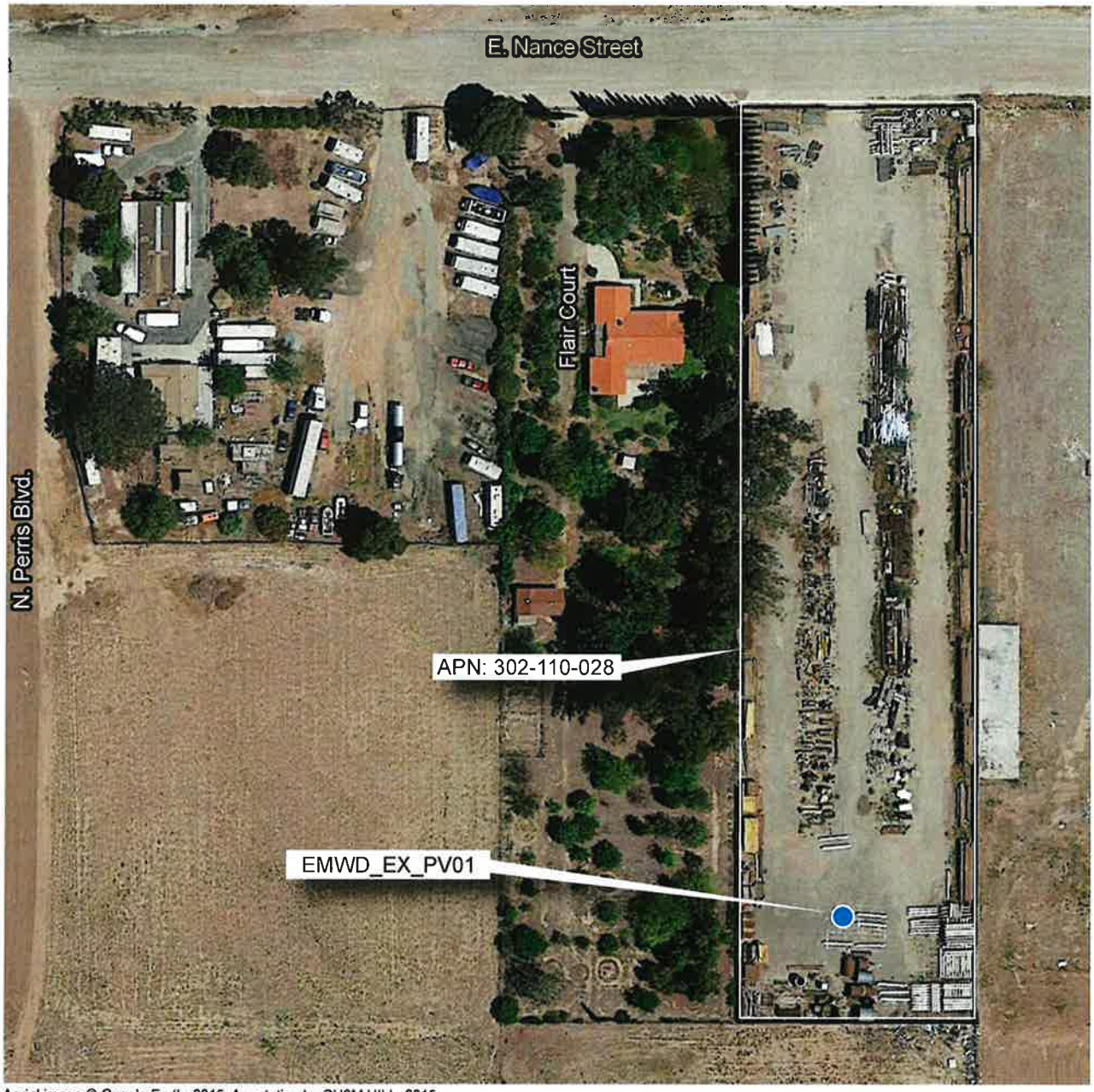
µmhos/cm = micromhos per centimeter

ft bgs = feet below ground surface

gpm = gallons per minute

NTU = nephelometric turbidity unit(s)

Figures



Aerial image © Google Earth, 2015. Annotation by CH2M HILL, 2015.

North

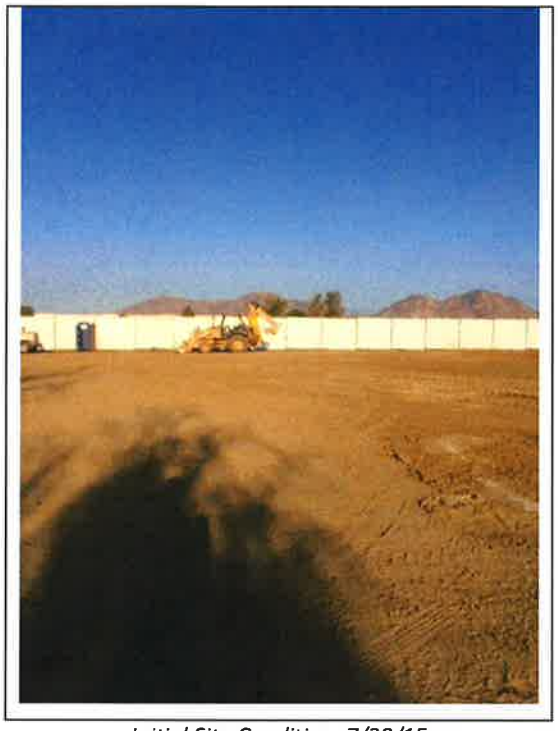
0 100 200

Approximate scale in feet

Figure 2.
Site Map
Exploratory Borehole EMWD_EX_PV01
Eastern Municipal Water District
Perris, California

ch2m

Appendix A
Field Documentation



Initial Site Condition, 7/29/15



11.5-inch Tri Cone Drill Bit used 0-20 ft bgs at EMWD_EX_PV01, 8/21/15



6.5-inch Tri Cone Drill Bit used 20-340 ft bgs at EMWD_EX_PV01, 8/24/15-8/26/15



Cyclone, hopper and east discharge pit #1 at EMWD_EX_PV01, 8/25/15



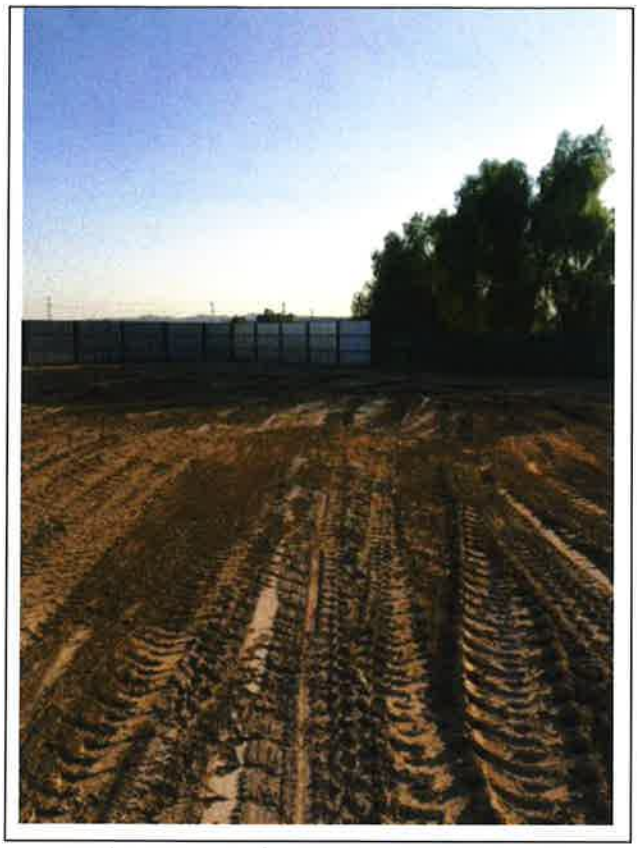
Surface cracks observed while airlifting at 340 ft bgs, EMWD_EX_PV01, 8/26/15



Direct mud drilling (340-695 ft bgs), mud pan (middle), mud shaker (right), EMWD_EX_PV01, 8/27/15



Direct mud drilling (340-695 ft bgs), mud pan (middle), pump (bottom right), EMWD_EX_PV01, 8/27/15



Southwest corner of property after site restoration activities, EMWD_EX_PV01, 9/4/15

CONTENTS

PAGE	REFERENCE	DATE

Location EMWD_EX_PW01 Date 8/20/15

Project / Client EMWD Exploratory Borehole

0800 ADW on-site. Complete PTSP.
0835 Brandon (YJ) on-site. Moved portöpotty and backhoe on-site.
0845 Call from Eric (YJ Driller). YJ crew is finishing modifications to rig @ Rancho yard. Will contact when en route.
0900 Brandon off-site.
0920 Michael Nasser (EMWD) on-site.
0940 Michael off-site.
1100 Michael drops off lab bottles and coolers.
1200 " " Call from Eric, rig should be arriving soon.
1300 John Daverin (EMWD) on-site.
1330 Call to Dean Coblish (YJ) about status of the rig.
1355 ADW & EMWD off-site.

ADW 8/20/15

Rite in the Rain

Location EMWD_EX_PW01 Date 8/24/15

Project / Client

1330	Restart airlifting @ 120 ft bgs to sample w/ buckets. Redrill 100'-120'.
1400	Sample collected @ 120'. Resume drilling.
1440	Drilled to 160 ft bgs. Pause to airlift for sampling.
[redacted]	Sample collected.
1545	Drilled to 200 ft bgs.
1600	SWL = 53.48 ft bgs
1615	ADW off-site to lab.
1645	Deliver samples to lab: EMWD_EX_PW01_100-120 EMWD_EX_PW01_140-160
1700	ADW offsite from EMWD lab.

ADW 8/24/15

Location EMWD_EX_PW01 Date 8/25/15

Project / Client

0655	ADW on-site.
0715	PTSP & Tailgate Safety Mtg.
0730	PJ crew tripping back in and expanding mud pit.
0800	SWL = 52.15 ft bgs.
0930	Drilled back down to 200'. Start airlifting for sampling.
1005	GW samples collected @ 200'. Will settle in buckets.
1010	John Davern on-site.
1110	Drilled to 240 ft bgs. Pause to airlift.
1145	GW samples collected @ 240'. Will settle in buckets.
1310	Drilled to 280 ft bgs. Pause to airlift.
1345	GW samples collected in buckets.
1437	Drilled to 320 ft bgs Pause to airlift.
1515	Samples collected @ 320 ft bgs. Will settle in buckets.
1545	Drilled to 340 ft bgs. Start tripping out.
1640	SWL = 37.2 ft bgs
1650	ADW off-site.

ADW 8/25/15

Rite in the Rain

Location EMWD_EX_PW01 Date 8/27/15

Project / Client

1543 Tripped w to 200 ft bgs. Drill bit plugged up. PJ crew will trip out to unplug. Also are checking on 6 1/2 bit availability.

1700 ADW off-site. Will trip back w/ drill tomorrow AM.

ADW 8/27/15

Location EMWD_EX_PW01 Date 8/28/15

Project / Client

0650 ADW on-site.

0900 PTSP & Tailgate Safety Meeting.

0730 Borehole tagged @ ~54 ft bgs. Start tripping in / drilling with new 6 1/2 inch bit for mud drilling

0830 Redrilled to 120', pause to refill water, viscosity of mud: 36-39

1145 Mike (EMWD) on-site.

1135 Geary Woods (YJ) on-site. YJ redrilled to 340 ft bgs. Start new drilling/logging @ 340'.

1315 Call from Alan & BT (CHZM). YJ drilled to 580'

1445 YJ drilled to 420'

1600 YJ drilled to 460'. 2000-2500 gal mud used total. ~40 viscosity.

1640 YJ trips out ~100 ft.

1700 ADW off-site.

Work resumes 8/31/15.

ADW 8/28/15

Rite in the Rain

14

Location EMWD_EX_PW01 Date 9/2/15

Project / Client

07:00 MATT MAHRT ON SITE
CONDUCT PTSP & TAILGATE SAFETY MEETING.
07:30 RESUME DRILLING AT 695 FT.
08:30 AFTER ACHIEVING NO ADDITIONAL DEPTH AND DISCUSSING WITH JOHN DAVERIN OF EMWD, DISCONTINUE DRILLING/ROTATION. BOREHOLE TD = 695 FT; GRANITIC BEDROCK CONTACT AT 680 FT.
PACIFIC SURVEYS CONDUCTS BOREHOLE GEOPHYSICAL LOGGING

DRILLER'S GROUTED THE BOREHOLE WITH A SLURRY MIXTURE OF CEMENT AND 5% BENTONITE BY PRESSURE GROUTING WITH A TREMIE PIPE FROM TOTAL DEPTH TO <100 FT BGS
16:30 DEPART SITE
NOTES ENTERED FOR MATT MAHRT BY ADAM BRADFORD
10/19/15

15

Location EMWD_EX_PW01 Date 9/3/15

Project / Client

06:45 ANDREW BARNHART ONSITE
YELLOW JACKET DRILLING (YJD) IS ALREADY ONSITE. MEET THE RIG CREW AND DISCUSS SCOPE OF WORK FOR THE DAY AND COMPLETE PTSP
07:10 DRILLER'S TAG HARD GROUT SURFACE AT 58 FT BGS IN BOREHOLE
07:50 NOTE IN EMWD DRILLER'S SOW THAT UPPER 10 FT TO BE BACKFILLED WITH BENTONITE PELLETS; DRILLERS ONLY HAVE 3/4" BENTONITE CHIPS
08:00 CALL ARTIE WICKHAM WHO CONFIRMS IT'S OKAY TO USE CHIPS INSTEAD OF PELLETS
09:00 HARD SURFACE TAGGED AT 55 FT BGS AFTER DRILLER'S PUMPED IN 3.5 BINS OF GROUT
09:15 DRILLER RUNS OUT OF CEMENT, SENDS HELPER TO HOME DEPOT TO PURCHASE MORE.
10:10 CREW MEMBER RETURNS WITH CEMENT. HARD SURFACE TAGGED AT 51.5 FT BGS
10:20 OBSERVE GROUT FLOWING OUT OF

Rite in the Rain

Appendix A-3
Groundwater Sampling Logs

CH2MHILL

PROJECT NUMBER	WELL ID	
660704	EMWD_EX_PW01	Sheet 2 of 7

GROUNDWATER SAMPLING/PRODUCTION LOG

PROJECT: EMWD PERRIS EXPLORATORY BOREHOLE LOCATION: PERRIS, CA

DRILLING SUBCONTRACTOR: YELLOW JACKET ATLAS COPCO T3

SAMPLING/PRODUCTION TESTING METHOD AND EQUIPMENT USED: DUAL TUBE REVERSE AIR

BOREHOLE DEPTH INTERVAL (FT-BGS - FT-BGS): 1270

START WATER LEVELS: START: END: LOGGER: A. 10 [illegible]

MAXIMUM DRAWDOWN DURING PUMPING:

RANGE AND AVERAGE DISCHARGE RATE:

TOTAL QUANTITY OF WATER DISCHARGED:

DISPOSITION OF DISCHARGE WATER:

MONITORING EQUIPMENT USED:

Date/ Time	Water Volume Discharged (gallons)	Elapsed Time of Discharge (minutes)	Flow Rate (gpm))	Water Level (ft BTOC)	Temp. (°C)	pH	Conductivity (µmhos/cm)	Turbidity (NTU)	Sand (ml/L)	Remarks (color, odor, sheen, sediment, etc.)
8/24/15 1255			30		25.7	7.67	1340	1000		light brown continuous cuttings, not clearing up. Too turbid. Call to Mike Dosser (EMWD).
1300			30		24.3	7.89	1380	350		
1400										Collected sample w 5 gal buckets will let settle then transfer to bottles

CH2MHILL

PROJECT NUMBER: 660204

WELL ID: EMWD-EX-PW01

Sheet 4 of 4

GROUNDWATER SAMPLING/PRODUCTION LOG

PROJECT: EMWD PERRIS EXPLORATORY BOREHOLE LOCATION: PERRIS, CA

DRILLING SUBCONTRACTOR: YELLOW JACKET BY ATLAS COPCO T3

SAMPLING/PRODUCTION TESTING METHOD AND EQUIPMENT USED:

BOREHOLE DEPTH INTERVAL (FT-BGS - FT-BGS): 200

START WATER LEVELS: START: END: LOGGER: A. WICKHAM

MAXIMUM DRAWDOWN DURING PUMPING:

RANGE AND AVERAGE DISCHARGE RATE:

TOTAL QUANTITY OF WATER DISCHARGED:

DISPOSITION OF DISCHARGE WATER:

MONITORING EQUIPMENT USED:

Date/ Time	Water Volume Discharged (gallons)	Elapsed Time of Discharge (minutes)	Flow Rate (gpm))	Water Level (ft BTOC)	Temp. (°C)	pH	Conductivity (µmhos/cm)	Turbidity (NTU)	Sand (ml/L)	Remarks (color, odor, sheen, sediment, etc.)
8/25/15 0930			40		22.0	6.40	1230	465		Light brown, turbid
0938			50		21.3	7.01	1200	721		too much sediment
0945			50		21.4	7.17	1220	1000+		to sampl.
0950			45		21.3	7.44	1060	1000+		
0957			45		21.2	7.75	1130	1000+		
1005			50		21.7	7.70	1070	1000+		
										Collect samples in 5 gal buckets to allow to settle.

CH2MHILL

PROJECT NUMBER: 662204

WELL ID: EMWD PX-PVD1

Sheet 6 of 7

GROUNDWATER SAMPLING/PRODUCTION LOG

PROJECT: EMWD PERRIS EXPLORATORY BOREHOLE LOCATION: PERRIS, CA

DRILLING SUBCONTRACTOR: YELLOW JACKET ATLAS COPCO T3

SAMPLING/PRODUCTION TESTING METHOD AND EQUIPMENT USED:

BOREHOLE DEPTH INTERVAL (FT-BGS - FT-BGS): 60

START WATER LEVELS: START: END: LOGGER: A. Wickstrom

MAXIMUM DRAWDOWN DURING PUMPING:

RANGE AND AVERAGE DISCHARGE RATE:

TOTAL QUANTITY OF WATER DISCHARGED:

DISPOSITION OF DISCHARGE WATER:

MONITORING EQUIPMENT USED:

Date/ Time	Water Volume Discharged (gallons)	Elapsed Time of Discharge (minutes)	Flow Rate (gpm))	Water Level (ft BTOC)	Temp. (°C)	pH	Conductivity (µmhos/cm)	Turbidity (NTU)	Sand (ml/L)	Remarks (color, odor, sheen, sediment, etc.)
8/26/15 1310			70		23.5					
1318			70		23.0	8.25	1390	1000+		
1327			70		21.7	8.40	1380	1000+		
1340			65		21.7	8.40	1400	1000+		
1345										GW samples collected in 5-gal buckets to settle.

Appendix B
Boring Log for Exploratory Borehole EMWD_EX_PV01

PROJECT NUMBER:	BORING NUMBER:
660204	EMWD_EX_PV01 SHEET 2 OF 12

SOIL BORING LOG

PROJECT : Eastern Municipal Water District Exploratory Borehole LOCATION : Perris, CA

ELEVATION : DRILLING CONTRACTOR : Yellow Jacket Drilling Services

DRILLING METHOD AND EQUIPMENT USED : Atlas Copco T3 Dual Tube Reverse Air Rotary - 6 1/2-inch Tricone Bit

WATER LEVELS : 52 ft bgs START : 8/21/15 11:10 END : 9/1/15 16:40 LOGGER : A. Wickham

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
60.0					**SILTY SAND (SM)** reddish yellow (7.5YR 6/6), 65% fine grained to medium grained sand, subangular, 35% fines, silt, trace gravel to 50 mm, granitic grains, quartz abundant, no reaction to HCl		1000-1009 8/24/15 Drilling Rate = 1.1 ft/min
65							
70	70.0				- 70% fine to medium sand, subangular; 30% fines, silt, trace clay, trace coarse sand, granitic grains, abundant quartz, no HCl reaction		1009-1014 First encountered groundwater at 80.0' bgs <1 gpm (insufficient volume for sample) 8/24/15 Drilling Rate = 2 ft/min
75							
80	80.0				- 80% sand, fine grained to medium grained, subangular, 20% fines, silt, granitics, mafics, quartz, no HCl reaction		1028-1032 8/24/15 Drilling Rate = 2.5 ft/min
85							
90	90.0				- 80% sand, fine grained to medium grained, subangular, 20% fines, silt, granitics, mafics, quartz, no HCl reaction		1032-1037 Pause to airlift, hole collapsed 8/24/15, estimate flow rate ~5-10 gpm Drilling Rate = 2 ft/min
95							
100	100.0				**WELL GRADED SAND (SW)** dark yellowish brown (10YR 4/4), 95% fine grained to medium grained sand, some 5-10% coarse grained sand (to 50 mm), 5% silt, granitic, biotite, quartz, no reaction to HCl		Drilling Rate = 1.3 ft/min
105							
110	110.0				- dark yellowish brown (10YR 4/4), 95% fine grained to medium grained sand, some 7-12% coarse grained sand (to 50 mm), 5% silt, granitic, biotite, quartz, rock fragments (~8 mm), no reaction to HCl		1233-1237 Pause to airlift, estimated flow ~30 gpm 8/24/15 Collected sample EMWD_EX_PV01_100-120 Drilling Rate = 2.5 ft/min
115							
120							

PROJECT NUMBER:	BORING NUMBER:
660204	EMWD_EX_PV01 SHEET 4 OF 12

SOIL BORING LOG

PROJECT : Eastern Municipal Water District Exploratory Borehole LOCATION : Perris, CA

ELEVATION : DRILLING CONTRACTOR : Yellow Jacket Drilling Services

DRILLING METHOD AND EQUIPMENT USED : Atlas Copco T3 Dual Tube Reverse Air Rotary - 6 1/2-inch Tricone Bit

WATER LEVELS : 52 ft bgs START : 8/21/15 11:10 END : 9/1/15 16:40 LOGGER : A. Wickham

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
180.0					- olive brown (2.5YR 4/3), subangular, trace (1-5%) gravel to 5 mm, granitic		1535-1542 8/24/15 Drilling Rate = 1.4 ft/min
185							
190	190.0				- weak red (5YR 4/2), subangular, <10% fines, silt, granitic, biotite		1542-1551 8/24/15 Drilling Rate = 1.1 ft/min
195							
200	200.0				- reddish brown (5YR 4/3), 1-5% gravel to 5 mm, 5-7% fines, silt, granitic, quartz, biotite		1025-1032 8/25/15 - Paused to airlift Estimated flow rate ~40-50 gpm Collected sample EMWD_EX_PV01_180-200 Drilling Rate = 1.4 ft/min
205							
210	210.0				- 1-5% fines, silt		1032-1041 8/25/15 Drilling Rate = 1.1 ft/min
215							
220	220.0				**POORLY GRADED SAND WITH SILT (SP-SM)** reddish brown (5YR 4/4), fine to medium sand, subangular, 10-15% fines, silt, granitic, metamorphic, abundant biotite		1048-1057 8/25/15 Drilling Rate = 1.1 ft/min
225							
230	230.0				**POORLY GRADED SAND (SP)** reddish brown (5YR 4/3), fine grained to medium grained, subangular, ~5% fines, no gravel, granitic, abundant quartz and biotite		1057-1108 8/25/15 Pause to airlift and sample Estimated flow rate ~60-65 gpm Collected sample EMWD_PV01_230-240 Drilling Rate = 0.9 ft/min
235							
240							

PROJECT NUMBER:	BORING NUMBER:
660204	EMWD_EX_PV01 SHEET 6 OF 12

SOIL BORING LOG

PROJECT : Eastern Municipal Water District Exploratory Borehole LOCATION : Perris, CA

ELEVATION : DRILLING CONTRACTOR : Yellow Jacket Drilling Services

DRILLING METHOD AND EQUIPMENT USED : Atlas Copco T3 Dual Tube Reverse Air Rotary - 6 1/2-inch Tricone Bit

WATER LEVELS : 52 ft bgs START : 8/21/15 11:10 END : 9/1/15 16:40 LOGGER : A. Wickham

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
300.0					**WELL GRADED SAND (SW)** reddish brown (5YR 4/3), fine grained to coarse grained sand, subangular to subrounded, ~10% gravel to 12 mm, subangular, granitic biotite, feldspar, quartz		1421-1429 8/25/15 Drilling Rate = 1.3 ft/min
305							
310	310.0						1429-1437 8/25/15 Paused to airlift and sample Estimated flow rate ~65-72.5 gpm Collected Sample EMWD_EX_PV01_300-320 Drilling Rate = 1.3 ft/min
315							
320	320.0				- 5% gravel to 5 mm		1520-1529 Drilling Rate = 1.1 ft/min
325							
330	330.0				- primarily fine grained to medium grained, some (5-12%) coarse grained sand		1529-1538 Drilling Rate = 1.1 ft/min
335							
340	340.0				**POORLY GRADED SAND (SP)** reddish brown (5YR 4/4), fine grained and medium grained sand, subangular, some (5%) coarse grained sand, granitic		Switch to direct mud rotary drilling 1135-1200 8/28/15 Drilling Rate = 0.4 ft/min
345							
350	350.0				- <5% fines, silt		1200-1220 8/28/15 Drilling Rate = 0.5 ft/min
355							
360							

PROJECT NUMBER:	BORING NUMBER:
660204	EMWD_EX_PV01 SHEET 8 OF 12

SOIL BORING LOG

PROJECT : Eastern Municipal Water District Exploratory Borehole LOCATION : Perris, CA

ELEVATION : DRILLING CONTRACTOR : Yellow Jacket Drilling Services

DRILLING METHOD AND EQUIPMENT USED : Atlas Copco T3 Dual Tube Reverse Air Rotary - 6 1/2-inch Tricone Bit

WATER LEVELS : 52 ft bgs START : 8/21/15 11:10 END : 9/1/15 16:40 LOGGER : A. Wickham

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
420.0					- <3% fines, silt, granitic, abundant biotite		1450-1508 8/28/15 Drilling Rate = 0.6 ft/min
425							
430	430.0						1508-1525 8/28/15 Drilling Rate = 0.6 ft/min
435							
440	440.0				- reddish brown (5YR 4/4), predominately medium grained, <10% fine grained, <5% coarse grained, subangular		1530-1545 8/28/15 Drilling Rate = 0.7 ft/min
445							
450	450.0				- reddish brown (5YR 5/4), fine grained and medium grained, subangular, granitic, abundant mica		1545-1605 8/28/15 Drilling Rate = 0.5 ft/min
455							
460	460.0				**WELL GRADED SAND (SW)** brown (7.5YR 4/3), fine grained to coarse grained, subangular, granitic, <5% fines, silt		0815-0825 8/31/15 Drilling Rate = 1 ft/min
465							
470	470.0						0825-0840 8/31/15 Drilling Rate = 0.7 ft/min
475							
480							

PROJECT NUMBER:	BORING NUMBER:
660204	EMWD_EX_PV01 SHEET 10 OF 12

SOIL BORING LOG

PROJECT : Eastern Municipal Water District Exploratory Borehole LOCATION : Perris, CA

ELEVATION : DRILLING CONTRACTOR : Yellow Jacket Drilling Services

DRILLING METHOD AND EQUIPMENT USED : Atlas Copco T3 Dual Tube Reverse Air Rotary - 6 1/2-inch Tricone Bit

WATER LEVELS : 52 ft bgs START : 8/21/15 11:10 END : 9/1/15 16:40 LOGGER : A. Wickham

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
540.0					- grayish brown, weathered plagioclase to clay		1230-1255 8/31/15 Chattering Drilling Rate = 0.4 ft/min
545							
550	550.0				- angular to subangular		1255-1333 8/31/15 Chattering Drilling Rate = 0.3 ft/min
555							
560	560.0						1338-1408 8/31/15 Drilling Rate = 0.3 ft/min
565							
570	570.0						1408-1445 8/31/15 Drilling Rate = 0.3 ft/min
575							
580	580.0						1450-1545 Drilling Rate = 0.2 ft/min
585							
590	590.0						1545-1615 Drilling Rate = 0.3 ft/min
595							
600							

PROJECT NUMBER:	BORING NUMBER:
660204	EMWD_EX_PV01 SHEET 12 OF 12

SOIL BORING LOG

PROJECT : Eastern Municipal Water District Exploratory Borehole LOCATION : Perris, CA

ELEVATION : DRILLING CONTRACTOR : Yellow Jacket Drilling Services

DRILLING METHOD AND EQUIPMENT USED : Atlas Copco T3 Dual Tube Reverse Air Rotary - 6 1/2-inch Tricone Bit

WATER LEVELS : 52 ft bgs START : 8/21/15 11:10 END : 9/1/15 16:40 LOGGER : A. Wickham

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
660.0					- same as above		1305-1400 Drilling Rate = 0.2 ft/min
665							
670	670.0						1400-1450 Drilling Rate = 0.2 ft/min
675							
680	680.0				**GRANITIC BEDROCK** increase in platy, angular rock and mineral fragments		1500-1600 Harder drilling Drilling Rate = 0.13 ft/min
685							
690	690.0						1620-1640 9/1/15 0730-0830 9/2/15 Drilling Rate = 0.06 ft/min
695	695.0				Bottom of Boring at 695.0 ft bgs on 9/1/15 16:40		TD = 695.0' bgs Drill cuttings circulated primarily using compressed air; however, a mixture of potable water and EZ-Mud® (liquid polymer emulsion, Baroid Industrial Drilling Products) was periodically circulated in order to assist with proper circulation and dust prevention. Mud rotary drilling used Cetco Super Gel-X mud Performed downhole borehole geophysical logging. Abandoned borehole by pressure grouting via tremmie pipe to ground surface using a cement with approximately 5% bentonite mixture, and topped off with bentonite chips, hydrated.
700							
705							
710							
715							
720							

Table C-1. Summary of Sample Identifiers
Exploratory Borehole EMWD_EX_PV01, Perris, California

Sample Depth (feet bgs)	EMWD Sample ID	Babcock Sample ID
120	EMWD_EX_PV01_100-120	E150825046 SPEC ENG OPS SAMPLE
160	EMWD_EX_PV01_140-160	E150825049 SPEC ENG OPS SAMPLE
200	EMWD_EX_PV01_180-200	E150826015 SPEC ENG OPS SAMPLE
240	EMWD_EX_PV01_220-240	E150826018 SPEC ENG OPS SAMPLE
280	EMWD_EX_PV01_260-280	E150826019 SPEC ENG OPS SAMPLE
300	EMWD_EX_PV01_300-320	E150826022 SPEC ENG OPS SAMPLE

bgs – below ground surface

Analytical Results Report

EASTERN MUNICIPAL WATER DISTRICT
SINCE 1950

Lab ID:	E150825047
Sample ID:	EMWD_EX_PV01_100-120
Company:	ENGINEERING
Profile:	Drill Well
Collect Date:	8/24/2015
Collected By:	A Wickham (CH2M)
Received Date:	8/25/2015

Parameter	Result	Units	Report Limit	Analyzed	By	Method
Sodium	170	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Strontium	540	ug/L	0.060	09/09/15	CG	ICP-MS Metals, EPA 200.8
Antimony	0.076	ug/L	0.035	09/09/15	CG	ICP-MS Metals, EPA 200.8
Beryllium	0.14	ug/L	0.060	09/09/15	CG	ICP-MS Metals, EPA 200.8
Cadmium	0.032	ug/L	0.026	09/09/15	CG	ICP-MS Metals, EPA 200.8
Chromium (Total)	2.5	ug/L	0.046	09/09/15	CG	ICP-MS Metals, EPA 200.8
Cobalt	2.7	ug/L	0.015	09/09/15	CG	ICP-MS Metals, EPA 200.8
Lead	0.82	ug/L	0.0050	09/09/15	CG	ICP-MS Metals, EPA 200.8
Molybdenum	14	ug/L	0.028	09/09/15	CG	ICP-MS Metals, EPA 200.8
Nickel	2.7	ug/L	0.060	09/09/15	CG	ICP-MS Metals, EPA 200.8
Silver	0.019	ug/L	0.0080	09/09/15	CG	ICP-MS Metals, EPA 200.8
Tin	0.28	ug/L	0.030	09/09/15	CG	ICP-MS Metals, EPA 200.8
Thallium	0.064	ug/L	0.016	09/09/15	CG	ICP-MS Metals, EPA 200.8
Vanadium	19	ug/L	0.20	09/09/15	CG	ICP-MS Metals, EPA 200.8
Zinc	14	ug/L	0.70	09/09/15	CG	ICP-MS Metals, EPA 200.8
BIOLOGICALS						
Total Coliform	>200	MPN/100mL		08/25/15	SW	MMO-HPC, SM 9223 & SM 9215
E. coli	<1	MPN/100mL		08/25/15	SW	MMO-HPC, SM 9223 & SM 9215
HPC Result	>740	CFU/mL		08/25/15	SW	MMO-HPC, SM 9223 & SM 9215
PHYSICAL PARMS						
Total Organic Carbon (TOC)	2.48	mg/L	0.02	08/27/15	KL	TOC, SM 5310C
EC - Specific Conductance	1690	umhos/cm	1	08/25/15	CG	Conductivity, SM 2510B
pH, Laboratory	8.1	pH unit	1	08/25/15	CG	pH (Lab), SM 4500H-B
Alkalinity, Total as CaCO3	260	mg/L	4	08/25/15	CG	Alk Spec-L, SM 2320B

Suzanne Watson

Analytical Results Report

EASTERN MUNICIPAL WATER DISTRICT
SINCE 1950

Lab ID:	E150825048
Sample ID:	EMWD_EX_PV01_140-160
Company:	ENGINEERING
Profile:	Drill Well
Collect Date:	8/24/2015
Collected By:	A Wickham (CH2M)
Received Date:	8/25/2015

Parameter	Result	Units	Report Limit	Analyzed	By	Method
GENERAL MINERAL						
NOX	5.0	mg/L	0.1	08/25/15	AB	NO2 NO3 NOX, EPA 353.2
Fluoride	1.6	mg/L	0.1	08/27/15	DW	Anions, EPA 300.0
Nitrite as N	<0.1	mg/L	0.1	08/25/15	AB	NO2 NO3 NOX, EPA 353.2
Chloride	260	mg/L	2.0	08/27/15	DW	Anions, EPA 300.0
Sulfate	97	mg/L	0.5	08/27/15	DW	Anions, EPA 300.0
Nitrate as N	4.9	mg/L	0.1	08/25/15	AB	NO2 NO3 NOX, EPA 353.2
Nitrate (NO3)	22	mg/L	0.40	08/25/15	AB	NO2 NO3 NOX, EPA 353.2
Ammonia as N	<0.20	mg/L	0.20	08/25/15	AB	Ammonia, EPA 350.1
Total Inorganic Nitrogen	5.1	mg/L	0.70	08/25/15	AB	Ammonia, EPA 350.1
METALS						
Aluminum	4840	ug/L	1.5	09/09/15	CG	ICP-MS Metals, EPA 200.8
Mercury	<0.15	ug/L	0.15	09/02/15	CG	Mercury, EPA 245.1
Arsenic	1.6	ug/L	1.5	09/09/15	CG	ICP-MS Metals, EPA 200.8
Barium	130	ug/L	0.11	09/09/15	CG	ICP-MS Metals, EPA 200.8
Boron	1190	ug/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Calcium	94	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Hardness	340	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Copper	<2.9	ug/L	2.9	09/09/15	CG	ICP-MS Metals, EPA 200.8
Iron	6720	ug/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Magnesium	27	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Manganese	120	ug/L	2.5	09/09/15	CG	ICP-MS Metals, EPA 200.8
Total Phosphorus	0.11	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Potassium	4.8	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Selenium	1.6	ug/L	1.1	09/09/15	CG	ICP-MS Metals, EPA 200.8
Silica	47	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8

Suzanne Watson

Analytical Results Report

EASTERN MUNICIPAL WATER DISTRICT
SINCE 1950

Lab ID:	E150825048
Sample ID:	EMWD_EX_PV01_140-160
Company:	ENGINEERING
Profile:	Drill Well
Collect Date:	8/24/2015
Collected By:	A Wickham (CH2M)
Received Date:	8/25/2015

Parameter	Result	Units	Report Limit	Analyzed	By	Method
Hydroxide (OH)	<4	mg/L	4	08/25/15	CG	Alk Spec-L, SM 2320B
Carbonate (CO3)	<4	mg/L	4	08/25/15	CG	Alk Spec-L, SM 2320B
Bicarbonate (HCO3)	300	mg/L	4	08/25/15	CG	Alk Spec-L, SM 2320B
Total Dissolved Solids	860	mg/L	40	08/26/15	KL	TDS, SM 2540C
Color - Apparent	10	units	2.5	08/26/15	NS	PT, Physcial Testing
Odor at 60 degrees C	1.0	TON		08/26/15	NS	PT, Physcial Testing
Turbidity, Laboratory	5.8	NTU	0.1	08/26/15	NS	PT, Physcial Testing

Suzanne Watson

Analytical Results Report

EASTERN MUNICIPAL WATER DISTRICT
SINCE 1950

Lab ID:	E150826016
Sample ID:	EMWD_EX_PV01_180-200
Company:	ENGINEERING
Profile:	Drill Well
Collect Date:	8/25/2015
Collected By:	A Wickham
Received Date:	8/26/2015

Parameter	Result	Units	Report Limit	Analyzed	By	Method
Molybdenum	17	ug/L	0.060	09/09/15	CG	ICP-MS Metals, EPA 200.8
Nickel	3.6	ug/L	0.21	09/09/15	CG	ICP-MS Metals, EPA 200.8
Total Phosphorus	0.079	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Potassium	2.8	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Selenium	<1.1	ug/L	1.1	09/09/15	CG	ICP-MS Metals, EPA 200.8
Silica	39	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Silver	<0.034	ug/L	0.034	09/09/15	CG	ICP-MS Metals, EPA 200.8
Sodium	160	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Strontium	430	ug/L	0.040	09/09/15	CG	ICP-MS Metals, EPA 200.8
Tin	0.11	ug/L	0.060	09/09/15	CG	ICP-MS Metals, EPA 200.8
Thallium	<0.033	ug/L	0.033	09/09/15	CG	ICP-MS Metals, EPA 200.8
Vanadium	18	ug/L	17	09/09/15	CG	ICP-MS Metals, EPA 200.8
Zinc	7.1	ug/L	2.8	09/09/15	CG	ICP-MS Metals, EPA 200.8
Boron	1070	ug/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Hardness	290	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
BIOLOGICALS						
Total Coliform	3	MPN/100mL		08/26/15	NS	MMO-HPC, SM 9223 & SM 9215
E. coli	<1	MPN/100mL		08/26/15	NS	MMO-HPC, SM 9223 & SM 9215
HPC Result	740	CFU/mL		08/26/15	NS	MMO-HPC, SM 9223 & SM 9215
PHYSICAL PARMS						
Total Organic Carbon (TOC)	1.07	mg/L	0.02	08/27/15	KL	TOC, SM 5310C
EC - Specific Conductance	1320	umhos/cm	1	08/26/15	CG	Conductivity, SM 2510B
pH, Laboratory	7.8	pH unit	1	08/26/15	CG	pH (Lab), SM 4500H-B
Alkalinity, Total as CaCO3	260	mg/L	4	08/26/15	CG	Alk Spec-L, SM 2320B

Suzanne Watson

Analytical Results Report

EASTERN MUNICIPAL WATER DISTRICT
SINCE 1950

Lab ID:	E150826017
Sample ID:	EMWD_EX_PV01_220-240
Company:	ENGINEERING
Profile:	Drill Well
Collect Date:	8/25/2015
Collected By:	A Wickham
Received Date:	8/26/2015

Parameter	Result	Units	Report Limit	Analyzed	By	Method
GENERAL MINERAL						
NOX	4.9	mg/L	0.1	08/26/15	AB	NO2 NO3 NOX, EPA 353.2
Fluoride	1.5	mg/L	0.1	08/27/15	DW	Anions, EPA 300.0
Nitrite as N	<0.1	mg/L	0.1	08/26/15	AB	NO2 NO3 NOX, EPA 353.2
Chloride	290	mg/L	2.0	08/27/15	DW	Anions, EPA 300.0
Sulfate	94	mg/L	0.5	08/27/15	DW	Anions, EPA 300.0
Nitrate as N	4.8	mg/L	0.1	08/26/15	AB	NO2 NO3 NOX, EPA 353.2
Nitrate (NO3)	21	mg/L	0.40	08/26/15	AB	NO2 NO3 NOX, EPA 353.2
Ammonia as N	<0.20	mg/L	0.20	08/26/15	AB	Ammonia, EPA 350.1
Total Inorganic Nitrogen	5.0	mg/L	0.70	08/26/15	AB	Ammonia, EPA 350.1
METALS						
Aluminum	1670	ug/L	1.5	09/09/15	CG	ICP-MS Metals, EPA 200.8
Mercury	<0.15	ug/L	0.15	09/02/15	CG	Mercury, EPA 245.1
Antimony	0.086	ug/L	0.035	09/09/15	CG	ICP-MS Metals, EPA 200.8
Arsenic	<1.5	ug/L	1.5	09/09/15	CG	ICP-MS Metals, EPA 200.8
Barium	170	ug/L	0.11	09/09/15	CG	ICP-MS Metals, EPA 200.8
Beryllium	<0.060	ug/L	0.060	09/09/15	CG	ICP-MS Metals, EPA 200.8
Cadmium	<0.090	ug/L	0.090	09/09/15	CG	ICP-MS Metals, EPA 200.8
Calcium	100	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Chromium (Total)	2.0	ug/L	0.32	09/09/15	CG	ICP-MS Metals, EPA 200.8
Cobalt	2.1	ug/L	0.10	09/09/15	CG	ICP-MS Metals, EPA 200.8
Copper	<2.9	ug/L	2.9	09/09/15	CG	ICP-MS Metals, EPA 200.8
Iron	1960	ug/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Lead	0.32	ug/L	0.025	09/09/15	CG	ICP-MS Metals, EPA 200.8
Magnesium	28	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Manganese	46	ug/L	2.5	09/09/15	CG	ICP-MS Metals, EPA 200.8

Suzanne Watson

Analytical Results Report

EASTERN MUNICIPAL WATER DISTRICT
SINCE 1950

Lab ID:	E150826017
Sample ID:	EMWD_EX_PV01_220-240
Company:	ENGINEERING
Profile:	Drill Well
Collect Date:	8/25/2015
Collected By:	A Wickham
Received Date:	8/26/2015

Parameter	Result	Units	Report Limit	Analyzed	By	Method
Hydroxide (OH)	<4	mg/L	4	08/26/15	CG	Alk Spec-L, SM 2320B
Carbonate (CO3)	<4	mg/L	4	08/26/15	CG	Alk Spec-L, SM 2320B
Bicarbonate (HCO3)	300	mg/L	4	08/26/15	CG	Alk Spec-L, SM 2320B
Total Dissolved Solids	880	mg/L	40	08/26/15	KL	TDS, SM 2540C
Color - Apparent	150	units	2.5	08/26/15	NS	PT, Physcial Testing
Odor at 60 degrees C	1.0	TON		08/26/15	NS	PT, Physcial Testing
Turbidity, Laboratory	69	NTU	0.1	08/26/15	NS	PT, Physcial Testing

Suzanne Watson

Analytical Results Report

EASTERN MUNICIPAL WATER DISTRICT
SINCE 1950

Lab ID:	E150826020
Sample ID:	EMWD_EX_PV01_260-280
Company:	ENGINEERING
Profile:	Drill Well
Collect Date:	8/25/2015
Collected By:	A Wickham
Received Date:	8/26/2015

Parameter	Result	Units	Report Limit	Analyzed	By	Method
Molybdenum	15	ug/L	0.060	09/09/15	CG	ICP-MS Metals, EPA 200.8
Nickel	3.4	ug/L	0.21	09/09/15	CG	ICP-MS Metals, EPA 200.8
Total Phosphorus	0.096	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Potassium	3.1	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Selenium	1.3	ug/L	1.1	09/09/15	CG	ICP-MS Metals, EPA 200.8
Silica	39	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Silver	<0.034	ug/L	0.034	09/09/15	CG	ICP-MS Metals, EPA 200.8
Sodium	170	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Strontium	560	ug/L	0.040	09/09/15	CG	ICP-MS Metals, EPA 200.8
Tin	0.14	ug/L	0.060	09/09/15	CG	ICP-MS Metals, EPA 200.8
Thallium	<0.033	ug/L	0.033	09/09/15	CG	ICP-MS Metals, EPA 200.8
Vanadium	18	ug/L	17	09/09/15	CG	ICP-MS Metals, EPA 200.8
Zinc	7.7	ug/L	2.8	09/09/15	CG	ICP-MS Metals, EPA 200.8
Boron	1150	ug/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Hardness	380	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
BIOLOGICALS						
Total Coliform	<1	MPN/100mL		08/26/15	NS	MMO-HPC, SM 9223 & SM 9215
E. coli	<1	MPN/100mL		08/26/15	NS	MMO-HPC, SM 9223 & SM 9215
HPC Result	>740	CFU/mL		08/26/15	NS	MMO-HPC, SM 9223 & SM 9215
PHYSICAL PARMS						
Total Organic Carbon (TOC)	1.01	mg/L	0.02	08/27/15	KL	TOC, SM 5310C
EC - Specific Conductance	1530	umhos/cm	1	08/26/15	CG	Conductivity, SM 2510B
pH, Laboratory	7.7	pH unit	1	08/26/15	CG	pH (Lab), SM 4500H-B
Alkalinity, Total as CaCO3	250	mg/L	4	08/26/15	CG	Alk Spec-L, SM 2320B

Suzanne Watson

Analytical Results Report

EASTERN MUNICIPAL WATER DISTRICT
SINCE 1950

Lab ID:	E150826021
Sample ID:	EMWD_EX_PV01_300-320
Company:	ENGINEERING
Profile:	Drill Well
Collect Date:	8/25/2015
Collected By:	A Wickham
Received Date:	8/26/2015

Parameter	Result	Units	Report Limit	Analyzed	By	Method
GENERAL MINERAL						
NOX	4.5	mg/L	0.1	08/26/15	AB	NO2 NO3 NOX, EPA 353.2
Fluoride	1.4	mg/L	0.1	08/27/15	DW	Anions, EPA 300.0
Nitrite as N	<0.1	mg/L	0.1	08/26/15	AB	NO2 NO3 NOX, EPA 353.2
Chloride	270	mg/L	2.0	08/27/15	DW	Anions, EPA 300.0
Sulfate	90	mg/L	0.5	08/27/15	DW	Anions, EPA 300.0
Nitrate as N	4.4	mg/L	0.1	08/26/15	AB	NO2 NO3 NOX, EPA 353.2
Nitrate (NO3)	19	mg/L	0.40	08/26/15	AB	NO2 NO3 NOX, EPA 353.2
Ammonia as N	<0.20	mg/L	0.20	08/26/15	AB	Ammonia, EPA 350.1
Total Inorganic Nitrogen	4.6	mg/L	0.70	08/26/15	AB	Ammonia, EPA 350.1
METALS						
Aluminum	1210	ug/L	1.5	09/09/15	CG	ICP-MS Metals, EPA 200.8
Mercury	<0.15	ug/L	0.15	09/02/15	CG	Mercury, EPA 245.1
Antimony	<0.035	ug/L	0.035	09/09/15	CG	ICP-MS Metals, EPA 200.8
Arsenic	<1.5	ug/L	1.5	09/09/15	CG	ICP-MS Metals, EPA 200.8
Barium	130	ug/L	0.11	09/09/15	CG	ICP-MS Metals, EPA 200.8
Beryllium	0.079	ug/L	0.060	09/09/15	CG	ICP-MS Metals, EPA 200.8
Cadmium	<0.090	ug/L	0.090	09/09/15	CG	ICP-MS Metals, EPA 200.8
Calcium	95	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Chromium (Total)	1.2	ug/L	0.32	09/09/15	CG	ICP-MS Metals, EPA 200.8
Cobalt	1.7	ug/L	0.10	09/09/15	CG	ICP-MS Metals, EPA 200.8
Copper	<2.9	ug/L	2.9	09/09/15	CG	ICP-MS Metals, EPA 200.8
Iron	1530	ug/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Lead	0.19	ug/L	0.025	09/09/15	CG	ICP-MS Metals, EPA 200.8
Magnesium	24	mg/L		09/09/15	CG	ICP-MS Metals, EPA 200.8
Manganese	35	ug/L	2.5	09/09/15	CG	ICP-MS Metals, EPA 200.8

Suzanne Watson

Analytical Results Report

Lab ID:	E150826021
Sample ID:	EMWD_EX_PV01_300-320
Company:	ENGINEERING
Profile:	Drill Well
Collect Date:	8/25/2015
Collected By:	A Wickham
Received Date:	8/26/2015

Parameter	Result	Units	Report Limit	Analyzed	By	Method
Hydroxide (OH)	<4	mg/L	4	08/26/15	CG	Alk Spec-L, SM 2320B
Carbonate (CO3)	<4	mg/L	4	08/26/15	CG	Alk Spec-L, SM 2320B
Bicarbonate (HCO3)	280	mg/L	4	08/26/15	CG	Alk Spec-L, SM 2320B
Total Dissolved Solids	870	mg/L	40	08/26/15	KL	TDS, SM 2540C
Color - Apparent	75	units	2.5	08/26/15	NS	PT, Physcial Testing
Odor at 60 degrees C	1.0	TON		08/26/15	NS	PT, Physcial Testing
Turbidity, Laboratory	53	NTU	0.1	08/26/15	NS	PT, Physcial Testing

Suzanne Watson

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 10-Sep-2015

Analytical Report: Page 2 of 8
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2511

Received on Ice (Y/N): Yes Temp: 3 °C

Laboratory Reference Number
B5H2511-01

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
E150825046 SPEC ENG OPS SAMPLE	Water	08/24/15 14:00	08/25/15 15:00

Analyte(s)	Result	RDL	MDL	Units	Method	Analysis Date	Analyst	Flag
Surfactants								
MBAS	ND	0.08	0.08	mg/L	SM 5540C	08/25/15 20:30	miv	
General Inorganics								
Cyanide	ND	100	4.9	ug/L	SM 4500CN E	08/28/15 23:44	lfs	
Perchlorate	ND	4.0	0.49	ug/L	EPA 314.0	08/27/15 21:40	ams	
Metals and Metalloids								
Hexavalent Chromium	0.048	1.0	0.013	ug/L	EPA 218.6	09/01/15 02:32	ara	J
EDB and DBCP by EPA 504								
Ethylene dibromide	ND	0.020	0.0089	ug/L	EPA 504.1	09/01/15 01:34	jhr	
Dibromochloropropane	ND	0.010	0.0029	ug/L	EPA 504.1	09/01/15 01:34	jhr	
Chlorinated Herbicides by EPA 515.3								
Bentazon	ND	2.0	0.14	ug/L	EPA 515.3	08/28/15 23:11	acw	
2,4-D	ND	10	0.17	ug/L	EPA 515.3	08/28/15 23:11	acw	
Dalapon	ND	10	1.2	ug/L	EPA 515.3	08/28/15 23:11	acw	
Dinoseb	ND	2.0	0.36	ug/L	EPA 515.3	08/28/15 23:11	acw	
Pentachlorophenol	ND	0.20	0.14	ug/L	EPA 515.3	08/28/15 23:11	acw	
Picloram	ND	1.0	0.17	ug/L	EPA 515.3	08/28/15 23:11	acw	
2,4,5-TP Silvex	ND	1.0	0.15	ug/L	EPA 515.3	08/28/15 23:11	acw	
Surrogate: DCAA	109	% 70-130			EPA 515.3	08/28/15 23:11	acw	
Volatile Organic Compounds by EPA 524.2								
1,1,1-Trichloroethane	ND	0.50	0.12	ug/L	EPA 524.2	09/02/15 00:23	EEC	
1,1,2,2-Tetrachloroethane	ND	0.50	0.29	ug/L	EPA 524.2	09/02/15 00:23	EEC	
1,1,2-Trichloroethane	ND	0.50	0.31	ug/L	EPA 524.2	09/02/15 00:23	EEC	
1,1-Dichloroethane	ND	0.50	0.098	ug/L	EPA 524.2	09/02/15 00:23	EEC	
1,1-Dichloroethene	ND	0.50	0.12	ug/L	EPA 524.2	09/02/15 00:23	EEC	
1,2,4-Trichlorobenzene	ND	0.50	0.34	ug/L	EPA 524.2	09/02/15 00:23	EEC	
1,2-Dichlorobenzene	ND	0.50	0.20	ug/L	EPA 524.2	09/02/15 00:23	EEC	
1,2-Dichloroethane	ND	0.50	0.21	ug/L	EPA 524.2	09/02/15 00:23	EEC	
1,2-Dichloropropane	ND	0.50	0.19	ug/L	EPA 524.2	09/02/15 00:23	EEC	
1,3-Dichloropropene (total)	ND	0.50	0.30	ug/L	EPA 524.2	09/02/15 00:23	EEC	
1,4-Dichlorobenzene	ND	0.50	0.072	ug/L	EPA 524.2	09/02/15 00:23	EEC	
Benzene	ND	0.50	0.14	ug/L	EPA 524.2	09/02/15 00:23	EEC	
Carbon Tetrachloride	ND	0.50	0.15	ug/L	EPA 524.2	09/02/15 00:23	EEC	
Chlorobenzene	ND	0.50	0.23	ug/L	EPA 524.2	09/02/15 00:23	EEC	
cis-1,2-Dichloroethene	ND	0.50	0.18	ug/L	EPA 524.2	09/02/15 00:23	EEC	
Dichlorodifluoromethane	ND	0.50	0.18	ug/L	EPA 524.2	09/02/15 00:23	EEC	
Ethyl tert-Butyl Ether	ND	3.0	0.29	ug/L	EPA 524.2	09/02/15 00:23	EEC	

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CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 10-Sep-2015

Analytical Report: Page 4 of 8
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2511

Received on Ice (Y/N): Yes Temp: 3 °C

Laboratory Reference Number
B5H2511-01

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
E150825046 SPEC ENG OPS SAMPLE	Water	08/24/15 14:00	08/25/15 15:00

Analyte(s)	Result	RDL	MDL	Units	Method	Analysis Date	Analyst	Flag
Carbamates by EPA 531.2								
Carbofuran	ND	5.0	0.43	ug/L	EPA 531.2	08/31/15 15:45	DIS	
Oxamyl	ND	20	0.24	ug/L	EPA 531.2	08/31/15 15:45	DIS	
Endothall by EPA 548.1								
Endothall	ND	45	31	ug/L	EPA 548.1	08/28/15 01:56	JHR	
Organochlorine Pesticides and PCBs by EPA 505								
Endrin	ND	0.10	0.0035	ug/L	EPA 505	08/28/15 07:51	acw	
Heptachlor	ND	0.010	0.0052	ug/L	EPA 505	08/28/15 07:51	acw	NMout
Heptachlor Epoxide	ND	0.010	0.0023	ug/L	EPA 505	08/28/15 07:51	acw	
Hexachlorobenzene	ND	0.50	0.0027	ug/L	EPA 505	08/28/15 07:51	acw	NMout
Hexachlorocyclopentadiene	ND	1.0	0.0061	ug/L	EPA 505	08/28/15 07:51	acw	NMout
Lindane	ND	0.20	0.0026	ug/L	EPA 505	08/28/15 07:51	acw	
Methoxychlor	ND	10	0.013	ug/L	EPA 505	08/28/15 07:51	acw	NMout
Toxaphene	ND	1.0	0.33	ug/L	EPA 505	08/28/15 07:51	acw	
Chlordane	ND	0.10	0.050	ug/L	EPA 505	09/01/15 17:40	acw	
Polychlorinated Biphenyls (Total PCB's)	ND	0.50	0.50	ug/L	EPA 505	08/28/15 07:51	acw	

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CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 10-Sep-2015

Analytical Report: Page 6 of 8
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2511

Received on Ice (Y/N): Yes Temp: 3 °C

Laboratory Reference Number
B5H2511-02

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
E150825049 SPEC ENG OPS SAMPLE	Water	08/24/15 14:00	08/25/15 15:00

Analyte(s)	Result	RDL	MDL	Units	Method	Analysis Date	Analyst	Flag
Volatile Organic Compounds by EPA 524.2								
Methyl tert butyl Ether	ND	3.0	0.43	ug/L	EPA 524.2	09/02/15 00:53	EEC	
Methylene Chloride	ND	0.50	0.15	ug/L	EPA 524.2	09/02/15 00:53	EEC	
Styrene	ND	0.50	0.22	ug/L	EPA 524.2	09/02/15 00:53	EEC	
tert-Amyl Methyl Ether	ND	3.0	0.37	ug/L	EPA 524.2	09/02/15 00:53	EEC	
tert-Butyl alcohol	ND	5.0	2.1	ug/L	EPA 524.2	09/02/15 00:53	EEC	
Tetrachloroethene	ND	0.50	0.23	ug/L	EPA 524.2	09/02/15 00:53	EEC	
Toluene	ND	0.50	0.22	ug/L	EPA 524.2	09/02/15 00:53	EEC	
trans-1,2-Dichloroethene	ND	0.50	0.10	ug/L	EPA 524.2	09/02/15 00:53	EEC	
Trichloroethene	ND	0.50	0.25	ug/L	EPA 524.2	09/02/15 00:53	EEC	
Trichlorofluoromethane	ND	5.0	0.16	ug/L	EPA 524.2	09/02/15 00:53	EEC	
Trichlorotrifluoroethane	ND	10	0.22	ug/L	EPA 524.2	09/02/15 00:53	EEC	
Vinyl Chloride	ND	0.50	0.13	ug/L	EPA 524.2	09/02/15 00:53	EEC	
Xylenes (Total)	ND	0.50	0.41	ug/L	EPA 524.2	09/02/15 00:53	EEC	
Surrogate: 1,2-Dichloroethane-d4	104	% 50-150			EPA 524.2	09/02/15 00:53	EEC	
Surrogate: Bromofluorobenzene	85.0	% 50-150			EPA 524.2	09/02/15 00:53	EEC	
Surrogate: Toluene-d8	99.4	% 50-150			EPA 524.2	09/02/15 00:53	EEC	
1,2,3-TCP by Purge & Trap GC/MS								
1,2,3-Trichloropropane	ND	0.005	0.004	ug/L	SRL 524M-TCP	08/25/15 18:52	eec	
Semivolatile Organic Compounds by EPA 525.2								
Benzo(a)pyrene	ND	0.10	0.090	ug/L	EPA 525.2	08/28/15 01:58	JHR	
DEH-Adipate	ND	5.0	0.18	ug/L	EPA 525.2	08/28/15 01:58	JHR	
DEH-Phthalate	ND	3.0	0.81	ug/L	EPA 525.2	08/28/15 01:58	JHR	
Alachlor	ND	1.0	0.12	ug/L	EPA 525.2	08/28/15 01:58	JHR	
Atrazine	ND	0.50	0.063	ug/L	EPA 525.2	08/28/15 01:58	JHR	
Molinate	ND	2.0	0.051	ug/L	EPA 525.2	08/28/15 01:58	JHR	
Simazine	ND	1.0	0.061	ug/L	EPA 525.2	08/28/15 01:58	JHR	
Thiobencarb	ND	1.0	0.11	ug/L	EPA 525.2	08/28/15 01:58	JHR	
Surrogate: 4-Terphenyl-d14	112	% 70-130			EPA 525.2	08/28/15 01:58	JHR	
Surrogate: Triphenyl phosphate	120	% 50-150			EPA 525.2	08/28/15 01:58	JHR	

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CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 10-Sep-2015

Analytical Report: Page 8 of 8
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2511

Received on Ice (Y/N): Yes Temp: 3 °C

Notes and Definitions

N_pScr:	Cyanide Determination: Sample screened for interference and preserved upon receipt at the lab	B5H2511-01
N_pScr:	Cyanide Determination: Sample screened for interference and preserved upon receipt at the lab	B5H2511-02

J	Estimated value
NMout	The matrix spike and/or matrix spike duplicate performed on this sample did not meet laboratory acceptance criteria.
ND:	Analyte NOT DETECTED at or above the Method Detection Limit **(if MDL is reported)**, otherwise at or above the Reportable Detection Limit (RDL)
NR:	Not Reported
RDL:	Reportable Detection Limit
MDL:	Method Detection Limit
* / '" :	NELAP does not offer accreditation for this analyte/method/matrix combination

Approval

Enclosed are the analytical results for the submitted sample(s). Babcock Laboratories certify the data presented as part of this report meet the minimum quality standards in the referenced analytical methods. Any exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

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CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

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Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 10-Sep-2015

Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2511

Received on Ice (Y/N): Yes Temp: 3 °C

Eastern Municipal Water District

Contracted Laboratory Analysis Request Form

Test Request Details

2378 TCDD (Dioxin),
2,3,7,8-TCDD (Dioxin)
Carbamates, EPA
CARBAMATES
Carbofuran
Oxamyl
Chromium VI, EPA
Chromium Hexavalent
Diquat/Paraquat,
Diquat
EDB & DBCP, EPA
1,2-Dibromo-3-Chloro
EDB AND DBCP BY
Ethylene Dibromide
Endothall, EPA 548.1
Endothall
Glyphosate, EPA 547
Glyphosate
Herbicides, EPA
2,4,5-TP
2,4-D
Bentazon
Dalapon
Dinoseb
HERBACIDES 515
Pentachlorophenol
Picloram
MBAS, EPA 425.1
Foaming Agents
PCBs, EPA 508
CHLORINATED
Chlordane
Endrin
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopenta
Methoxychlor
PCBs-Total
Toxaphene
gamma-BHC
Perchlorate, EPA

GENERAL
Perchlorate
Radiologicals, Radio
Gross Alpha
Gross Alpha Counting
Radium 226
Radium 226 Counting
Radium 228
Radium 228 Counting
Uranium
SRL, EPA 524M-TCP
1,2,3-Trichloropropane
SVOC, EPA 525.2
Alachlor
Atrazine
Benzo (a) pyrene
Bis(2-ethylhexyl)adipa
Bis(2-ethylhexyl)phtha
Molinate
SEMI-VOLATILE ORG
Simazine
Thiobencarb
T22 VOC, EPA 524
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroeth
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2,4-Trichlorobenzen
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichloropropene
1,4-Dichlorobenzene
Benzene
Carbon Tetrachloride
Chlorobenzene
Ethylbenzene
Methyl-Tert-Butyl-Ethe
Methylene Chloride
Styrene
Tetrachloroethene

Toluene
Trichloroethene
Trichlorofluoromethan
Trichlorotrifluoroethan
VOLATILE ORGANIC
Vinyl Chloride
Xylenes (Total)
cis-1,2-Dichloroethene
trans-1,2-Dichloroetha
Total Cyanide
Cyanide
tert-Butyl Alcohol,
Dichlorodifluoromethа
Ethyl-Tert-Butyl Ether
Tert-Amyl-Methyl
Tert-Butyl Alcohol

Tuesday, August 25, 2015 8:50:53 AM

Page 2 of 2

B5H2511 AB
AUG 25 2015

mailing
P.O. Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

BABCOCK Laboratories, Inc.
The Standard of Excellence for Over 100 Years

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA, 92572-8300

Analytical Report: Page 1 of 2
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells
Work Order Number: B5H2705

Report Date: 21-Sep-2015

Received on Ice (Y/N Yes Temp: 3 °C

Eastern Municipal Water District
Contracted Laboratory Analysis Request Form

Workorder #: E1503159
Date Sampled: AUG 24, 2015
Requested By: ENGINEERING
Prepared By: Susan Nguyen

Purchase Order #: 78586 BABCOCK

Location	EMWD Lab ID #	Analysis Requested	Account #	# Bottles
SPEC ENG OPS SAMPLE	E150825046	PCBs, EPA 508 T22 VOC, EPA 524 Herbicides, EPA 515.3 Glyphosate, EPA 547 Carbamates, EPA 531.1 Endothall, EPA 548.1 tert-Butyl Alcohol, EPA 524.2 MBAS, EPA 425.1 Diquat/Paraquat, EPA 549.2 Perchlorate, EPA 314.1 Radiologicals, Radio SVOC, EPA 525.2 Total Cyanide SM4500CN:E EDB & DBCP, EPA 504.1 SRL, EPA 524M-TCP 2378 TCDD (Dioxin), EPA 1613B Chromium VI, EPA 218.6		11 1 cooler 4
SPEC ENG OPS SAMPLE	E150825049	PCBs, EPA 508 T22 VOC, EPA 524 Herbicides, EPA 515.3 Glyphosate, EPA 547 Carbamates, EPA 531.1 Endothall, EPA 548.1 tert-Butyl Alcohol, EPA 524.2 MBAS, EPA 425.1 Diquat/Paraquat, EPA 549.2 Perchlorate, EPA 314.1 Radiologicals, Radio SVOC, EPA 525.2 Total Cyanide SM4500CN:E EDB & DBCP, EPA 504.1 SRL, EPA 524M-TCP 2378 TCDD (Dioxin), EPA 1613B Chromium VI, EPA 218.6		11 1 cooler

Remarks:

Collected: 08/24/15 14:00 by A Wickham (CH2M)
Project: Engineering Exploratory Well

Call the Water Quality Dept., Laboratory Division, at (951) 928-3777, ext. 6278 if you have any questions regarding this request.

Subcontract

Carrier Release

Chain of Custody Attached? Yes ☐ No ☐

RELINQUISHED BY	DATE	TIME	RECEIVED BY
	8/25/15	1345	
	8/25/15	1500	

Tuesday, August 25, 2015 8:30:52 AM

Page 1 of 2

B5H2705 AB

AUG 26 2015

mailing
P.O. Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

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F 951 653 1662
www.babcocklabs.com

NELAP no. 02101CA
CA Elap no. 2698
EPA no. CA00102

SUBCONTRACT ORDER Printed: 8/27/2015 8:57

Babcock Laboratories, Inc.

B5H2705

1509680

SENDING LABORATORY:

Babcock Laboratories, Inc.
6100 Quail Valley Court
Riverside, CA 92507-0704
Phone: (951) 653-3351
Fax: (951) 653-1662
Project Manager: Cindy A. Waddell

RECEIVING LABORATORY:

FGL Environmental, Inc. - Subcontracts
853 Corporation Street
Santa Paula, CA 93060
Phone :(805) 392-2000
Fax: (805) 525-4172

Copy/Relog from B5H2511.
Client: Eastern Municipal Water Dist.
Sampler: A. Wickham

Analysis	Due	Expires Regulatory Days Past Date Sampled	Laboratory ID	Comments
Sample ID: B5H2705-01 **Water**		**Sampled: 08/24/15 14:00**	**E150825046 SPEC ENG OPS SAMPLE**	*Proj.No.:*Engineering Exploratory Wells
Radio-Uranium	09/21/15 17:00	02/20/16 14:00		
Radio-Radium 228	09/21/15 17:00	02/20/16 14:00		
Radio-Radium 226	09/21/15 17:00	02/20/16 14:00		
Radio-Gross Alpha	09/21/15 17:00	02/20/16 14:00		
Containers Supplied:				
Half gal Poly-HNO3 (A)	Quart Poly - HNO3 (B)	Quart Poly - HNO3 (C)	Quart Poly - HNO3 (D)	
Sample ID: B5H2705-02 **Water**		**Sampled: 08/24/15 14:00**	**E150825049 SPEC ENG OPS SAMPLE**	*Proj.No.:*Engineering Exploratory Wells
Radio-Uranium	09/21/15 17:00	02/20/16 14:00		
Radio-Radium 228	09/21/15 17:00	02/20/16 14:00		
Radio-Radium 226	09/21/15 17:00	02/20/16 14:00		
Radio-Gross Alpha	09/21/15 17:00	02/20/16 14:00		
Containers Supplied:				
Half gal Poly-HNO3 (A)	Quart Poly - HNO3 (B)	Quart Poly - HNO3 (C)	Quart Poly - HNO3 (D)	

All Containers Intact: _____ Yes _____No Samples Preserved Properly: _____Yes _____No

Samples Received at _____ oC Sample Lables / COC Agree: _____Yes _____No Custody Seals Present: _____Yes _____No

Please forward all acknowledgements of sample receipt, final reports and invoices to data@babcocklabs.com
NO HARDCOPIES PLEASE.

of David Kelley EMD 8/27/15
Released By Date Received By Date

FedEx 5912 3496 4890 8/28 1100
Released By Date Received By Date

September 18, 2015

Babcock Laboratories, Inc.
P.O. Box 432
Riverside, CA 92502

Lab ID : SP 1509638
Customer : 2-14

Laboratory Report

Introduction: This report package contains total of 5 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(1 page)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
E150825046 SPEC ENG OPS SAMPLE	08/24/2015	08/28/2015	SP 1509638-001	W
E150825049 SPEC ENG OPS SAMPLE	08/24/2015	08/28/2015	SP 1509638-002	W

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at room temperature. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Radio QC

900.0	09/03/2015:213155 All analysis quality controls are within established criteria
	09/03/2015:213157 All analysis quality controls are within established criteria
	09/02/2015:210239 All preparation quality controls are within established criteria
903.0	09/08/2015:213198 All analysis quality controls are within established criteria
	09/05/2015:210397 All preparation quality controls are within established criteria
908.0	09/10/2015:213376 All analysis quality controls are within established criteria
	09/09/2015:210466 All preparation quality controls are within established criteria

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853 Corporation Street
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9415 W. Goshen Avenue
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TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

September 18, 2015

Lab ID : SP 1509638-001
Customer ID : 2-14

Babcock Laboratories, Inc.
P.O. Box 432
Riverside, CA 92502

Sampled On : August 24, 2015-14:00
Sampled By : A. Wickham
Received On : August 28, 2015-11:00
Matrix : Water

Description : E150825046 SPEC ENG OPS SAMPLE
Project : B5H2705-01

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry P:T5								
Gross Alpha	8.90 ± 3.29	2.51	pCi/L	15/5	900.0	09/02/15-08:00 2P1510239	900.0	09/03/15-16:00 2A1513157
Total Alpha Radium (226)	0.256 ± 0.201	0.363	pCi/L	3	903.0	09/05/15-13:45 2P1510397	903.0	09/08/15-10:20 2A1513198
Uranium	1.93 ± 1.06	0.300	pCi/L	20	908.0	09/09/15-07:00 2P1510466	908.0	09/10/15-19:12 2A1513376
Ra 228	0.000 ± 0.429	0.200	pCi/L	2	Ra - 05	09/05/15-11:30 2P1510173	Ra - 05	09/07/15-11:20 2A1513145

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: HNO3 pH < 2 * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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FAX: (559)734-8435
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September 18, 2015 Lab ID : SP 1509638
Babcock Laboratories, Inc. Customer : 2-14

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	09/03/15:213155caa	CCV	cpm	8862	40.7 %	38 - 46	
			CCB	cpm		0.100	0.14	
	900.0	09/03/15:213157caa	CCV	cpm	8862	40.7 %	39 - 48	
			CCB	cpm		0.10	0.2	
Gross Alpha	900.0	09/02/15:210239caa	Blank	pCi/L		-0.14	3	
			LCS	pCi/L	180.6	92.1 %	75-125	
			MS	pCi/L	180.6	108 %	60-140	
		(SP 1509587-001)	MSD	pCi/L	180.6	99.0 %	60-140	
			MSRPD	pCi/L	180.6	8.5%	≤30	
Alpha	903.0	09/08/15:213198caa	CCV	cpm	8859	41.1 %	37 - 46	
			CCB	cpm		0.0800	0.16	
Total Alpha Radium (226)	903.0	09/05/15:210397emv	RgBlk	pCi/L		0.01	2	
			LCS	pCi/L	21.59	71.1 %	52-107	
			BS	pCi/L	21.59	73.8 %	43-111	
			BSD	pCi/L	21.59	69.4 %	43-111	
			BSRPD	pCi/L	21.59	6.2%	≤35.5	
Alpha	908.0	09/10/15:213376caa	CCV	cpm	8857	43.3 %	41 - 50	
			CCB	cpm		0.0600	0.12	
Uranium	908.0	09/09/15:210466caa	RgBlk	pCi/L		0.11	1	
			LRS	pCi/L	20.97	58.1 %	54-105	
			BS	pCi/L	20.97	95.1 %	75-125	
			BSD	pCi/L	20.97	96.9 %	75-125	
			BSRPD	pCi/L	20.97	1.9%	≤20	
Beta	Ra - 05	09/07/15:213145caa	CCV	cpm	9257	96.2 %	86 - 105	
			CCB	cpm		0.3600	0.49	
Ra 228	Ra - 05	09/05/15:210173emv	RgBlk	pCi/L		0.19	3	
			LRS	pCi/L	88.57	48.8 %	27-59	
			BS	pCi/L	88.57	104 %	75-125	
			BSD	pCi/L	88.57	97.3 %	75-125	
			BSRPD	pCi/L	88.57	6.2%	≤25	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
LRS	: Laboratory Recovery Standard - Prepared to establish the batch recovery factor used in result calculations.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

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FAX: (559)734-8435
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Maxxam Job # B5H3802 PARAMETERS FOR ANALYSIS REQUESTED

The values listed below are RDL's and not results. Report Detection Limit (RDL) may be elevated if there are matrix interferences or limited sample amounts.

Maxxam # AWU211, Sample IDN: **B5H2705-01**
Maxxam # AWU212, Sample IDN: **B5H2705-02**

2,3,7,8-TCDD IN WATER (1613B)	
2,3,7,8-Tetra CDD	10 pg/L

Maxxam
A Bureau Veritas Group Company

Your Project #: B5H2705
Your C.O.C. #: NA

Attention:Cindy A Waddell

BABCOCK LABS
PO BOX 432
RIVERSIDE, CA
USA 92502-0432

Report Date: 2015/09/18
Report #: R3666435
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5H3802
Received: 2015/08/28, 14:15

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
2,3,7,8-TCDD in Drinking Water (1613B) (1)	2	2015/09/11	2015/09/16	BRL SOP-00410	EPA 1613B m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test is DOD and ELAP accredited.
U = Undetected at the limit of quantitation.
J = Estimated concentration between the EDL & RDL.
B = Blank Contamination.
Q = One or more quality control criteria failed.
E = Analyte concentration exceeds the maximum concentration level.
K = Estimated maximum possible concentration due to ion abundance ratio failure.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Melissa DiGrazia, Project Manager - ATUT
Email: MDiGrazia@maxxam.ca
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5H3802
Report Date: 2015/09/18

BABCOCK LABS
Client Project #: B5H2705

TEST SUMMARY

Maxxam ID: AWU211
Sample ID: B5H2705-01
Matrix: Water

Collected: 2015/08/24
Shipped:
Received: 2015/08/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDD in Drinking Water (1613B)	HRMS/MS	4193033	2015/09/11	2015/09/16	Vica Cioranic

Maxxam ID: AWU212
Sample ID: B5H2705-02
Matrix: Water

Collected: 2015/08/24
Shipped:
Received: 2015/08/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDD in Drinking Water (1613B)	HRMS/MS	4193033	2015/09/11	2015/09/16	Vica Cioranic

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Maxxam Job #: B5H3802
Report Date: 2015/09/18

BABCOCK LABS
Client Project #: B5H2705

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4193033	VCI	Spiked Blank	2,3,7,8-Tetra CDD	2015/09/16		77	%	67 - 158
			C13-2378 TetraCDD	2015/09/16		106	%	24 - 164
4193033	VCI	Method Blank	2,3,7,8-Tetra CDD	2015/09/16	1.4 U, EDL=1.4		pg/L	
			C13-2378 TetraCDD	2015/09/16		104	%	24 - 164

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

NORTH COAST LABORATORIES LTD.

September 04, 2015

Babcock Laboratories, Inc.
6100 Quail Valley Court
Riverside, CA 92507

Attn: Cindy A. Waddell

RE: B5H2705

Order No.: 1508520
Invoice No.: 123133
PO No.: B5H2705
ELAP No.1247-Expires July 2016

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	B5H2705-01
01B	B5H2705-01
02A	B5H2705-02
02B	B5H2705-02

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

Approved for release by:

Trudie Blasi, Project Manager

Date: 04-Sep-2015
WorkOrder: 1508520

ANALYTICAL REPORT

Client Sample ID: B5H2705-01
Lab ID: 1508520-01A
Received: 8/28/2015
Collected: 8/24/2015 14:00

Test Name: EPA 549.2 **Reference:** EPA 549.2

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Diquat (dissolved)	ND		0.40	µg/L	1.0	8/31/2015	9/3/2015

Client Sample ID: B5H2705-01
Lab ID: 1508520-01B
Received: 8/28/2015
Collected: 8/24/2015 14:00

Test Name: Glyphosate **Reference:** EPA 547

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Glyphosate	ND		5.0	µg/L	1.0		9/1/2015

Client Sample ID: B5H2705-02
Lab ID: 1508520-02A
Received: 8/28/2015
Collected: 8/24/2015 14:00

Test Name: EPA 549.2 **Reference:** EPA 549.2

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Diquat (dissolved)	ND		0.40	µg/L	1.0	8/31/2015	9/3/2015

Client Sample ID: B5H2705-02
Lab ID: 1508520-02B
Received: 8/28/2015
Collected: 8/24/2015 14:00

Test Name: Glyphosate **Reference:** EPA 547

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Glyphosate	ND		5.0	µg/L	1.0		9/1/2015

North Coast Laboratories, Ltd.

Date: 9/4/2015

CLIENT: Babcock Laboratories, Inc.
Work Order: 1508520
Project: B5H2705

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-090115A** Batch ID: **R83676** Test Code: **547W** Units: **µg/L** Analysis Date **9/1/2015 15:58:03** Prep Date
Client ID: Run ID: **ORLC6_150901A** SeqNo: **1205125**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Glyphosate	49.08	5.0	50.0	0	98.2%	80	118	0			

Sample ID **LCSD-090115A** Batch ID: **R83676** Test Code: **547W** Units: **µg/L** Analysis Date **9/1/2015 17:25:47** Prep Date
Client ID: Run ID: **ORLC6_150901A** SeqNo: **1205129**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Glyphosate	52.39	5.0	50.0	0	105%	80	118	49.1	6.53%	30	

Sample ID **LCS-32428** Batch ID: **32428** Test Code: **549W** Units: **µg/L** Analysis Date **9/3/2015 12:04:37** Prep Date **8/31/2015**
Client ID: Run ID: **ORLC2_150903A** SeqNo: **1205305**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diquat (dissolved)	1.694	0.40	2.00	0	84.7%	70	130	0			

Sample ID **LCSD-32428** Batch ID: **32428** Test Code: **549W** Units: **µg/L** Analysis Date **9/3/2015 12:58:26** Prep Date **8/31/2015**
Client ID: Run ID: **ORLC2_150903A** SeqNo: **1205308**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diquat (dissolved)	1.670	0.40	2.00	0	83.5%	70	130	1.69	1.38%	30	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 15-Sep-2015

Analytical Report: Page 1 of 14
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2699

Received on Ice (Y/N): Yes Temp: 5 °C

Attached is the analytical report for the sample(s) received for your project. Below is a list of the individual sample descriptions with the corresponding laboratory number(s). Also, enclosed is a copy of the Chain of Custody document (if received with your sample(s)). Please note any unused portion of the sample(s) may be responsibly discarded after 30 days from the above report date, unless you have requested otherwise.

Thank you for the opportunity to serve your analytical needs. If you have any questions or concerns regarding this report please contact our client service department.

Sample Identification

Lab Sample #	Client Sample ID	Matrix	Date Sampled	By	Date Submitted	By
B5H2699-01	E150826015 SPEC ENG OPS SAMPLE	Water	08/25/15 10:05	A Wickham	08/26/15 13:10	Jennifer Aguilar
B5H2699-02	E150826018 SPEC ENG OPS SAMPLE	Water	08/25/15 10:05	A Wickham	08/26/15 13:10	Jennifer Aguilar
B5H2699-03	E150826019 SPEC ENG OPS SAMPLE	Water	08/25/15 10:05	A Wickham	08/26/15 13:10	Jennifer Aguilar
B5H2699-04	E150826022 SPEC ENG OPS SAMPLE	Water	08/25/15 10:05	A Wickham	08/26/15 13:10	Jennifer Aguilar

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CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 15-Sep-2015

Analytical Report: Page 3 of 14
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2699

Received on Ice (Y/N): Yes Temp: 5 °C

Laboratory Reference Number
B5H2699-01

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
E150826015 SPEC ENG OPS SAMPLE	Water	08/25/15 10:05	08/26/15 13:10

Analyte(s)	Result	RDL	MDL	Units	Method	Analysis Date	Analyst	Flag
Volatile Organic Compounds by EPA 524.2								
Ethylbenzene	ND	0.50	0.26	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Methyl tert butyl Ether	ND	3.0	0.43	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Methylene Chloride	ND	0.50	0.15	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Styrene	ND	0.50	0.22	ug/L	EPA 524.2	09/02/15 01:23	EEC	
tert-Amyl Methyl Ether	ND	3.0	0.37	ug/L	EPA 524.2	09/02/15 01:23	EEC	
tert-Butyl alcohol	ND	5.0	2.1	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Tetrachloroethene	ND	0.50	0.23	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Toluene	ND	0.50	0.22	ug/L	EPA 524.2	09/02/15 01:23	EEC	
trans-1,2-Dichloroethene	ND	0.50	0.10	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Trichloroethene	ND	0.50	0.25	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Trichlorofluoromethane	ND	5.0	0.16	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Trichlorotrifluoroethane	ND	10	0.22	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Vinyl Chloride	ND	0.50	0.13	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Xylenes (Total)	ND	0.50	0.41	ug/L	EPA 524.2	09/02/15 01:23	EEC	
Surrogate: 1,2-Dichloroethane-d4	104	% 50-150			EPA 524.2	09/02/15 01:23	EEC	
Surrogate: Bromofluorobenzene	87.5	% 50-150			EPA 524.2	09/02/15 01:23	EEC	
Surrogate: Toluene-d8	98.3	% 50-150			EPA 524.2	09/02/15 01:23	EEC	
1,2,3-TCP by Purge & Trap GC/MS								
1,2,3-Trichloropropane	ND	0.005	0.004	ug/L	SRL 524M-TCP	09/01/15 18:13	jes	
Semivolatile Organic Compounds by EPA 525.2								
Benzo(a)pyrene	ND	0.10	0.090	ug/L	EPA 525.2	08/28/15 05:18	JHR	
DEH-Adipate	ND	5.0	0.18	ug/L	EPA 525.2	08/28/15 05:18	JHR	
DEH-Phthalate	ND	3.0	0.81	ug/L	EPA 525.2	08/28/15 05:18	JHR	
Alachlor	ND	1.0	0.12	ug/L	EPA 525.2	08/28/15 05:18	JHR	
Atrazine	ND	0.50	0.063	ug/L	EPA 525.2	08/28/15 05:18	JHR	
Molinate	ND	2.0	0.051	ug/L	EPA 525.2	08/28/15 05:18	JHR	
Simazine	ND	1.0	0.061	ug/L	EPA 525.2	08/28/15 05:18	JHR	
Thiobencarb	ND	1.0	0.11	ug/L	EPA 525.2	08/28/15 05:18	JHR	
Surrogate: 4-Terphenyl-d14	105	% 70-130			EPA 525.2	08/28/15 05:18	JHR	
Surrogate: Triphenyl phosphate	121	% 50-150			EPA 525.2	08/28/15 05:18	JHR	

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CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 15-Sep-2015

Analytical Report: Page 5 of 14
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2699

Received on Ice (Y/N): Yes Temp: 5 °C

Laboratory Reference Number
B5H2699-02

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
E150826018 SPEC ENG OPS SAMPLE	Water	08/25/15 10:05	08/26/15 13:10

Analyte(s)	Result	RDL	MDL	Units	Method	Analysis Date	Analyst	Flag
Surfactants								
MBAS	ND	0.08	0.08	mg/L	SM 5540C	08/26/15 21:40	slp	
General Inorganics								
Cyanide	ND	100	4.9	ug/L	SM 4500CN E	09/01/15 10:24	lfs	
Perchlorate	ND	4.0	0.49	ug/L	EPA 314.0	08/28/15 04:02	ams	
Metals and Metalloids								
Hexavalent Chromium	0.11	1.0	0.013	ug/L	EPA 218.6	09/01/15 20:56	ara	J
EDB and DBCP by EPA 504								
Ethylene dibromide	ND	0.020	0.0089	ug/L	EPA 504.1	09/02/15 04:45	jhr	
Dibromochloropropane	ND	0.010	0.0029	ug/L	EPA 504.1	09/02/15 04:45	jhr	
Chlorinated Herbicides by EPA 515.3								
Bentazon	ND	2.0	0.14	ug/L	EPA 515.3	09/01/15 13:27	acw	
2,4-D	ND	10	0.17	ug/L	EPA 515.3	09/01/15 13:27	acw	
Dalapon	ND	10	1.2	ug/L	EPA 515.3	09/01/15 13:27	acw	
Dinoseb	ND	2.0	0.36	ug/L	EPA 515.3	09/01/15 13:27	acw	
Pentachlorophenol	ND	0.20	0.14	ug/L	EPA 515.3	09/01/15 13:27	acw	
Picloram	ND	1.0	0.17	ug/L	EPA 515.3	09/01/15 13:27	acw	
2,4,5-TP Silvex	ND	1.0	0.15	ug/L	EPA 515.3	09/01/15 13:27	acw	
Surrogate: DCAA	88.3	% 70-130			EPA 515.3	09/01/15 13:27	acw	
Volatile Organic Compounds by EPA 524.2								
1,1,1-Trichloroethane	ND	0.50	0.12	ug/L	EPA 524.2	09/02/15 01:52	EEC	
1,1,2,2-Tetrachloroethane	ND	0.50	0.29	ug/L	EPA 524.2	09/02/15 01:52	EEC	
1,1,2-Trichloroethane	ND	0.50	0.31	ug/L	EPA 524.2	09/02/15 01:52	EEC	
1,1-Dichloroethane	ND	0.50	0.098	ug/L	EPA 524.2	09/02/15 01:52	EEC	
1,1-Dichloroethene	ND	0.50	0.12	ug/L	EPA 524.2	09/02/15 01:52	EEC	
1,2,4-Trichlorobenzene	ND	0.50	0.34	ug/L	EPA 524.2	09/02/15 01:52	EEC	
1,2-Dichlorobenzene	ND	0.50	0.20	ug/L	EPA 524.2	09/02/15 01:52	EEC	
1,2-Dichloroethane	ND	0.50	0.21	ug/L	EPA 524.2	09/02/15 01:52	EEC	
1,2-Dichloropropane	ND	0.50	0.19	ug/L	EPA 524.2	09/02/15 01:52	EEC	
1,3-Dichloropropene (total)	ND	0.50	0.30	ug/L	EPA 524.2	09/02/15 01:52	EEC	
1,4-Dichlorobenzene	ND	0.50	0.072	ug/L	EPA 524.2	09/02/15 01:52	EEC	
Benzene	ND	0.50	0.14	ug/L	EPA 524.2	09/02/15 01:52	EEC	
Carbon Tetrachloride	ND	0.50	0.15	ug/L	EPA 524.2	09/02/15 01:52	EEC	
Chlorobenzene	ND	0.50	0.23	ug/L	EPA 524.2	09/02/15 01:52	EEC	
cis-1,2-Dichloroethene	ND	0.50	0.18	ug/L	EPA 524.2	09/02/15 01:52	EEC	
Dichlorodifluoromethane	ND	0.50	0.18	ug/L	EPA 524.2	09/02/15 01:52	EEC	
Ethyl tert-Butyl Ether	ND	3.0	0.29	ug/L	EPA 524.2	09/02/15 01:52	EEC	
Ethylbenzene	ND	0.50	0.26	ug/L	EPA 524.2	09/02/15 01:52	EEC	

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CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 15-Sep-2015

Analytical Report: Page 7 of 14
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2699

Received on Ice (Y/N): Yes Temp: 5 °C

Laboratory Reference Number
B5H2699-02

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
E150826018 SPEC ENG OPS SAMPLE	Water	08/25/15 10:05	08/26/15 13:10

Analyte(s)	Result	RDL	MDL	Units	Method	Analysis Date	Analyst	Flag
Carbamates by EPA 531.2								
Carbofuran	ND	5.0	0.43	ug/L	EPA 531.2	08/31/15 19:07	DIS	
Oxamyl	1.4	20	0.24	ug/L	EPA 531.2	08/31/15 19:07	DIS	J
Endothall by EPA 548.1								
Endothall	ND	45	31	ug/L	EPA 548.1	08/29/15 01:06	JHR	
Organochlorine Pesticides and PCBs by EPA 505								
Endrin	ND	0.10	0.0035	ug/L	EPA 505	08/28/15 12:10	acw	
Heptachlor	ND	0.010	0.0052	ug/L	EPA 505	08/28/15 12:10	acw	
Heptachlor Epoxide	ND	0.010	0.0023	ug/L	EPA 505	08/28/15 12:10	acw	
Hexachlorobenzene	ND	0.50	0.0027	ug/L	EPA 505	08/28/15 12:10	acw	
Hexachlorocyclopentadiene	ND	1.0	0.0061	ug/L	EPA 505	08/28/15 12:10	acw	
Lindane	ND	0.20	0.0026	ug/L	EPA 505	08/28/15 12:10	acw	
Methoxychlor	ND	10	0.013	ug/L	EPA 505	08/28/15 12:10	acw	
Toxaphene	ND	1.0	0.33	ug/L	EPA 505	08/28/15 12:10	acw	
Chlordane	ND	0.10	0.050	ug/L	EPA 505	09/01/15 21:58	acw	
Polychlorinated Biphenyls (Total PCB's)	ND	0.50	0.50	ug/L	EPA 505	08/28/15 12:10	acw	

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CA ELAP No. 2698
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Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
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Report Date: 15-Sep-2015

Analytical Report: Page 9 of 14
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2699

Received on Ice (Y/N): Yes Temp: 5 °C

Laboratory Reference Number
B5H2699-03

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
E150826019 SPEC ENG OPS SAMPLE	Water	08/25/15 10:05	08/26/15 13:10

Analyte(s)	Result		RDL	MDL	Units	Method	Analysis Date	Analyst	Flag
Volatile Organic Compounds by EPA 524.2									
Methyl tert butyl Ether	ND		3.0	0.43	ug/L	EPA 524.2	09/02/15 02:23	EEC	
Methylene Chloride	ND		0.50	0.15	ug/L	EPA 524.2	09/02/15 02:23	EEC	
Styrene	ND		0.50	0.22	ug/L	EPA 524.2	09/02/15 02:23	EEC	
tert-Amyl Methyl Ether	ND		3.0	0.37	ug/L	EPA 524.2	09/02/15 02:23	EEC	
tert-Butyl alcohol	ND		5.0	2.1	ug/L	EPA 524.2	09/02/15 02:23	EEC	
Tetrachloroethene	ND		0.50	0.23	ug/L	EPA 524.2	09/02/15 02:23	EEC	
Toluene	ND		0.50	0.22	ug/L	EPA 524.2	09/02/15 02:23	EEC	
trans-1,2-Dichloroethene	ND		0.50	0.10	ug/L	EPA 524.2	09/02/15 02:23	EEC	
Trichloroethene	ND		0.50	0.25	ug/L	EPA 524.2	09/02/15 02:23	EEC	
Trichlorofluoromethane	ND		5.0	0.16	ug/L	EPA 524.2	09/02/15 02:23	EEC	
Trichlorotrifluoroethane	ND		10	0.22	ug/L	EPA 524.2	09/02/15 02:23	EEC	
Vinyl Chloride	ND		0.50	0.13	ug/L	EPA 524.2	09/02/15 02:23	EEC	
Xylenes (Total)	ND		0.50	0.41	ug/L	EPA 524.2	09/02/15 02:23	EEC	
Surrogate: 1,2-Dichloroethane-d4	104	%	50-150			EPA 524.2	09/02/15 02:23	EEC	
Surrogate: Bromofluorobenzene	87.5	%	50-150			EPA 524.2	09/02/15 02:23	EEC	
Surrogate: Toluene-d8	96.7	%	50-150			EPA 524.2	09/02/15 02:23	EEC	
1,2,3-TCP by Purge & Trap GC/MS									
1,2,3-Trichloropropane	ND		0.005	0.004	ug/L	SRL 524M-TCP	09/01/15 19:12	jes	
Semivolatile Organic Compounds by EPA 525.2									
Benzo(a)pyrene	ND		0.10	0.090	ug/L	EPA 525.2	09/01/15 23:09	JHR	
DEH-Adipate	ND		5.0	0.18	ug/L	EPA 525.2	09/01/15 23:09	JHR	
DEH-Phthalate	ND		3.0	0.81	ug/L	EPA 525.2	09/01/15 23:09	JHR	
Alachlor	ND		1.0	0.12	ug/L	EPA 525.2	09/01/15 23:09	JHR	
Atrazine	ND		0.50	0.063	ug/L	EPA 525.2	09/01/15 23:09	JHR	
Molinate	ND		2.0	0.051	ug/L	EPA 525.2	09/01/15 23:09	JHR	
Simazine	ND		1.0	0.061	ug/L	EPA 525.2	09/01/15 23:09	JHR	
Thiobencarb	ND		1.0	0.11	ug/L	EPA 525.2	09/01/15 23:09	JHR	
Surrogate: 4-Terphenyl-d14	127	%	70-130			EPA 525.2	09/01/15 23:09	JHR	
Surrogate: Triphenyl phosphate	113	%	50-150			EPA 525.2	09/01/15 23:09	JHR	

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CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 15-Sep-2015

Analytical Report: Page 11 of 14
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2699

Received on Ice (Y/N): Yes Temp: 5 °C

Laboratory Reference Number
B5H2699-04

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
E150826022 SPEC ENG OPS SAMPLE	Water	08/25/15 10:05	08/26/15 13:10

Analyte(s)	Result	RDL	MDL	Units	Method	Analysis Date	Analyst	Flag
Surfactants								
MBAS	ND	0.08	0.08	mg/L	SM 5540C	08/26/15 21:40	slp	
General Inorganics								
Cyanide	ND	100	4.9	ug/L	SM 4500CN E	09/01/15 10:24	lfs	
Perchlorate	ND	4.0	0.49	ug/L	EPA 314.0	08/28/15 04:30	ams	
Metals and Metalloids								
Hexavalent Chromium	ND	1.0	0.013	ug/L	EPA 218.6	09/01/15 21:56	ara	
EDB and DBCP by EPA 504								
Ethylene dibromide	ND	0.020	0.0089	ug/L	EPA 504.1	09/02/15 05:19	jhr	
Dibromochloropropane	ND	0.010	0.0029	ug/L	EPA 504.1	09/02/15 05:19	jhr	
Chlorinated Herbicides by EPA 515.3								
Bentazon	ND	2.0	0.14	ug/L	EPA 515.3	09/01/15 14:33	acw	
2,4-D	ND	10	0.17	ug/L	EPA 515.3	09/01/15 14:33	acw	
Dalapon	ND	10	1.2	ug/L	EPA 515.3	09/01/15 14:33	acw	
Dinoseb	ND	2.0	0.36	ug/L	EPA 515.3	09/01/15 14:33	acw	
Pentachlorophenol	ND	0.20	0.14	ug/L	EPA 515.3	09/01/15 14:33	acw	
Picloram	ND	1.0	0.17	ug/L	EPA 515.3	09/01/15 14:33	acw	
2,4,5-TP Silvex	ND	1.0	0.15	ug/L	EPA 515.3	09/01/15 14:33	acw	
Surrogate: DCAA	87.6	% 70-130			EPA 515.3	09/01/15 14:33	acw	
Volatile Organic Compounds by EPA 524.2								
1,1,1-Trichloroethane	ND	0.50	0.12	ug/L	EPA 524.2	09/02/15 02:52	EEC	
1,1,2,2-Tetrachloroethane	ND	0.50	0.29	ug/L	EPA 524.2	09/02/15 02:52	EEC	
1,1,2-Trichloroethane	ND	0.50	0.31	ug/L	EPA 524.2	09/02/15 02:52	EEC	
1,1-Dichloroethane	ND	0.50	0.098	ug/L	EPA 524.2	09/02/15 02:52	EEC	
1,1-Dichloroethene	ND	0.50	0.12	ug/L	EPA 524.2	09/02/15 02:52	EEC	
1,2,4-Trichlorobenzene	ND	0.50	0.34	ug/L	EPA 524.2	09/02/15 02:52	EEC	
1,2-Dichlorobenzene	ND	0.50	0.20	ug/L	EPA 524.2	09/02/15 02:52	EEC	
1,2-Dichloroethane	ND	0.50	0.21	ug/L	EPA 524.2	09/02/15 02:52	EEC	
1,2-Dichloropropane	ND	0.50	0.19	ug/L	EPA 524.2	09/02/15 02:52	EEC	
1,3-Dichloropropene (total)	ND	0.50	0.30	ug/L	EPA 524.2	09/02/15 02:52	EEC	
1,4-Dichlorobenzene	ND	0.50	0.072	ug/L	EPA 524.2	09/02/15 02:52	EEC	
Benzene	ND	0.50	0.14	ug/L	EPA 524.2	09/02/15 02:52	EEC	
Carbon Tetrachloride	ND	0.50	0.15	ug/L	EPA 524.2	09/02/15 02:52	EEC	
Chlorobenzene	ND	0.50	0.23	ug/L	EPA 524.2	09/02/15 02:52	EEC	
cis-1,2-Dichloroethene	ND	0.50	0.18	ug/L	EPA 524.2	09/02/15 02:52	EEC	
Dichlorodifluoromethane	ND	0.50	0.18	ug/L	EPA 524.2	09/02/15 02:52	EEC	
Ethyl tert-Butyl Ether	ND	3.0	0.29	ug/L	EPA 524.2	09/02/15 02:52	EEC	
Ethylbenzene	ND	0.50	0.26	ug/L	EPA 524.2	09/02/15 02:52	EEC	

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CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 15-Sep-2015

Analytical Report: Page 13 of 14
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2699

Received on Ice (Y/N): Yes Temp: 5 °C

Laboratory Reference Number
B5H2699-04

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
E150826022 SPEC ENG OPS SAMPLE	Water	08/25/15 10:05	08/26/15 13:10

Analyte(s)	Result	RDL	MDL	Units	Method	Analysis Date	Analyst	Flag
Carbamates by EPA 531.2								
Carbofuran	ND	5.0	0.43	ug/L	EPA 531.2	08/31/15 19:47	DIS	
Oxamyl	ND	20	0.24	ug/L	EPA 531.2	08/31/15 19:47	DIS	
Endothall by EPA 548.1								
Endothall	ND	45	31	ug/L	EPA 548.1	08/29/15 01:53	JHR	
Organochlorine Pesticides and PCBs by EPA 505								
Endrin	ND	0.10	0.0035	ug/L	EPA 505	08/28/15 13:01	acw	
Heptachlor	ND	0.010	0.0052	ug/L	EPA 505	08/28/15 13:01	acw	
Heptachlor Epoxide	ND	0.010	0.0023	ug/L	EPA 505	08/28/15 13:01	acw	
Hexachlorobenzene	ND	0.50	0.0027	ug/L	EPA 505	08/28/15 13:01	acw	
Hexachlorocyclopentadiene	ND	1.0	0.0061	ug/L	EPA 505	08/28/15 13:01	acw	
Lindane	ND	0.20	0.0026	ug/L	EPA 505	08/28/15 13:01	acw	
Methoxychlor	ND	10	0.013	ug/L	EPA 505	08/28/15 13:01	acw	
Toxaphene	ND	1.0	0.33	ug/L	EPA 505	08/28/15 13:01	acw	
Chlordane	ND	0.10	0.050	ug/L	EPA 505	09/01/15 22:50	acw	
Polychlorinated Biphenyls (Total PCB's)	ND	0.50	0.50	ug/L	EPA 505	08/28/15 13:01	acw	

mailing
P.O. Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

BABCOCK Laboratories, Inc.
The Standard of Excellence for Over 100 Years

Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 15-Sep-2015

Analytical Report: Page 1 of 3
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2699

Received on Ice (Y/N): Yes Temp: 5 °C

Eastern Municipal Water District
Contracted Laboratory Analysis Request Form

Workorder #: E1503177
Date Sampled: AUG 25, 2015
Requested By: ENGINEERING
Prepared By: Susan Nguyen

Purchase Order #: 78586 BABCOCK

Location	EMWD Lab ID #	Analysis Requested	Account #	# Bottles
SPEC ENG OPS SAMPLE	E150826015	PCBs, EPA 508 T22 VOC, EPA 524 Herbicides, EPA 515.3 Glyphosate, EPA 547 Carbamates, EPA 531.1 Endothall, EPA 548.1 tert-Butyl Alcohol, EPA 524.2 MBAS, EPA 425.1 Diquat/Paraquat, EPA 549.2 Perchlorate, EPA 314.1 Radiologicals, Radio SVOC, EPA 525.2 Total Cyanide SM4500CN:E EDB & DBCP, EPA 504.1 SRL, EPA 524M-TCP 2378 TCDD (Dioxin), EPA 1613B Chromium VI, EPA 218.6		17 1 cooler
SPEC ENG OPS SAMPLE	E150826018	PCBs, EPA 508 T22 VOC, EPA 524 Herbicides, EPA 515.3 Glyphosate, EPA 547 Carbamates, EPA 531.1 Endothall, EPA 548.1 tert-Butyl Alcohol, EPA 524.2 MBAS, EPA 425.1 Diquat/Paraquat, EPA 549.2 Perchlorate, EPA 314.1 Radiologicals, Radio SVOC, EPA 525.2 Total Cyanide SM4500CN:E EDB & DBCP, EPA 504.1 SRL, EPA 524M-TCP 2378 TCDD (Dioxin), EPA 1613B Chromium VI, EPA 218.6		17 1 cooler
SPEC ENG OPS SAMPLE	E150826019	PCBs, EPA 508 T22 VOC, EPA 524 Herbicides, EPA 515.3 Glyphosate, EPA 547 Carbamates, EPA 531.1 Endothall, EPA 548.1 tert-Butyl Alcohol, EPA 524.2 MBAS, EPA 425.1 Diquat/Paraquat, EPA 549.2 Perchlorate, EPA 314.1 Radiologicals, Radio SVOC, EPA 525.2 Total Cyanide SM4500CN:E EDB & DBCP, EPA 504.1 SRL, EPA 524M-TCP 2378 TCDD (Dioxin), EPA 1613B Chromium VI, EPA 218.6		17 1 cooler

Carrier Release Chain of Custody Attached? Yes ☐ No ☐

RELINQUISHED BY	DATE	TIME	RECEIVED BY
	8/26/15	1335	
	8/26 110		

Wednesday, August 26, 2015 9:21:12 AM

Page 1 of 3

B5H2699 AB
AUG 26 2015

mailing
P.O. Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

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www.babcocklabs.com

CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

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Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA 92572-8300

Report Date: 15-Sep-2015

Analytical Report: Page 3 of 3
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells

Work Order Number: B5H2699

Received on Ice (Y/N): Yes Temp: 5 °C

Eastern Municipal Water District

Contracted Laboratory Analysis Request Form

Test Request Details

2378 TCDD (Dioxin).
2,3,7,8-TCDD (Dioxin)
Carbamates, EPA
CARBAMATES
Carbofuran
Oxamyl
Chromium VI, EPA
Chromium Hexavalent
Diquat/Paraquat.
Diquat
EDB & DBCP, EPA
1,2-Dibromo-3-Chloro
EDB AND DBCP BY
Ethylene Dibromide
Endothall, EPA 548.1
Endothall
Glyphosate, EPA 547
Glyphosate
Herbicides, EPA
2,4,5-TP
2,4-D
Bentazon
Dalapon
Dinoseb
HERBACIDES 515
Pentachlorophenol
Picloram
MBAS, EPA 425.1
Foaming Agents
PCBs, EPA 508
CHLORINATED
Chlordane
Endrin
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopenta
Methoxychlor
PCBs-Total
Toxaphene
gamma-BHC
Perchlorate, EPA
GENERAL
Perchlorate
Radiologicals, Radio
Gross Alpha
Gross Alpha Counting
Radium 226
Radium 226 Counting
Radium 228
Radium 228 Counting
Uranium
SRL, EPA 524M-TCP
1,2,3-Trichloropropane
SVOC, EPA 525.2
Alachlor
Atrazine
Benzo (a) pyrene
Bis(2-ethylhexyl)adipa
Bis(2-ethylhexyl)phtha
Molinate
SEMI-VOLATILE ORG
Simazine
Thiobencarb
T22 VOC, EPA 524
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroeth
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2,4-Trichlorobenzen
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichloropropene
1,4-Dichlorobenzene
Benzene
Carbon Tetrachloride
Chlorobenzene
Ethylbenzene
Methyl-Tert-Butyl-Ethe
Methylene Chloride
Styrene
Tetrachloroethene
Toluene
Trichloroethene
Trichlorofluoromethan
Trichlorotrifluoroethan
VOLATILE ORGANIC
Vinyl Chloride
Xylenes (Total)
cis-1,2-Dichloroethene
trans-1,2-Dichloroethe
Total Cyanide
Cyanide
tert-Butyl Alcohol.
Dichlorodifluorometha
Ethyl-Tert-Butyl Ether
Tert-Amyl-Methyl
Tert-Butyl Alcohol

Wednesday, August 26, 2015 9:21:13 AM

Page 3 of 3

B5H2699 AB
AUG 26 2015

mailing
P.O. Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

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F 951 653 1662
www.babcocklabs.com

CA ELAP No. 2698
EPA no. CA00102
LACSD No., 10119

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Client Name:	Eastern Municipal Water Dist.	Analytical Report:	Page 2 of 2
Contact:	Suzanne Watson	Project Name:	EMWD-Explor Wells
Address:	P.O. Box 8300 Perris, CA, 92572-8300	Project Number:	Engineering Exploratory Wells
		Work Order Number:	**B5H2723**
Report Date:	25-Sep-2015	Received on Ice (Y/N	Yes Temp: 5 °C

Approval

Babcock Laboratories certify that the information presented as part of this report meets the minimum quality standards in the analytical methods, if referenced. Exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

cc:

mailing
P.O. Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

NELAP no. 02101CA
CA Elap no. 2698
EPA no. CA00102

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Client Name: Eastern Municipal Water Dist.
Contact: Suzanne Watson
Address: P.O. Box 8300
Perris, CA, 92572-8300

Analytical Report: Page 2 of 3
Project Name: EMWD-Explor Wells
Project Number: Engineering Exploratory Wells
Work Order Number: B5H2723

Report Date: 25-Sep-2015

Received on Ice (Y/N Yes Temp: 5 °C

Location	EMWD Lab ID #	Analysis Requested	Account #	# Bottles
SPEC ENG OPS SAMPLE	E150826022	PCBs, EPA 508 T22 VOC, EPA 524 Herbicides, EPA 515.3 Glyphosate, EPA 547 Carbamates, EPA 531.1 Endothall, EPA 548.1 tert-Butyl Alcohol, EPA 524.2 MBAS, EPA 425.1 Diquat/Paraquat, EPA 549.2 Perchlorate, EPA 314.1 Radiologicals, Radio SVOC, EPA 525.2 Total Cyanide SM4500CN:E EDB & DBCP, EPA 504.1 SRL, EPA 524M-TCP 2378 TCDD (Dioxin), EPA 1613B Chromium VI, EPA 218.6		17 1 bottle

Remarks:

Collected: 08/25/15 10:05 by A.Wickham Project: Engineer Exploratory Well

Call the Water Quality Dept., Laboratory Division, at (951) 928-3777, ext. 6278 if you have any questions regarding this request.

Carrier Release

Chain of Custody Attached? Yes ☐ No ☐

RELINQUISHED BY	DATE	TIME	RECEIVED BY
	8/26/15	1335	
	8/26/15	1410	

Wednesday, August 26, 2015 9:21:13 AM

Page 2 of 3

C185

B5H2723
B5H2699 AB

AUG 26 2015

mailing
P.O. Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

NELAP no. 02101CA
CA Elap no. 2698
EPA no. CA00102

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: 1
2. Shipper tracking numbers _____
3. Were samples received in a chilled condition?
   Temps: RRT / _____ / _____ / _____ / _____ / _____ / _____ / _____
4. Surface water (SWTR) bact samples: A sample that has a temperature upon reciept of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **Yes** / No / N/A
6. Verify sample date, time, sampler **Yes** / No / N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **Yes** / No
8. Were sample custody seals intact? Yes / No / **N/A**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **Yes** / No
2. Did bottle labels correspond with the client's ID's? **Yes** / No
3. Were all bottles requiring sample preservation properly preserved? Yes / No / **N/A** FGL
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? Yes / No / **N/A**
5. Were all analyses within holding times at time of reciept? **Yes** / No
6. Have rush or project due dates been checked and accepted? Yes / No / **N/A**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by: Reviewed and Approved By **Nicole Parson** Digitally signed by Nicole Parson Title: Sample Receiving Date: 08/28/2015-12:29:15

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

2. Person Contacted: _____ Phone Number: _____
   Initiated By: _____ Date: _____
   Problem:

   Resolution:

(2000014)
Babcock Laboratories, Inc.
SP 1509639
NMP-08/28/2015-12:29:15

SUBCONTRACT ORDER Printed: 8/27/2015 8:57

Babcock Laboratories, Inc.

B5H2723

1509039(2of2)

Analysis	Due	Expires Regulatory Days Past Date Sampled	Laboratory ID	Comments
Sample ID: B5H2723-04 **Water**		**Sampled: 08/25/15 10:05**	**E150826022 SPEC** **ENG OPS SAMPLE**	*Proj.No.:*Engineering Exploratory Wells
Radio-Uranium	09/22/15 17:00	02/21/16 10:05		
Radio-Gross Alpha	09/22/15 17:00	02/21/16 10:05		
Radio-Radium 226	09/22/15 17:00	02/21/16 10:05		
Radio-Radium 228	09/22/15 17:00	02/21/16 10:05		
Containers Supplied:				
Half gal Poly-HNO3 (A)	Quart Poly - HNO3 (B)	Quart Poly - HNO3 (C)	Quart Poly - HNO3 (D)	

All Containers Intact: ____ Yes ____ No Samples Preserved Properly: ____ Yes ____ No

Samples Received at ____ oC Sample Lables / COC Agree: ____ Yes ____ No Custody Seals Present: ____ Yes ____ No

Please forward all acknowledgements of sample receipt, final reports and invoices to data@babcocklabs.com
NO HARDCOPIES PLEASE.

- David Kelley Eco 8/27/15

Released By Date Received By Date

FedEx

Released By Date Received By Date

5911 2349 8490 4

5911 2349 8249 15

SUBCONTRACT ORDER Printed: 8/27/2015 8:57

Babcock Laboratories, Inc.

B5H2723

1509639 (4 of 21)

Analysis	Due	Expires Regulatory Days Past Date Sampled	Laboratory ID	Comments
Sample ID: B5H2723-04 **Water**		**Sampled: 08/25/15 10:05**	**E150826022 SPEC ENG OPS SAMPLE**	*Proj.No.:*Engineering Exploratory Wells
Radio-Uranium	09/22/15 17:00	02/21/16 10:05		
Radio-Gross Alpha	09/22/15 17:00	02/21/16 10:05		
Radio-Radium 226	09/22/15 17:00	02/21/16 10:05		
Radio-Radium 228	09/22/15 17:00	02/21/16 10:05		
Containers Supplied:				
Half gal Poly-HNO3 (A)	Quart Poly - HNO3 (B)	Quart Poly - HNO3 (C)	Quart Poly - HNO3 (D)	

All Containers Intact: ____ Yes ____ No Samples Preserved Properly: ____ Yes ____ No

Samples Received at ____ oC Sample Lables / COC Agree: ____ Yes ____ No Custody Seals Present: ____ Yes ____ No

Please forward all acknowledgements of sample receipt, final reports and invoices to data@babcocklabs.com
NO HARDCOPIES PLEASE.

David Kelley ESD 8/27/15
Released By Date Received By Date

FedEx 08/28 1100
Released By Date Received By Date

5911234984915
5911234984904

September 24, 2015
Babcock Laboratories, Inc.

Lab ID : SP 1509639
Customer : 2-14

Radio QC

908.0	09/17/2015:213848 All analysis quality controls are within established criteria
	09/17/2015:210809 All preparation quality controls are within established criteria
Ra - 05	09/07/2015:213145 All analysis quality controls are within established criteria
	09/05/2015:210173 All preparation quality controls are within established criteria

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S. Title: Laboratory Director Date: 2015-09-24

September 24, 2015

Lab ID : SP 1509639-002
Customer ID : 2-14

Babcock Laboratories, Inc.
P.O. Box 432
Riverside, CA 92502

Sampled On : August 25, 2015-10:05
Sampled By : A. Wickham
Received On : August 28, 2015-11:00
Matrix : Water

Description : E150826018 SPEC ENG OPS SAMPLE
Project : B5H2723-02

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry P:1'5								
Gross Alpha	4.46 ± 2.89	3.10	pCi/L	15/5	900.0	09/04/15-06:50 2P1510347	900.0	09/05/15-07:00 2A1513280
Total Alpha Radium (226)	0.792 ± 0.313	0.363	pCi/L	3	903.0	09/05/15-13:45 2P1510397	903.0	09/08/15-11:20 2A1513198
Uranium	1.17 ± 0.915	0.300	pCi/L	20	908.0	09/17/15-06:15 2P1510809	908.0	09/17/15-14:16 2A1513848
Ra 228	0.000 ± 0.484	0.200	pCi/L	2	Ra - 05	09/05/15-11:30 2P1510173	Ra - 05	09/07/15-12:20 2A1513145

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: HNO3 pH < 2 * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No. 1573

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory
3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

September 24, 2015

Babcock Laboratories, Inc.
P.O. Box 432
Riverside, CA 92502

Lab ID : SP 1509639-004
Customer ID : 2-14

Sampled On : August 25, 2015-10:05
Sampled By : A. Wickham
Received On : August 28, 2015-11:00
Matrix : Water

Description : E150826022 SPEC ENG OPS SAMPLE
Project : B5H2723-04

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry P:T5								
Gross Alpha	3.39 ± 2.62	2.39	pCi/L	15/5	900.0	09/04/15-06:50 2P1510347	900.0	09/05/15-09:00 2A1513279
Total Alpha Radium (226)	0.197 ± 0.183	0.363	pCi/L	3	903.0	09/05/15-13:45 2P1510397	903.0	09/08/15-12:00 2A1513198
Uranium	3.15 ± 1.31	0.300	pCi/L	20	908.0	09/17/15-06:15 2P1510809	908.0	09/17/15-15:06 2A1513848
Ra 228	0.000 ± 0.600	0.200	pCi/L	2	Ra - 05	09/05/15-11:30 2P1510173	Ra - 05	09/07/15-13:00 2A1513145

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: HNO3 pH < 2 * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
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Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory
3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

Maxxam

CONFIRMATION-RECEIPT OF SAMPLES FOR ANALYSIS

Maxxam Job # B5H3763

Client Project #: B5H2723
Quote #: B30972

4 Samples

Samples Received 2015/08/28
Client Confirmation 2015/08/28
Expected Report Delivery 2015/09/18 18:00

Report will be sent to:

Cindy A Waddell
BABCOCK LABS
PO BOX 432
RIVERSIDE
92502-0432
Ph 951-653-3351
Fax 951-653-1662
cwaddell@babcocklabs.com;
data@babcocklabs.com

Invoice will be sent to:

Cindy A Waddell
BABCOCK LABS
PO BOX 432
RIVERSIDE
92502-0432
Ph 951-653-3351
Fax 951-653-1662
cwaddell@babcocklabs.com;
data@babcocklabs.com

We have received the following samples:

B5H2723-01 Sampled 2015/08/25 10:05 COC# NA Matrix: WATER
Maxxam #: AWT901
2,3,7,8-TCDD in Water (1613B)
Preparation of drinking water by 1613

B5H2723-02 Sampled 2015/08/25 10:05
Maxxam #: AWT902
2,3,7,8-TCDD in Water (1613B)
Preparation of drinking water by 1613

B5H2723-03 Sampled 2015/08/25 10:05
Maxxam #: AWT903
2,3,7,8-TCDD in Water (1613B)
Preparation of drinking water by 1613

B5H2723-04 Sampled 2015/08/25 10:05
Maxxam #: AWT904
2,3,7,8-TCDD in Water (1613B)
Preparation of drinking water by 1613

Comments:
Maxxam has received the following samples for analysis and the requested analyses are listed below. Your Expected Report Delivery date is listed at the top of Page 1 of this report. For revisions/corrections please contact your Maxxam Project Management team at 905-817-5700 or Fax 905-817-5777.
Your Maxxam Project Manager for this submission is: Melissa DiGrazia.
Thank you for your submission. Note: Summa ® canisters will be held for 5 business days after analysis at which time they will be cleaned.

AIR

SUBCONTRACT ORDER Printed: 8/27/2015 11:01

Babcock Laboratories, Inc.

B5H2723

SENDING LABORATORY:

Babcock Laboratories, Inc.
6100 Quail Valley Court
Riverside, CA 92507-0704
Phone: (951) 653-3351
Fax: (951) 653-1662
Project Manager: Cindy A. Waddell

RECEIVING LABORATORY:

Maxxam Analytics, Inc. - Burlington
931 Bailey Ave.
Buffalo, NY 14206
Phone :(800) 668-0639
Fax: -

28-Aug-15 14:15
Melissa DiGrazia
B5H3763

ABH ENV-586

Copy/Relog from B5H2699.
Client: Eastern Municipal Water Dist.
Sampler: A. Wickham

Analysis	Due	Expires Regulatory Days Past Date Sampled	Laboratory ID	Comments
Sample ID: B5H2723-01 **Water**		**Sampled: 08/25/15 10:05**	**E150826015 SPEC ENG OPS SAMPLE**	***Proj.No.:*Engineering Exploratory Wells**
Dioxin *Containers Supplied:* 1L Amber- Unpres. (E)	09/22/15 17:00	09/22/15 10:05		
Sample ID: B5H2723-02 **Water**		**Sampled: 08/25/15 10:05**	**E150826018 SPEC ENG OPS SAMPLE**	***Proj.No.:*Engineering Exploratory Wells**
Dioxin *Containers Supplied:* 1L Amber- Unpres. (E)	09/22/15 17:00	09/22/15 10:05		
Sample ID: B5H2723-03 **Water**		**Sampled: 08/25/15 10:05**	**E150826019 SPEC ENG OPS SAMPLE**	***Proj.No.:*Engineering Exploratory Wells**
Dioxin *Containers Supplied:* 1L Amber- Unpres. (E)	09/22/15 17:00	09/22/15 10:05		
Sample ID: B5H2723-04 **Water**		**Sampled: 08/25/15 10:05**	**E150826022 SPEC ENG OPS SAMPLE**	***Proj.No.:*Engineering Exploratory Wells**
Dioxin *Containers Supplied:* 1L Amber- Unpres. (E)	09/22/15 17:00	09/22/15 10:05		

All Containers Intact: _____ Yes _____ No Samples Preserved Properly: _____ Yes _____ No

Samples Received at _____ oC Sample Lables / COC Agree: _____ Yes _____ No Custody Seals Present: _____ Yes _____ No

Please forward all acknowledgements of sample receipt, final reports and invoices to data@babcocklabs.com
NO HARDCOPIES PLEASE.

Released By	Date	Received By	Date
Dan Kelley FED	8/27/15	KARAN GULANI	2015/08/28 14:15
Released By	Date	Received By	Date

3.5/3.5/3.4

Maxxam Job #: B5H3763
Report Date: 2015/09/14

BABCOCK LABS
Client Project #: B5H2723

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		AWT901							
Sampling Date		2015/08/25 10:05							
COC Number		NA				TOXIC EQUIVALENCY		# of	
	UNITS	B5H2723-01	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Dioxins & Furans									
2,3,7,8-Tetra CDD *	pg/L	1.1 U	1.1	2.0	N/A	1.00	1.10		4186208
TOTAL TOXIC EQUIVALENCY	pg/L						1.10		
Surrogate Recovery (%)									
C13-2378 TetraCDD *	%	101							4186208

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin -like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

Maxxam ID		AWT902							
Sampling Date		2015/08/25 10:05							
COC Number		NA				TOXIC EQUIVALENCY		# of	
	UNITS	B5H2723-02	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Dioxins & Furans									
2,3,7,8-Tetra CDD *	pg/L	1.0 U	1.0	2.0	N/A	1.00	1.00		4186208
TOTAL TOXIC EQUIVALENCY	pg/L						1.00		
Surrogate Recovery (%)									
C13-2378 TetraCDD *	%	105							4186208

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin -like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5H3763
Report Date: 2015/09/14

BABCOCK LABS
Client Project #: B5H2723

TEST SUMMARY

Maxxam ID: AWT901
Sample ID: B5H2723-01
Matrix: Water

Collected: 2015/08/25
Shipped:
Received: 2015/08/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDD in Drinking Water (1613B)	HRMS/MS	4186208	2015/09/04	2015/09/13	Kay Shaw

Maxxam ID: AWT902
Sample ID: B5H2723-02
Matrix: Water

Collected: 2015/08/25
Shipped:
Received: 2015/08/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDD in Drinking Water (1613B)	HRMS/MS	4186208	2015/09/04	2015/09/13	Kay Shaw

Maxxam ID: AWT903
Sample ID: B5H2723-03
Matrix: Water

Collected: 2015/08/25
Shipped:
Received: 2015/08/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDD in Drinking Water (1613B)	HRMS/MS	4186208	2015/09/04	2015/09/13	Kay Shaw

Maxxam ID: AWT904
Sample ID: B5H2723-04
Matrix: Water

Collected: 2015/08/25
Shipped:
Received: 2015/08/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
2,3,7,8-TCDD in Drinking Water (1613B)	HRMS/MS	4186208	2015/09/04	2015/09/13	Kay Shaw

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B5H3763
Report Date: 2015/09/14

BABCOCK LABS
Client Project #: B5H2723

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
4186208	KKS	Spiked Blank	2,3,7,8-Tetra CDD	2015/09/12		94	%	67 - 158
			C13-2378 TetraCDD	2015/09/12		106	%	24 - 164
4186208	KKS	Method Blank	2,3,7,8-Tetra CDD	2015/09/12	0.74 U, EDL=0.74		pg/L	
			C13-2378 TetraCDD	2015/09/12		101	%	24 - 164

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

NORTH COAST LABORATORIES LTD.

September 04, 2015

Babcock Laboratories, Inc.
6100 Quail Valley Court
Riverside, CA 92507

Attn: Cindy A. Waddell

RE: B5H2723

Order No.: 1508525
Invoice No.: 123138
PO No.: B5H2723
ELAP No.1247-Expires July 2016

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	B5H2723-01
01B	B5H2723-01
02A	B5H2723-02
02B	B5H2723-02
03A	B5H2723-03
03B	B5H2723-03
04A	B5H2723-04
04B	B5H2723-04

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

Approved for release by:

Trudie Blasi, Project Manager

Date: 04-Sep-2015
WorkOrder: 1508525

ANALYTICAL REPORT

Client Sample ID: B5H2723-01
Lab ID: 1508525-01A
Received: 8/28/2015
Collected: 8/25/2015 10:05

Test Name: Glyphosate
Reference: EPA 547

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Glyphosate	ND		5.0	µg/L	1.0		9/1/2015

Client Sample ID: B5H2723-01
Lab ID: 1508525-01B
Received: 8/28/2015
Collected: 8/25/2015 10:05

Test Name: EPA 549.2
Reference: EPA 549.2

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Diquat (dissolved)	ND		0.40	µg/L	1.0	8/31/2015	9/3/2015

Client Sample ID: B5H2723-02
Lab ID: 1508525-02A
Received: 8/28/2015
Collected: 8/25/2015 10:05

Test Name: Glyphosate
Reference: EPA 547

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Glyphosate	ND		5.0	µg/L	1.0		9/1/2015

Client Sample ID: B5H2723-02
Lab ID: 1508525-02B
Received: 8/28/2015
Collected: 8/25/2015 10:05

Test Name: EPA 549.2
Reference: EPA 549.2

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Diquat (dissolved)	ND		0.40	µg/L	1.0	8/31/2015	9/3/2015

Client Sample ID: B5H2723-03
Lab ID: 1508525-03A
Received: 8/28/2015
Collected: 8/25/2015 10:05

Test Name: Glyphosate
Reference: EPA 547

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Glyphosate	ND		5.0	µg/L	1.0		9/1/2015

Client Sample ID: B5H2723-03
Lab ID: 1508525-03B
Received: 8/28/2015
Collected: 8/25/2015 10:05

Test Name: EPA 549.2
Reference: EPA 549.2

Parameter	Result	Flag	Limit	Units	DF	Extracted	Analyzed
Diquat (dissolved)	ND		0.40	µg/L	1.0	8/31/2015	9/3/2015

North Coast Laboratories, Ltd.

Date: 9/4/2015

CLIENT: Babcock Laboratories, Inc.
Work Order: 1508525
Project: B5H2723

QC SUMMARY REPORT
Method Blank

Sample ID **MB-090115A** Batch ID: **R83676** Test Code: **547W** Units: **µg/L** Analysis Date **9/1/2015 14:30:23** Prep Date
Client ID: Run ID: **ORLC6_150901A** SeqNo: **1205121**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Glyphosate	ND	5.0									

Sample ID **MB-32428** Batch ID: **32428** Test Code: **549W** Units: **µg/L** Analysis Date **9/3/2015 11:10:42** Prep Date **8/31/2015**
Client ID: Run ID: **ORLC2_150903A** SeqNo: **1205302**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diquat (dissolved)	ND	0.40									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

SUBCONTRACT ORDER Printed: 8/26/2015 21:10

Babcock Laboratories, Inc.

B5H2723

SENDING LABORATORY:

Babcock Laboratories, Inc.
6100 Quail Valley Court
Riverside, CA 92507-0704
Phone: (951) 653-3351
Fax: (951) 653-1662
Project Manager: Cindy A. Waddell

RECEIVING LABORATORY:

North Coast Labs - Subcontract
5680 West End Road
Arcata, CA 95521
Phone :(707) 822-4649
Fax: (707) 822-6831

Copy/Relog from B5H2699.
Client: Eastern Municipal Water Dist.
Sampler: A. Wickham

Analysis	Due	Expires / Regulatory / Days Past Date Sampled	Laboratory ID	Comments
Sample ID: B5H2723-01 **Water**		**Sampled: 08/25/15 10:05**	**E150826015 SPEC ENG OPS SAMPLE**	***Proj.No.:*** **Engineering Exploratory Wells**
547	09/22/15 17:00	09/08/15 10:05		
549-Diquat	09/22/15 17:00	09/01/15 10:05		
Containers Supplied:				
Quart Poly - Unpres (F)	Voa Vial -Unpres (G)	Voa Vial -Unpres (H)		
Sample ID: B5H2723-02 **Water**		**Sampled: 08/25/15 10:05**	**E150826018 SPEC ENG OPS SAMPLE**	***Proj.No.:*** **Engineering Exploratory Wells**
549-Diquat	09/22/15 17:00	09/01/15 10:05		
547	09/22/15 17:00	09/08/15 10:05		
Containers Supplied:				
Quart Poly - Unpres (F)	Voa Vial -Unpres (G)	Voa Vial -Unpres (H)		
Sample ID: B5H2723-03 **Water**		**Sampled: 08/25/15 10:05**	**E150826019 SPEC ENG OPS SAMPLE**	***Proj.No.:*** **Engineering Exploratory Wells**
547	09/22/15 17:00	09/08/15 10:05		
549-Diquat	09/22/15 17:00	09/01/15 10:05		
Containers Supplied:				
Quart Poly - Unpres (F)	Voa Vial -Unpres (G)	Voa Vial -Unpres (H)		
Sample ID: B5H2723-04 **Water**		**Sampled: 08/25/15 10:05**	**E150826022 SPEC ENG OPS SAMPLE**	***Proj.No.:*** **Engineering Exploratory Wells**
547	09/22/15 17:00	09/08/15 10:05		
549-Diquat	09/22/15 17:00	09/01/15 10:05		
Containers Supplied:				
Quart Poly - Unpres (F)	Voa Vial -Unpres (G)	Voa Vial -Unpres (H)		

Appendix D
Borehole Geophysical Logs

Serial:	D4
Model:	DTQ
Shop Calibration Performed:	Tue Mar 03 16:25:53 2015
Before Survey Verification Performed:	Tue Mar 03 16:22:41 2015
After Survey Verification Performed:	Tue Mar 03 16:23:12 2015

Shop Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		Gain	Offset
Short	9.332	100.892		10.200	102.200	Ohm-m	1.005	0.823
Long	9.764	99.525		10.200	102.200	Ohm-m	1.025	-17.000
IEE	220.940	8904.920	counts	0.242	9.746	A		
VSN	68.200	10148.760	counts	1.301	193.575	V		
VLN	87.620	2572.260	counts	1.671	49.063	V		

Before Survey Verification

	Readings			References			Results	
	Zero	Cal		Zero	Cal		Gain	Offset
Short	26.077	101.434		27.475	101.439	Ohm-m	0.982	1.879
Long	144.935	102.833		102.842	102.842	Ohm-m	0.911	9.170
IEE	221.720	8915.120	counts	0.243	9.757	A		
VSN	64.960	10159.840	counts	1.239	193.787	V		
VLN	90.260	2575.000	counts	1.722	49.115	V		

After Survey Verification

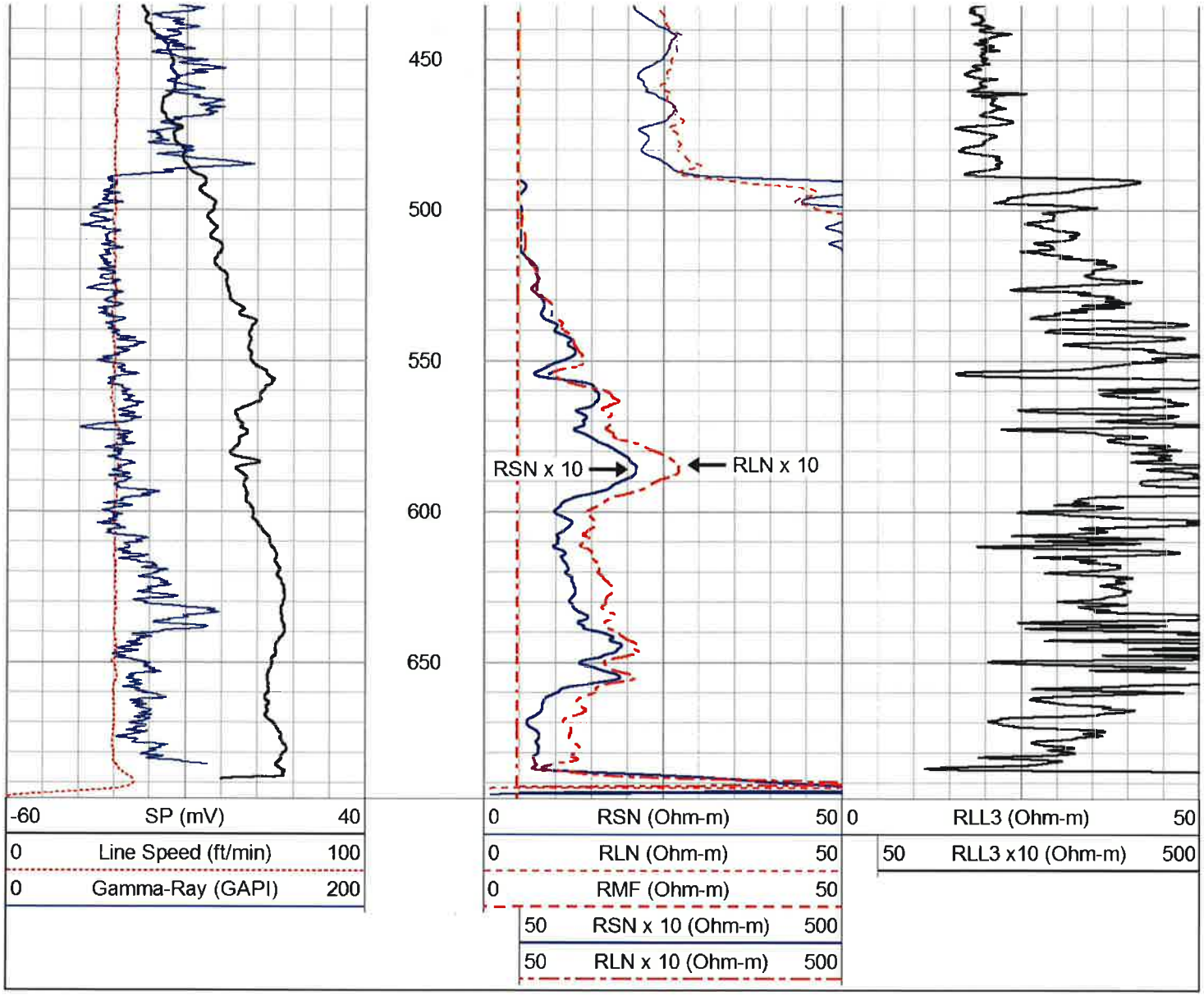
	Readings			References			Results	
	Zero	Cal		Zero	Cal		Gain	Offset
Short	25.938	101.430		26.077	101.434	Ohm-m	0.998	0.186
Long	144.084	102.829		102.833	102.833	Ohm-m	1.021	-2.108
IEE	222.980	8921.480	counts	0.244	9.764	A		
VSN	64.980	10166.720	counts	1.239	193.918	V		
VLN	90.240	2576.740	counts	1.721	49.148	V		

After Survey Verification compared to Before Survey Calibration

	Zero			Cal		
	Before	After		Before	After	
Short	27.475	26.077	Ohm-m	101.439	101.434	Ohm-m
Long	141.193	144.935	Ohm-m	102.842	102.833	Ohm-m

Gamma Ray Calibration Report

Serial Number:	D4	
Tool Model:	ELOG	
Performed:	Tue Mar 03 16:50:57 2015	
Calibrator Value:	162.0	GAPI
Background Reading:	124.7	cps
Calibrator Reading:	352.0	cps
Sensitivity:	0.7129	GAPI/cps


450
500
550
600
650
RSN x 10
RLN x 10
-60 SP (mV) 40
0 Line Speed (ft/min) 100
0 Gamma-Ray (GAPI) 200
0 RSN (Ohm-m) 50
0 RLN (Ohm-m) 50
0 RMF (Ohm-m) 50
50 RSN x 10 (Ohm-m) 500
50 RLN x 10 (Ohm-m) 500
0 RLL3 (Ohm-m) 50
50 RLL3 x10 (Ohm-m) 500

PACIFIC SURVEYS

LATEROLOG 3
GAMMA-RAY

Job No. 20199

File No.

Company YELLOW JACKET DRILLING SERVICES

Well EMWD_EX_PV01

Field PERRIS

County RIVERSIDE State CA

Location:

115 E. NANCE ST.
GPS: N 33o 51.236' W 117o 13.382'

Sec. Twp. Rge.

Other Services:

ELOG
SONIC/VDL

Permanent Datum	G.L.		Elevation above perm. datum	Elevation K.B.
Log Measured From	G.L.	0'		D.F.
Drilling Measured From	G.L.			G.L.

Date	09-02-2015		
Run Number	ONE		
Depth Driller	695'		
Depth Logger	695'		
Bottom Logged Interval	695'		
Top Log Interval	0'		
Casing Driller	9" @ 20'		
Casing Logger	20'		
Bit Size	6.5"		
Type Fluid in Hole	BENTONITE		
Density / Viscosity	N/A		
pH / Fluid Loss	N/A		
Source of Sample	TANK		
Rm @ Meas. Temp	4.95 @ 75F		
Rmf @ Meas. Temp	4.69 @ 75F		
Rmc @ Meas. Temp	N/A		
Source of Rmf / Rmc	MEASURE		
Rm @ BHT	N/A		
Time Circulation Stopped	0830		
Time Logger on Bottom	1000		
Max. Recorded Temperature	N/A		
Equipment Number	PS-5		
Location	LA		
Recorded By	SCHUMACHER		
Witnessed By	M. MAYRY		

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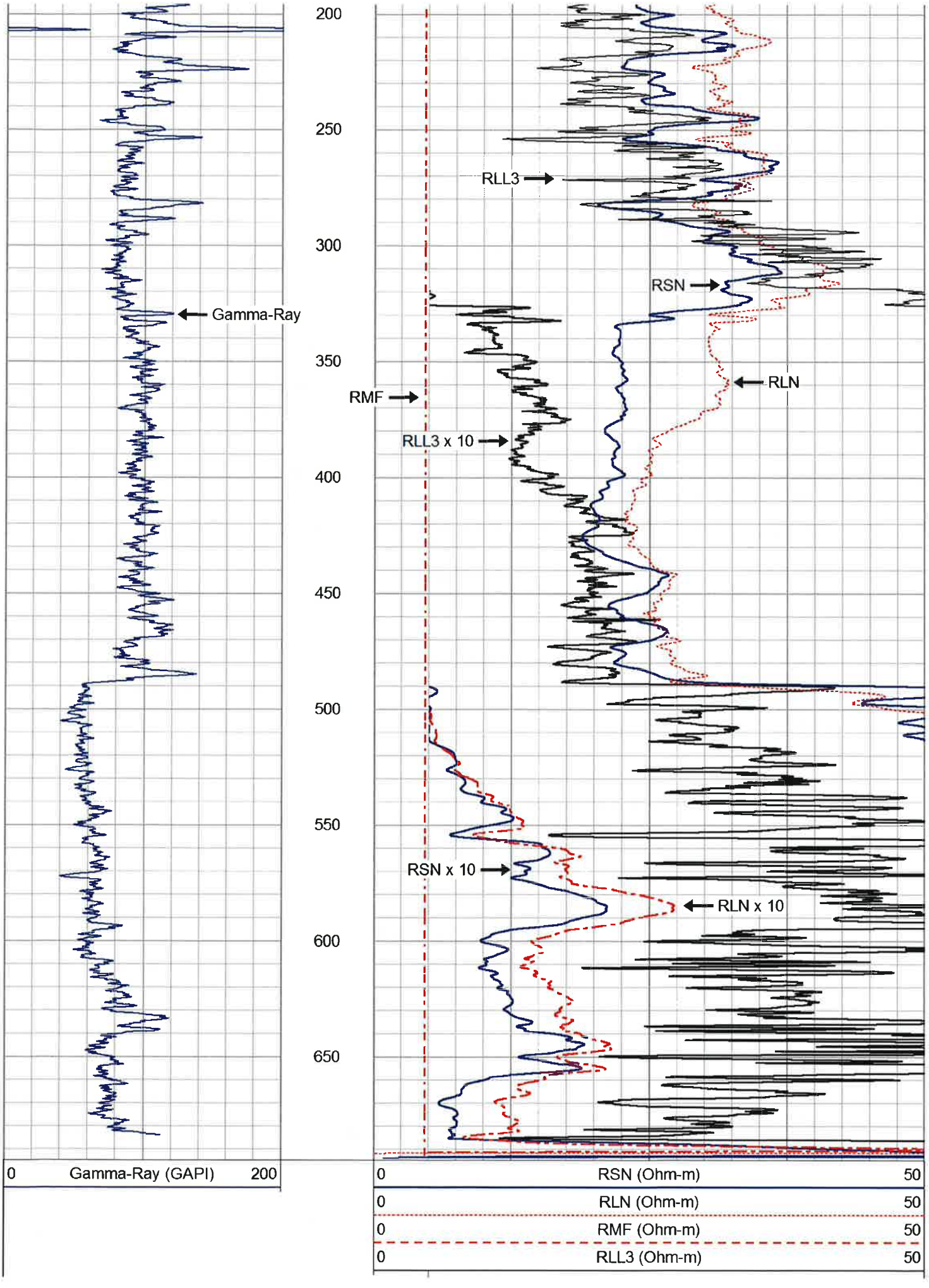
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

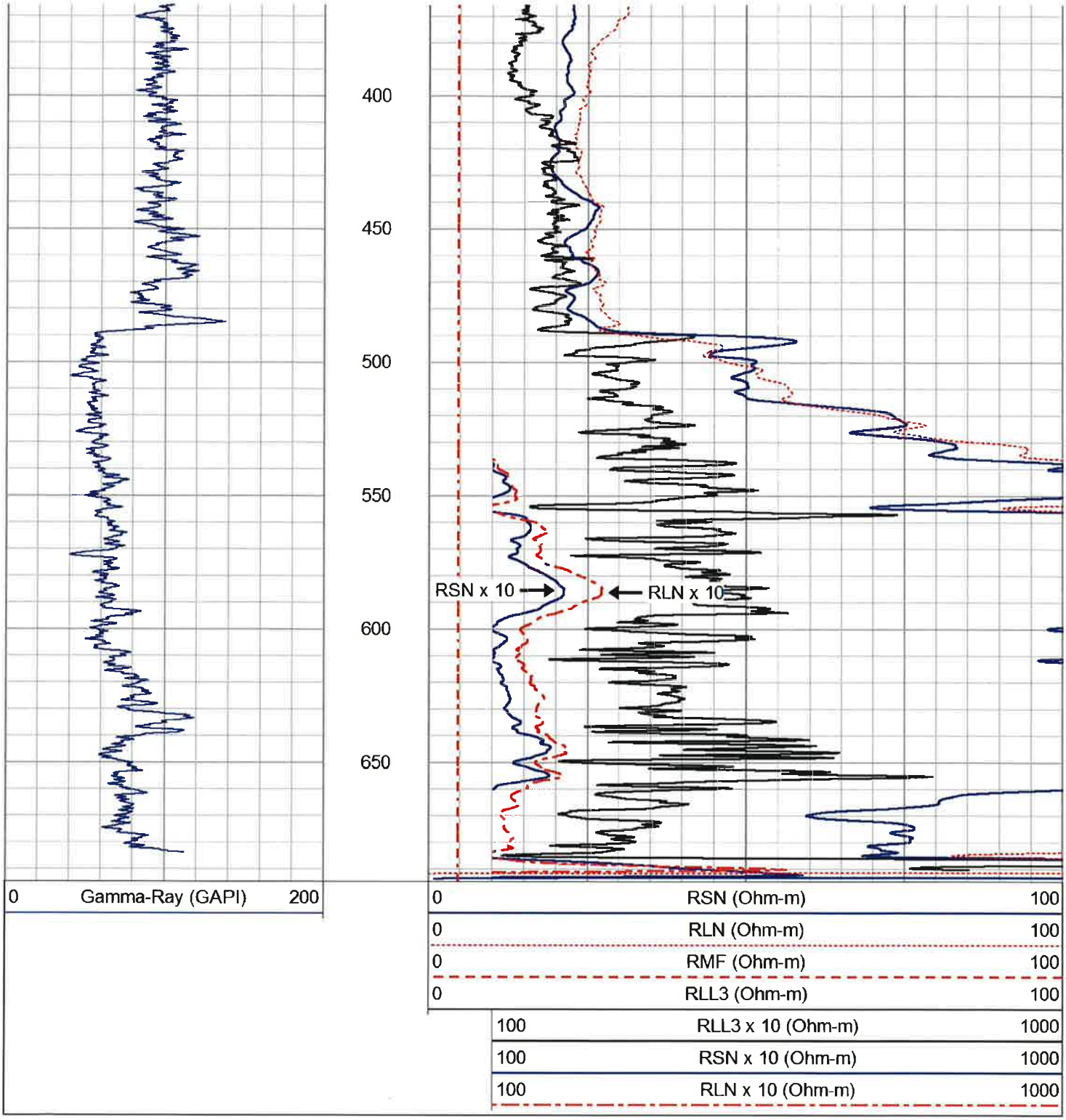
Comments

Calibration Report

Database File 20199.db
Dataset Pathname LL3
Dataset Creation Wed Sep 02 10:48:13 2015

Gamma Ray Calibration Report


200
250
300
350
400
450
500
550
600
650
RLL3
RSN
RLN
RMF
RLL3 x 10
RSN x 10
RLN x 10
Gamma-Ray
0
Gamma-Ray (GAPI)
200
0
RSN (Ohm-m)
50
0
RLN (Ohm-m)
50
0
RMF (Ohm-m)
50
0
RLL3 (Ohm-m)
50


400
450
500
550
600
650
RSN x 10
RLN x 10
0 Gamma-Ray (GAPI) 200
0 RSN (Ohm-m) 100
0 RLN (Ohm-m) 100
0 RMF (Ohm-m) 100
0 RLL3 (Ohm-m) 100
100 RLL3 x 10 (Ohm-m) 1000
100 RSN x 10 (Ohm-m) 1000
100 RLN x 10 (Ohm-m) 1000

PACIFIC SURVEYS

SONIC VELOCITY VARIABLE DENSITY

Job No. 20199	Company	YELLOW JACKET DRILLING SERVICES	
	Well	EMWD_EX_PV01	
File No.	Field	PERRIS	
	County	RIVERSIDE	State CA

Location:

115 E. NANCE ST.
GPS: N 33o 51.236' W 117o 13.382'

Sec. Twp. Rge.

Other Services:
GR/LL3
ELOG

Permanent Datum	G.L.		Elevation	Elevation
Log Measured From	G.L.	0'	above perm. datum	K.B.
Drilling Measured From	G.L.			D.F.
				G.L.

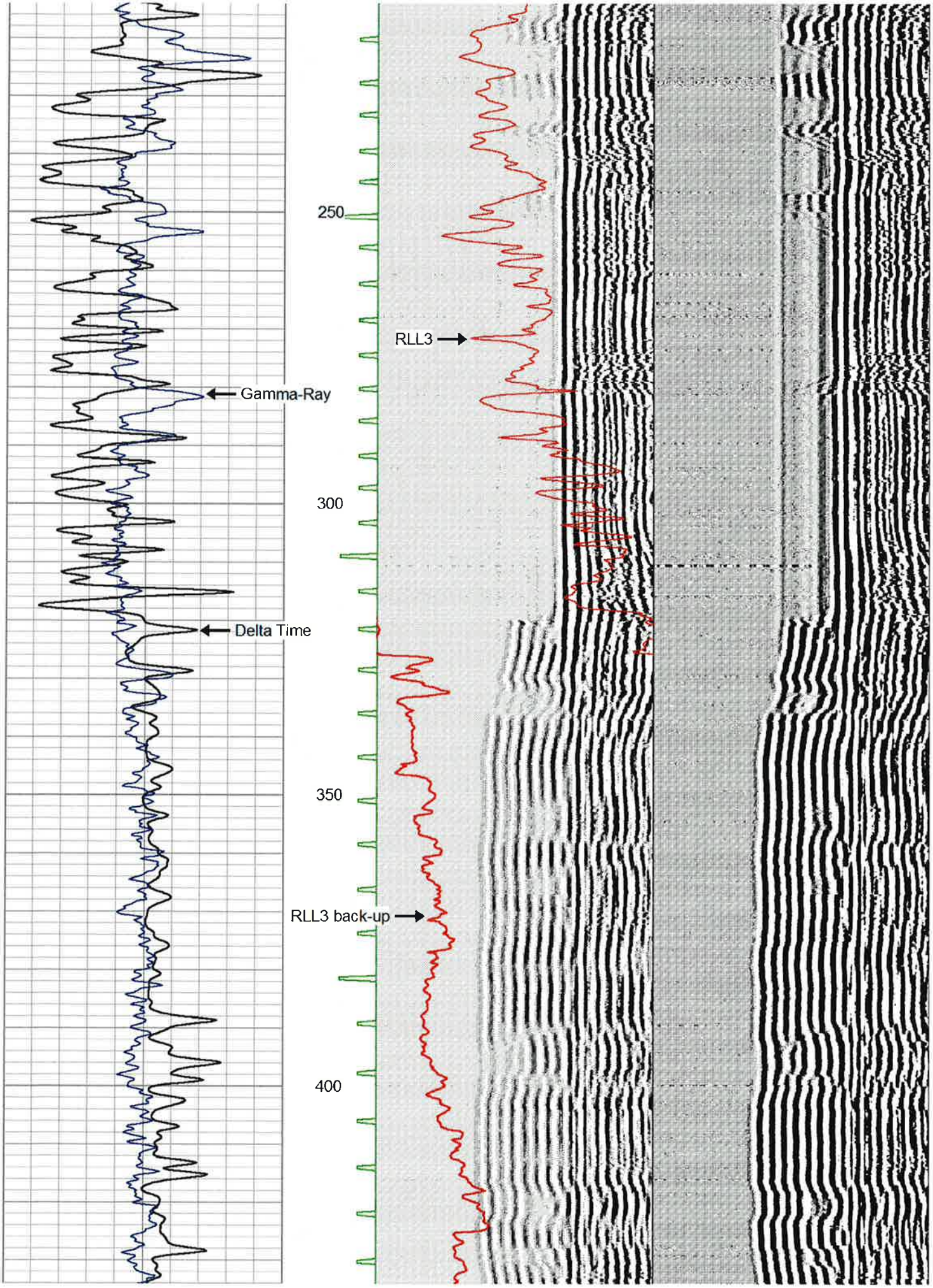
Date	09-02-2015		
Run Number	ONE		
Depth Driller	695'		
Depth Logger	695'		
Bottom Logged Interval	695'		
Top Log Interval	0'		
Casing Driller	9" @ 20'		
Casing Logger	20'		
Bit Size	6.5"		
Type Fluid in Hole	BENTONITE		
Density / Viscosity	N/A		
pH / Fluid Loss	N/A		
Source of Sample	TANK		
Rm @ Meas. Temp	4.95 @ 75F		
Rmf @ Meas. Temp	4.69 @ 75F		
Rmc @ Meas. Temp	N/A		
Source of Rmf / Rmc	MEASURE		
Rm @ BHT	N/A		
Time Circulation Stopped	0830		
Time Logger on Bottom	1000		
Max. Recorded Temperature	N/A		
Equipment Number	PS-5		
Location	LA		
Recorded By	SCHUMACHER		
Witnessed By	M. MAYRY		

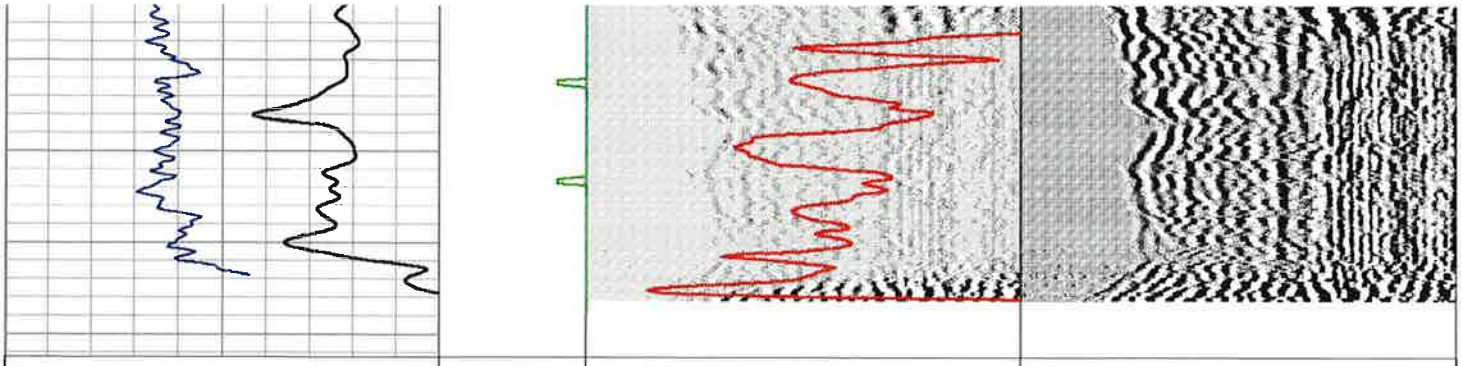
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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Database File	20199.db
Dataset Pathname	snc
Presentation Format	slt
Dataset Creation	Wed Sep 02 11:33:05 2015
Charted by	Depth in Feet scaled 1:240


250
300
350
400
RLL3
Gamma-Ray
Delta Time
RLL3 back-up



240	Delta Time (usec/ft)	40	ITT	200	Variable Density 5 ft	1500	200	Variable Density 5 ft 1500
0	Gamma-Ray (GAPI)	200	5 (msec) 0	0	RLL3 (Ohm-m)	50		
				50	RLL3 back-up (Ohm-m)	500		

Appendix E
Summary of Analytical Results and Stiff Diagrams

Table E-2. Summary of Analytical Results for Drilling Fluid Additives

Exploratory Borehole EMWD_EX_PV01, Perris, California

EMWD Lab No.	Sample Name	Date	Compound Name	Qualifier	Result Value	Units	Method
E151028030	EZ Mud	10/28/2015	Aluminum		269,000	µg/L	ICP-MS Metals, EPA 200.8
			Antimony	<	35	µg/L	ICP-MS Metals, EPA 200.8
			Arsenic		230	µg/L	ICP-MS Metals, EPA 200.8
			Barium		720	µg/L	ICP-MS Metals, EPA 200.8
			Beryllium	<	60	µg/L	ICP-MS Metals, EPA 200.8
			Boron		113,000	µg/L	ICP-MS Metals, EPA 200.8
			Cadmium		510	µg/L	ICP-MS Metals, EPA 200.8
			Calcium		960	mg/L	ICP-MS Metals, EPA 200.8
			Chromium (Total)		10,900	µg/L	ICP-MS Metals, EPA 200.8
			Cobalt		140	µg/L	ICP-MS Metals, EPA 200.8
			Copper	<	220	µg/L	ICP-MS Metals, EPA 200.8
			Fluoride	<	100	mg/L	Anions, EPA 300.0
			Iron		51,300	µg/L	ICP-MS Metals, EPA 200.8
			Lead		1,160	µg/L	ICP-MS Metals, EPA 200.8
			Magnesium		620	mg/L	ICP-MS Metals, EPA 200.8
			Manganese		7,860	µg/L	ICP-MS Metals, EPA 200.8
			Molybdenum		480	µg/L	ICP-MS Metals, EPA 200.8
			Nickel	<	60	µg/L	ICP-MS Metals, EPA 200.8
			Potassium		3,660	mg/L	ICP-MS Metals, EPA 200.8
			Selenium		53,800	µg/L	ICP-MS Metals, EPA 200.8
			Silica	<	0	mg/L	ICP-MS Metals, EPA 200.8
			Silver		54	µg/L	ICP-MS Metals, EPA 200.8
			Sodium		8,300	mg/L	ICP-MS Metals, EPA 200.8
			Strontium		13,300	µg/L	ICP-MS Metals, EPA 200.8
			Thallium		250	µg/L	ICP-MS Metals, EPA 200.8
			Tin		860	µg/L	ICP-MS Metals, EPA 200.8
			Total Dissolved Solids	<	4,000	mg/L	TDS, SM 2540C
			Total Phosphorus		530	mg/L	ICP-MS Metals, EPA 200.8
			Vanadium		4,620	µg/L	ICP-MS Metals, EPA 200.8
			Zinc		14,000	µg/L	ICP-MS Metals, EPA 200.8
E151028029	Quick-Gel Gold	10/28/2015	Aluminum		68,600,000	µg/L	ICP-MS Metals, EPA 200.8
			Antimony		1,220	µg/L	ICP-MS Metals, EPA 200.8
			Arsenic		15,500	µg/L	ICP-MS Metals, EPA 200.8
			Barium		745,000	µg/L	ICP-MS Metals, EPA 200.8
			Beryllium		2,980	µg/L	ICP-MS Metals, EPA 200.8
			Boron		187,000	µg/L	ICP-MS Metals, EPA 200.8
			Cadmium		790	µg/L	ICP-MS Metals, EPA 200.8
			Calcium		23,900	mg/L	ICP-MS Metals, EPA 200.8
			Chromium (Total)		45,400	µg/L	ICP-MS Metals, EPA 200.8
			Cobalt		17,100	µg/L	ICP-MS Metals, EPA 200.8
			Copper		32,500	µg/L	ICP-MS Metals, EPA 200.8
			Fluoride	<	1	mg/L	Anions, EPA 300.0
			Iron		38,900,000	µg/L	ICP-MS Metals, EPA 200.8
			Lead		13,700	µg/L	ICP-MS Metals, EPA 200.8
			Magnesium		11,700	mg/L	ICP-MS Metals, EPA 200.8
			Manganese		396,000	µg/L	ICP-MS Metals, EPA 200.8
			Molybdenum		990	µg/L	ICP-MS Metals, EPA 200.8
			Nickel		20,300	µg/L	ICP-MS Metals, EPA 200.8
			Potassium		11,300	mg/L	ICP-MS Metals, EPA 200.8
			Selenium		51,900	µg/L	ICP-MS Metals, EPA 200.8
			Silica		278,000	mg/L	ICP-MS Metals, EPA 200.8
			Silver		270	µg/L	ICP-MS Metals, EPA 200.8
			Sodium		35,100	mg/L	ICP-MS Metals, EPA 200.8
			Strontium		179,000	µg/L	ICP-MS Metals, EPA 200.8
			Thallium		910	µg/L	ICP-MS Metals, EPA 200.8
			Tin		2,820	µg/L	ICP-MS Metals, EPA 200.8
			Total Dissolved Solids	<	4,000	mg/L	TDS, SM 2540C
			Total Phosphorus		1,320	mg/L	ICP-MS Metals, EPA 200.8
			Vanadium		113,000	µg/L	ICP-MS Metals, EPA 200.8
			Zinc		85,900	µg/L	ICP-MS Metals, EPA 200.8

Notes:
mg/L - milligrams per liter
µg/L - micrograms per liter

Appendix F:

Phase I Environmental Site Assessment

SDVOSB

EnGEN CORPORATION

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IN MEMORY OF

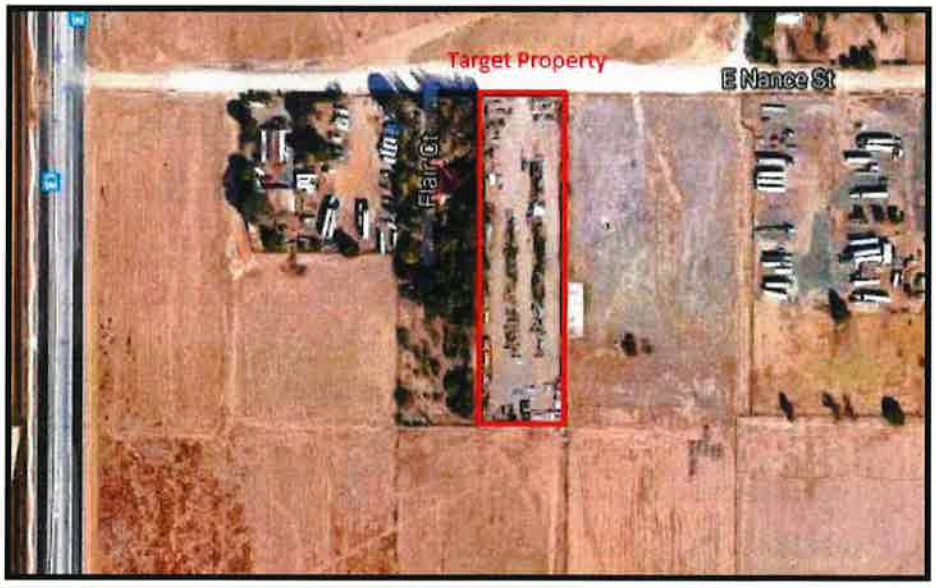
Chris Stevens • Tyrone Woods
Sean Smith • Glen Doherty
Ann Smedingoff

PHASE I ENVIRONMENTAL SITE ASSESSMENT

2.39 Acres Approximately 775 Feet East of Perris Boulevard and South of Nance Street
APN: 302-110-028, Parcel Map 13884
City of Perris, County of Riverside, California

Project Number: 4189EA1

October 9, 2015



Prepared for:

Eastern Municipal Water District
Post Office Box 8300
Perris, California 92572-3800

SDVOSB

EnGEN CORPORATION

IN MEMORY OF
• Chris Stevens • Tyrone Woods •
• Sean Smith • Glen Doherty •
• Ann Smedinghoff •

October 9, 2015

Mr. Michael D. Nusser
Water Resources Planning Manager
Eastern Municipal Water District
2270 Trumble Road
Perris, California 92572
(951) 928-3777 x4514 • FAX (951) 928-6177

Regarding: **Phase I Environmental Site Assessment**
2.39 Acres Approximately 775 feet East of Perris Boulevard and South of Nance Street,
APN: 302-110-028, Parcel Map 13884
City of Perris, County of Riverside, California
Project Number: 4189EA1

Dear Mr. Nusser:

This report presents the results of our Phase I Environmental Site Assessment (ESA) performed at the site identified for the purposes of this report as Perris Boulevard and Nance Street, consisting of 2.39 Acres located in the City of Perris, County of Riverside, California. The scope of work for this assessment is described in Section 2.0 of this report.

The Executive Summary provides a broad overview of the findings and recommendations of this ESA, which are detailed in the subsequent sections of this report.

1.0 EXECUTIVE SUMMARY

1.1 **Government Database Search:** The target property is not listed in any of the governmental databases searched which document environmental risk associated with hazardous materials or petroleum hydrocarbons. The conclusions of this report are based on these findings.

1.2 **Environmental Records Search:** The environmental database records search reveals no properties located within the American Society for Testing and Materials (ASTM) search radius of up to a distance of 5,280-feet (1-mile) of the target property that are known to be associated with the use and/or storage of hazardous materials or petroleum hydrocarbons.

1.3 **Site Inspection:** A site inspection was conducted at the target property on January 11, 2015 by an environmental professional of this firm. The property is located east of Perris Boulevard and south of Nance Street in the Perris area of Riverside County, California. The ***Target Property*** is currently undeveloped land being utilized as a storage yard for construction equipment and supplies.

1.4 **Surrounding Property Use:** Surrounding property uses consist of undeveloped land to the north, east and south of the Target Property with a single-family residence adjacent to the

2.2 **Scope of Services:** The assessment includes: 1) a search of available environmental records in governmental databases; 2) completion of an on-site inspection; 3) interviews with the property owner(s) or tenant(s) as appropriate; 4) a permits search; 5) contacts with regulatory agencies; and 6) review of historical aerial photographs.

2.3 **Assumptions:** There is a possibility, even with the proper application of these methodologies, there may exist on the target property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. **EnGEN Corporation** believes that the information obtained from the record review and the interviews concerning the site is reliable. However, **EnGEN Corporation** cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete.

2.4 **Project Specific Limitations and Exceptions:** The findings and conclusions contain all of the limitations inherent in these methodologies that are referred to in ASTM 1527-05. The general limitations are further discussed in Section 14 of this report. Specific limitations and exceptions to this Phase I ESA are more specifically described below: **EnGEN Corporation** was limited by the available records that were provided or readily accessible to the public and their inherent accuracy. This report was also limited by the contractual allowable time frame to provide this report.

2.5 **Special Terms and Conditions:** Authorization to perform this work was in the form of a contract requested by Mr. Michael Nusser, of Eastern Municipal Water District executed and signed on March 12, 2015.

2.6 **User Reliance: EnGEN Corporation** hereby certifies to Easter Municipal Water District that this report was prepared in conformance with all applicable laws, statutes, ordinances, rules, and regulations, and promulgated by all applicable governmental authorities concerning the topic of the report. The conclusions and recommendations provided in the report are in no way influenced or controlled by the client for which the work was performed.

3.0 SITE DESCRIPTIONS

3.1 **Site Location and Legal Descriptions:** This ESA was performed for the target property identified as 2.39 Acres approximately 775 feet East of Perris Boulevard and South of Nance Street. The legal description of the ***Target Property*** is APN: 302-110-028, in the City of Perris, County of Riverside, California.

3.1.1 **General**: The target property comprises a rectangular shaped approximately 2.39 acre parcel located approximately 775 feet East of Perris Boulevard and South of Nance Street in the City of Perris, County of Riversides, California.

the user should evaluate whether the purchase price was below the fair market value for the property as a result of contamination.

4.6 **Reason for Performing this Phase I ESA:** To the best of our knowledge, the reason for performing this Phase I ESA is to determine the suitability of Target Property for purchase by ***Easter Municipal Water District***.

5.0 RECORDS REVIEW

5.1 **Standard Environmental Record Sources:** Standard records searched for the purposes of this Phase I ESA included the readily available federal and state government databases described in ASTM 1527-05, was performed by Environmental Data Resources (EDR). For more detail on the included federal and state government or tribal databases that were readily available for this search please refer to the EDR report attached in the Appendix.

5.2 **Additional Environmental Record Sources:** Additional records searched for the purposes of this Phase I ESA included a database search of the readily available government databases described in ASTM 1527-05, was performed by EDR. For more detail on the included local or regional government databases that were readily available for this search please refer to the EDR report attached in the Appendix. When the property descriptor includes a known street address, the governmental database search by EDR is complimented by performing manual verification of any existing Building Permits from the appropriate government entity, Regional Water Quality Control Board file review, and County Department of Environmental Health file review. The results are summarized below and presented in further detail in subsequent sections of this report.

Building permits were requested from Riverside County Building Department and the City of Perris. No building permits were found. A file review was requested from the Santa Ana Regional Water Quality Control Board. No files were found on record as a result of the search.

County of Riverside Environmental Health files for the target property were requested. No files were found on record as a result of the search.

5.3 Physical Setting Sources

5.3.1 **Topography:** Select historical United State Geological Survey (USGS) Quadrangle Topographic Maps covering the target property were reviewed for this Phase I ESA.

Table - III Historical Water Levels Records Near Perris Blvd. and Nance Street				
Date Measured	G.S. Elevation (AMSL)	WSE	Distance	Well Name
03-04-1991	1650.0	351.4	.85 Miles South	05S01E06L002S

5.3.5 **Historical Use Information:** Research within the limits of this Phase I Site Assessment including aerial photo review, historical topographic maps, government database search were utilized in evaluating past property uses.

5.3.6 **Historical Aerial Photograph Review**: Table VI summarizes the historical photographic review for the target property.

Table - IV - Historical Photograph Review			
Date	Flyer	Scale	Description
2012	USDA/NAIP	1"=500	Eight Various Sized Sheds Two Rows of Containers/Construction Equipment
2010	USDA/NAIP	1"=500	One Structure, Seven Various Sized Sheds Two Rows of Containers/Construction Equipment
2009	USDA/NAIP	1"=500	One Structure, Four Small Sheds, Two Rows of Containers/Construction Equipment
2006	USDA/NAIP	1"=500	Vacant Property, One Structure, Five Various Sized Sheds
2005	USDA/NAIP	1"=500	Vacant Property – Apparent Agricultural Use
2002	USGS/DOQQ	1"=500	Vacant Property – Apparent Agricultural Use
1994	USGS	1"=500	Vacant Property – Apparent Agricultural Use
1989	USGS	1"=500	Vacant Property – Apparent Agricultural Use
1985	USGS	1"=500	Vacant Property – Apparent Agricultural Use
1978	USGS	1"=500	Vacant Property – Apparent Agricultural Use
1967	USGS	1"=500	Vacant Property – Apparent Agricultural Use
1961	USGS	1"=500	Vacant Property – Apparent Agricultural Use
1953	USGS	1"=500	Vacant Property – Apparent Agricultural Use
1938	USGS	1"=500	Vacant Property – Apparent Agricultural Use

5.3.7 **Fire Insurance Maps:** There were no historical fire insurance maps (Sanborn Maps) located during the governmental database search for the target property (EDR, 2013).

5.3.8 **City Directories:** The target property is not listed in the City Directory.

5.3.9 **Chain of Title:** A chain-of-title search of current and historic land ownership was not included within **EnGEN Corporation's** agreed upon proposed scope of services. Historical research of the target property was performed using other resources, such as aerial photograph review, topographic map review, and government records.

5.3.10 **Additional Environmental Record Sources:** No additional environmental reports or surveys were provided to **EnGEN Corporation** nor are any known to be readily ascertainable.

were encountered on the subject property and no other conditions were observed that would be a concern from an air emissions standpoint.

8.4 **Pesticides and Herbicides:** At the time of the site inspection the target property was not in use for agricultural purposes. The use of the target property has been verified in historical aerial photographs reviewed for this ESA, (see Aerial Photographs, Appendix B) as having been cultivated for agricultural purposes in the past. Pesticides may have been utilized during this time. Pesticides may have been utilized during this time. It is the opinion of this firm that although it is highly likely that biocides were routinely applied as part of the agricultural practice at the time, *it is unlikely significant concentrations of these compounds are present in the soil underlying the Target Property*. Should the client wish to have further assurance regarding the possible presence and/or concentration levels of pesticides and herbicides at the Target Property, **EnGEN** can provide these services for an additional fee. Based on the evidence uncovered within the scope of this site assessment, no negative impact to the target property from pesticides or herbicides is anticipated.

8.5 **Wastewater:** At the time of the site inspection, there was no observed evidence of stormwater facilities, drains or drainage ditches on the target property. Although there are no records on file with the Riverside Department of Environmental Health for the installation of an on-site sewage effluent disposal system, it must be assumed that the residential structure utilized one. The District should determine the need to further investigate the location of the on-site sewage effluent disposal system based on District policy governing the proposed future use of the site.

8.6 **Waste Generation, Storage and Disposal:** At the time of the site inspection, there was no evidence observed on the target property that would indicate the site had past or current use for the generation, storage, treatment, or disposal of hazardous waste. There were no records uncovered during this EAS that would indicate the site had been used for the use and/or storage of hazardous materials in the past.

8.7 **Material Safety Data Sheets (MSDS):** Material Safety Data Sheets (MSDS) document the on-site use of hazardous materials. Currently, there are no MSDS for the target property.

8.8 **Building Permits:** There were no building permits found in the County of Riverside Building and Safety Department records for previous construction observed in the historical aerial photographs. An additional records search was requested from the City of Perris, but none were found in their files. The city indicated that records prior to 2000 may be available, but it would be a manual search that could not be completed prior to the deadline established for this report. Should additional information become available that would indicate a potential environmental liability to the Target Property, a supplement to this ESA will be provided. Based on the historical aerial

are considered high-risk materials for abatement and their removal is classified under Class I Removal Activities. Other building materials, such as "floor or ceiling tiles, siding, roofing, transit panels (floor sheeting, floor or roof mastics) are also considered PACM (presumed asbestos-containing material)" unless sampled and identified by a certified individual as to asbestos content, but are considered low risk materials for abatement and their removal is classified under Class II, III and IV Removal and Repair and Maintenance Operations.

8.11.5 **Small Scale Short Term Duration**: Significant under these new regulations is the deletion of the category of "Small Scale Short Term Duration" removal activities which regularly allowed Class I, II, III and IV activities to proceed with less regulatory oversight. Under the NESHAPS laws of 1976 and as later amended, asbestos does not have to be removed from a facility until such time as it undergoes major renovations or is demolished. Until that time, the present emphasis by the EPA is to recommend repair of any damaged areas and management of the asbestos-containing materials. Prior to any renovation work being done involving asbestos-containing materials of 260 lineal feet or 160 square feet or more in area, the local branch of the EPA must be notified. Prior to the demolition of any building or house, mandatory bulk sampling must be accomplished and if asbestos is present, notification must be made to the local branch of the EPA and Air Quality Management District. In California, for the removal of any asbestos-containing materials greater than 0.1% by weight, notifications must also be made to CAL-OSHA and a licensed contractor with an asbestos certification is required for any work which exceeds 100 square feet.

8.12 Poly-Chlorinated Biphenyls (PCBs)

8.12.1 **Background**: PCBs were materials widely used as a coolant in electrical equipment from the 1920s to the 1970s. They were banned from use in most electrical equipment in the latter part of the 1970s and 1980s, after it was determined that PCBs could cause health problems if ingested, and cancer when they underwent a chemical change as a result of a fire or explosion. Small amounts of PCBs were used as a coolant in fluorescent light tube fixture ballast until 1978, at which time they were banned. No other potential PCBs or PCB sources appear to exist on the subject property.

8.13 **Above-Ground Fuel Storage Tanks**: There were no permanent above ground fuel storage tanks observed on the target property. However, several empty portable storage tanks were observed stored near the northeasterly area of the ***Target Property***. These tanks are typically used in the construction industry to refuel equipment from a pick-up truck. They do not represent a significant threat to the ***Target Property*** and can be disposed of by a licensed contractor familiar with the proper procedure and protocol for disposal of such material.

8.15.9 **Regional or Adjacent Problems**: There are no regional or adjacent problems that would have an impact on the target property from a hazardous materials standpoint.

9.0 PROFESSIONAL OPINION

9.1 **Professional Opinion on Possible Contamination**: The potential environmental conditions revealed for the target property includes pesticides and herbicides from past agricultural use, potential lead paint and asbestos. Based on our experience in this part of southwest Riverside County, properties with similar histories such as past agricultural use typically yield low concentrations of pesticides and herbicides that are below regulatory thresholds. There is a potential for the existence of lead based paint and low risk asbestos containing material present in the soils immediately area surrounding the previous residential structure at the Target Property when the structure was demolition or removed from the Target Property. Based on the site reconnaissance observations and confirmation that there are no reported environmental cases within the ASTM search radius of the target property, it is our interpretation that it is very unlikely that the Target Property is negatively affected from off-site sources as outlined in subsequent sections of this report.

9.2 **Vapor Encroachment Conditions (VEC):** We have reviewed available regulatory and client provided data to assess Tier 1 non-numeric screening for the site and completed a VEC study for the site using Tier 1 criteria as recommended by ASTM E 2600-10. The Tier 1 screening identifies surrounding facilities that pose a possible vapor intrusion source to the site based on the results of the Phase I ESA investigations and certain criteria outlined by ASTM. These criteria include a certain distance from the target site (referred to by ASTM as within the "area of concern"); the types of chemicals used (referred to by ASTM as the "chemicals of concern"); and a plume test to determine if the plume associated with a source of contamination is close enough to the site to impact indoor air quality. Based on our review of regulatory records, files, databases, and/or client furnished data and reports, there are no conditions that represent a potential vapor encroachment threat to the Target Property.

9.3 **Infectious Waste:** There was evidence uncovered that would indicate that the ***Target Property*** is impacted by infectious waste.

10.0 CONCLUSIONS

10.1 **General**: Other than the ***Target Property*** potential past agricultural use, which may have introduced pesticides or herbicides to the near surface soils at the ***Target Property***, only De minimis conditions were observed in the form of drums of oil, waste oil and hydraulic fluid and empty portable fuel storage tanks stored on at the ***Target Property*** (see Photographic Survey)

14.0 GENERAL LIMITATIONS

14.1 **ASTM Standards**: This report is intended to satisfy the requirements of a Phase I ESA as outlined in the ASTM standards. This standard is intended to define the scope of due diligence necessary in a real estate transaction to provide for the "innocent buyer's defense" under the SARA amendments to CERCLA.

14.2 **Time, Scope and Date Limitations**: The findings set forth in this Phase I ESA are strictly limited in time and scope to the date of evaluation(s). Government records searched are limited to the accuracy of the agency-prepared lists. It should be the decision of the owner and/or client to proceed to further sampling and analysis based on their comfort level, legal requirements, and/or project needs. If the client wishes to test for contaminant levels associated with petroleum hydrocarbons, pesticide, or herbicide use, this office can provide these services. Should the client wish to confirm air quality, this office does not perform these services. Any additional subsurface investigation and sampling to confirm the conclusions of this report is not within the scope of this report Phase I ESA.

14.3 **Scientific Task Limitations**: The conclusions presented in the report are based solely on the services described herein and not on scientific tasks or procedures beyond the scope of the agreed upon Phase I ESA.

14.4 **Acknowledgements**: It is hereby acknowledged that, within the scope of this survey, no level of assessment can ensure the real property is completely free of chemicals or toxic substances.

15.0 CLOSURE

15.1 **Intended Parties Use**: This report has been prepared for use by the parties or project named or described in this document. It may or may not contain sufficient information for other parties or purposes.

15.2 **Project Changes**: In the event that changes in the assumed nature, design, or location of the proposed development as described in this report are planned, the conclusions and recommendations contained in this report will not be considered valid unless the changes are reviewed and the conclusions and recommendations of this report modified or verified in writing.

15.3 **Standards of Care**: This study was conducted in general accordance with the applicable standards of our profession and the accepted geotechnical engineering principles and practices at the time this report was prepared. No other warranty, implied or expressed beyond the representations of this report, is made.

15.4 **Undisclosed Conditions**: Although every effort has been made to obtain information regarding the geotechnical and subsurface conditions of the site, limitations exist with respect to the

REFERENCES

1. California Code of Regulations, Title 22, Chapter 30 Regulations for Hazardous Waste Transport and Disposal, California Highway Patrol.

2. California Environmental Protection Agency, State Water Resources Control Board, 2008, Geotracker, Your link to environmental data for regulated facilities in California, website: http://geotracker.swrcb.ca.gov/, 2015

3. California Geologic Survey, 2002, California Geomorphic, Provinces, Note 36.

4. Environmental Data Resources, Inc., 2015, Sanborn Map Report, report dated December, 2013.

5. Environmental Data Resources, Inc., 2015b, The EDR-Radius Map with GeoCheck, report dated August 2015

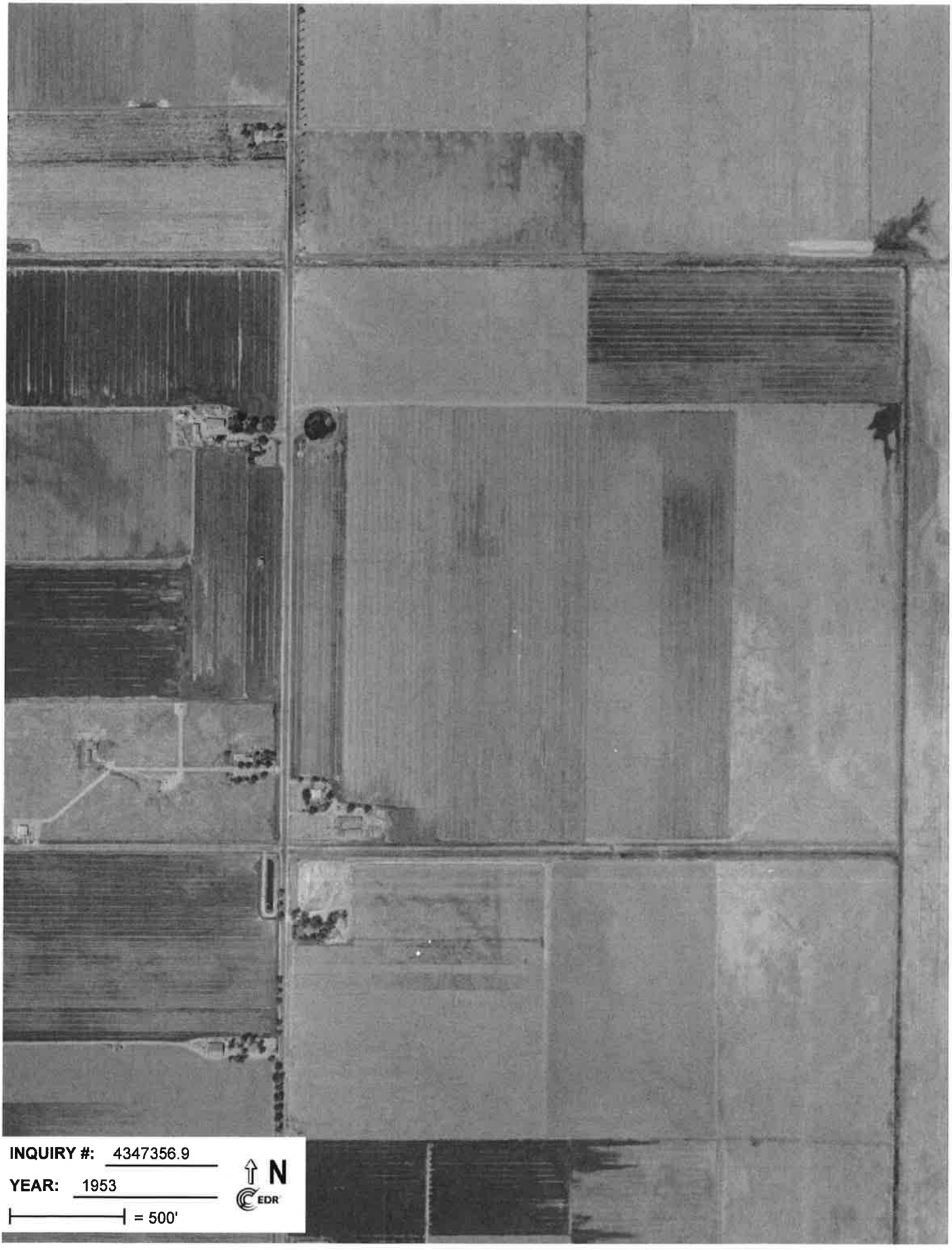
6. Environmental Data Resources, Inc., 2015c, The EDR-Historical Topographic, report dated August, 2015.

7. Environmental Data Resources, Inc., 2015d, The EDR-Aerial Photography Print Service, report dated August, 2015.

8. FEDERAL, 29 CFR, Part 1910.120; 40 CFR Part 761, DOT; 49 CFR Parts 172.516; Toxic Substance Control Act.

9. Morton, D. M., and Matti, J. C. 2003-04, Preliminary Digital Geologic Map of the Hemet 7.5 Quadrangle, Riverside County California, Version 1.1, United States Geological Survey, Open File Report 04-1455.

APPENDIX B
Aerial Photographs



INQUIRY #: 4347356.9

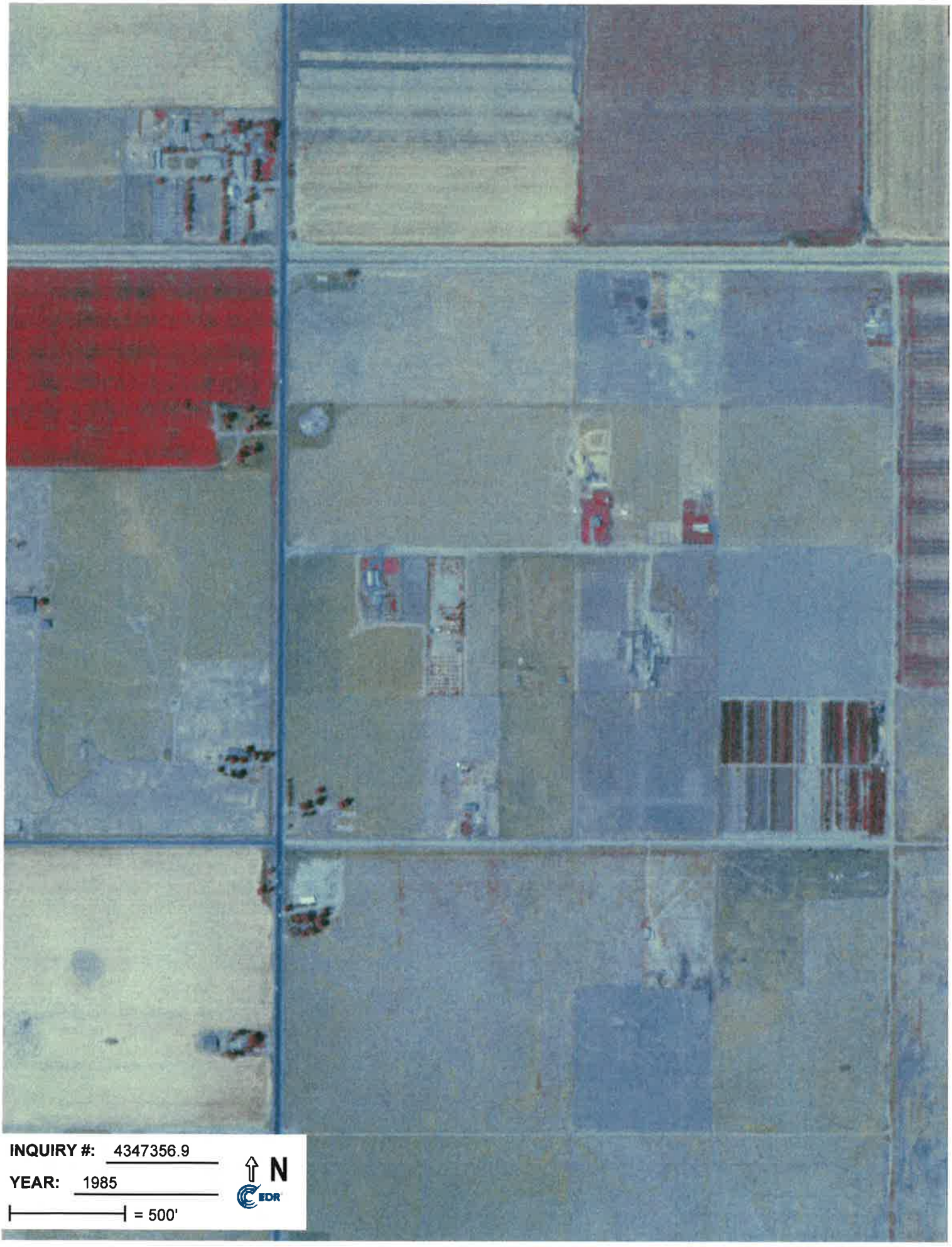
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= 500'

N

EDR


INQUIRY #: 4347356.9
YEAR: 1967
= 500'
N
EDR



INQUIRY #: 4347356.9

YEAR: 1985

= 500'

N

EDR


INQUIRY #: 4347356.9
YEAR: 1994
= 500'
N
EDR



INQUIRY #: 4347356.9

YEAR: 2005

= 500'

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EDR



INQUIRY #: 4347356.9

YEAR: 2009

= 500'

N

EDR



INQUIRY #: 4347356.9

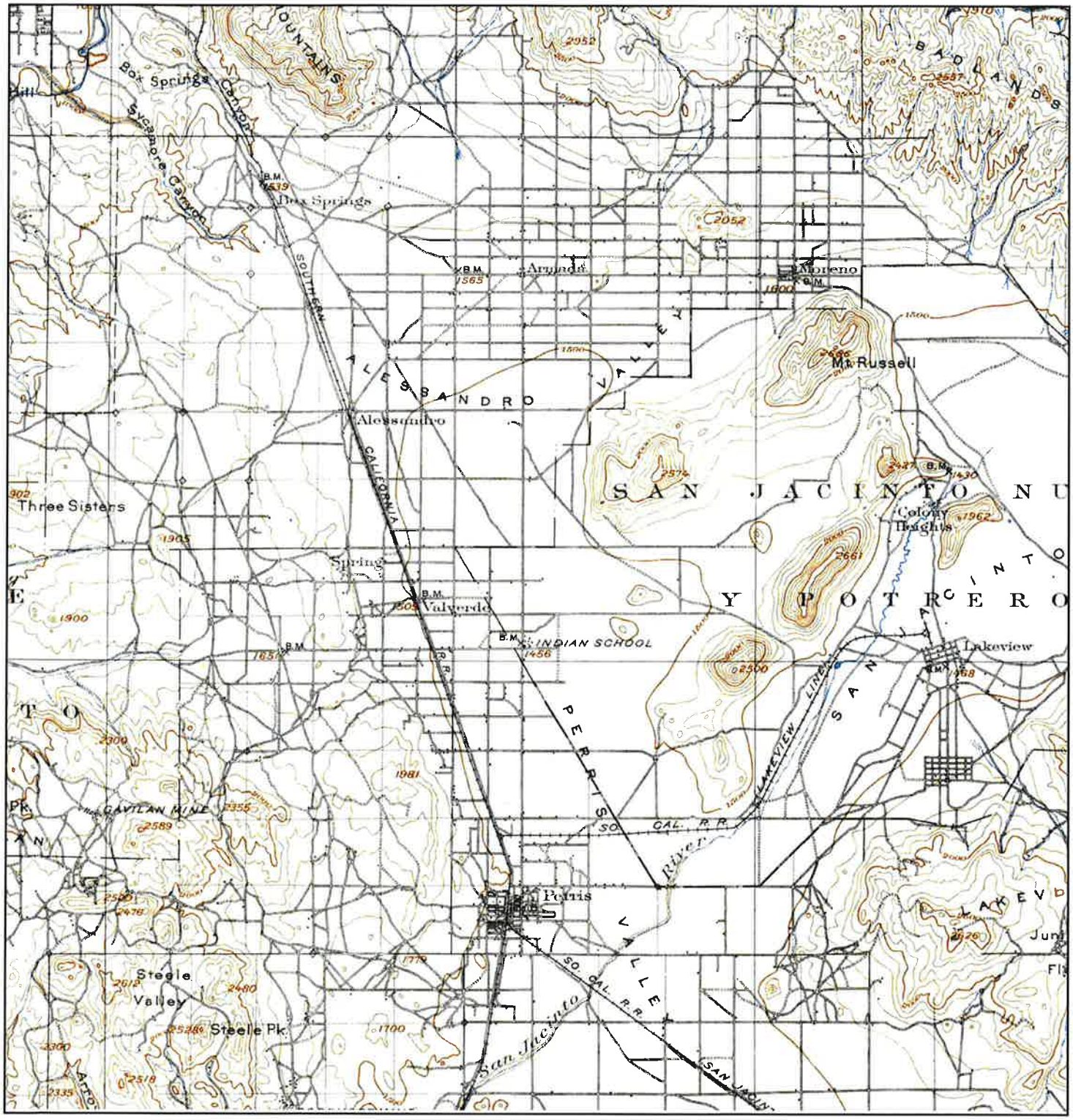
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N

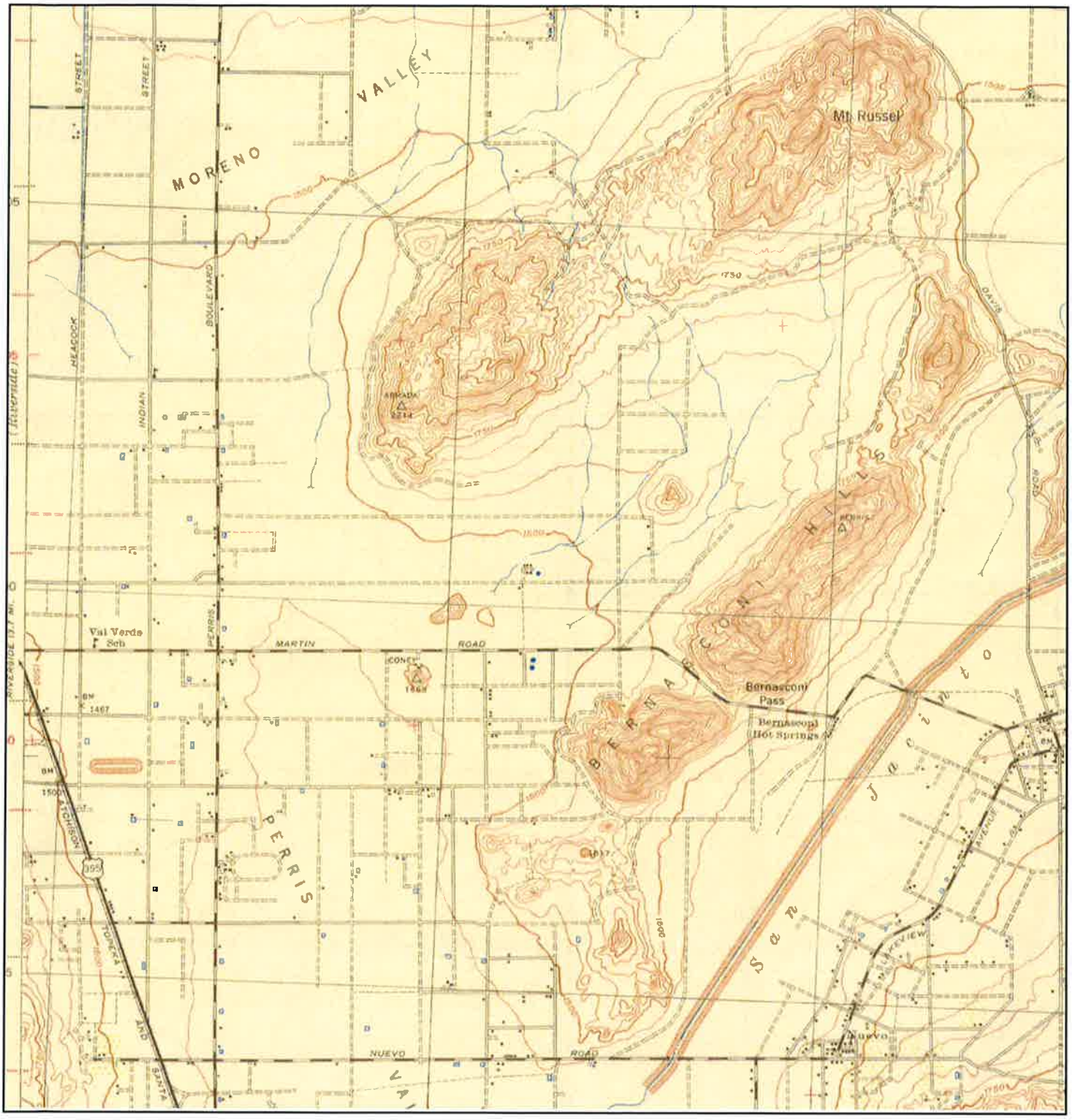
EDR

Historical Topographic Map



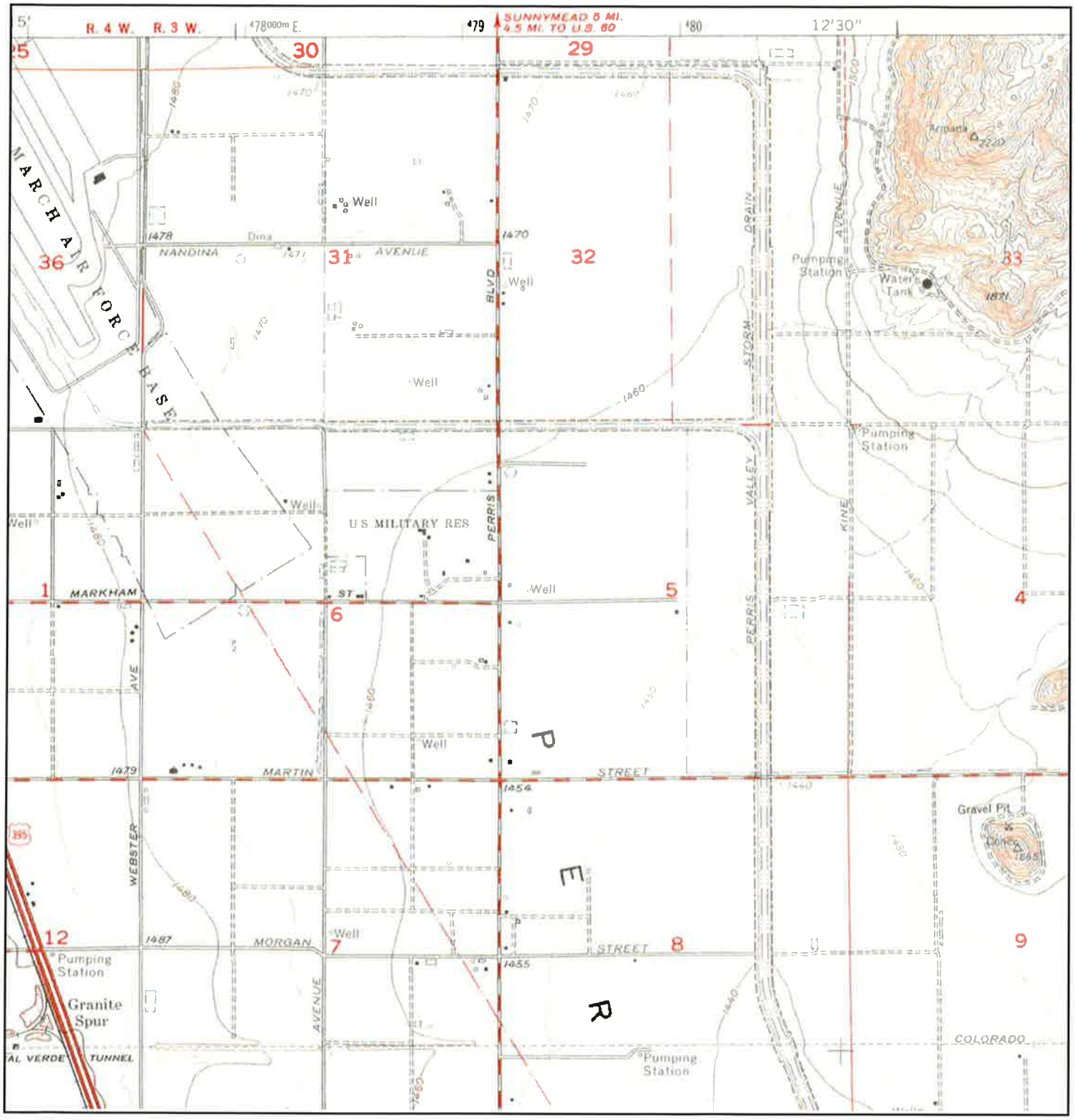
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	MAP YEAR:	1901	ADDRESS:	East Nance Street PERRIS, CA 92571	CONTACT: Cat Hardell
	SERIES:	30	LAT/LONG:	33.8546 / -117.2231	INQUIRY#: 4347356.4
	SCALE:	1:125000			RESEARCH DATE: 07/07/2015

Historical Topographic Map



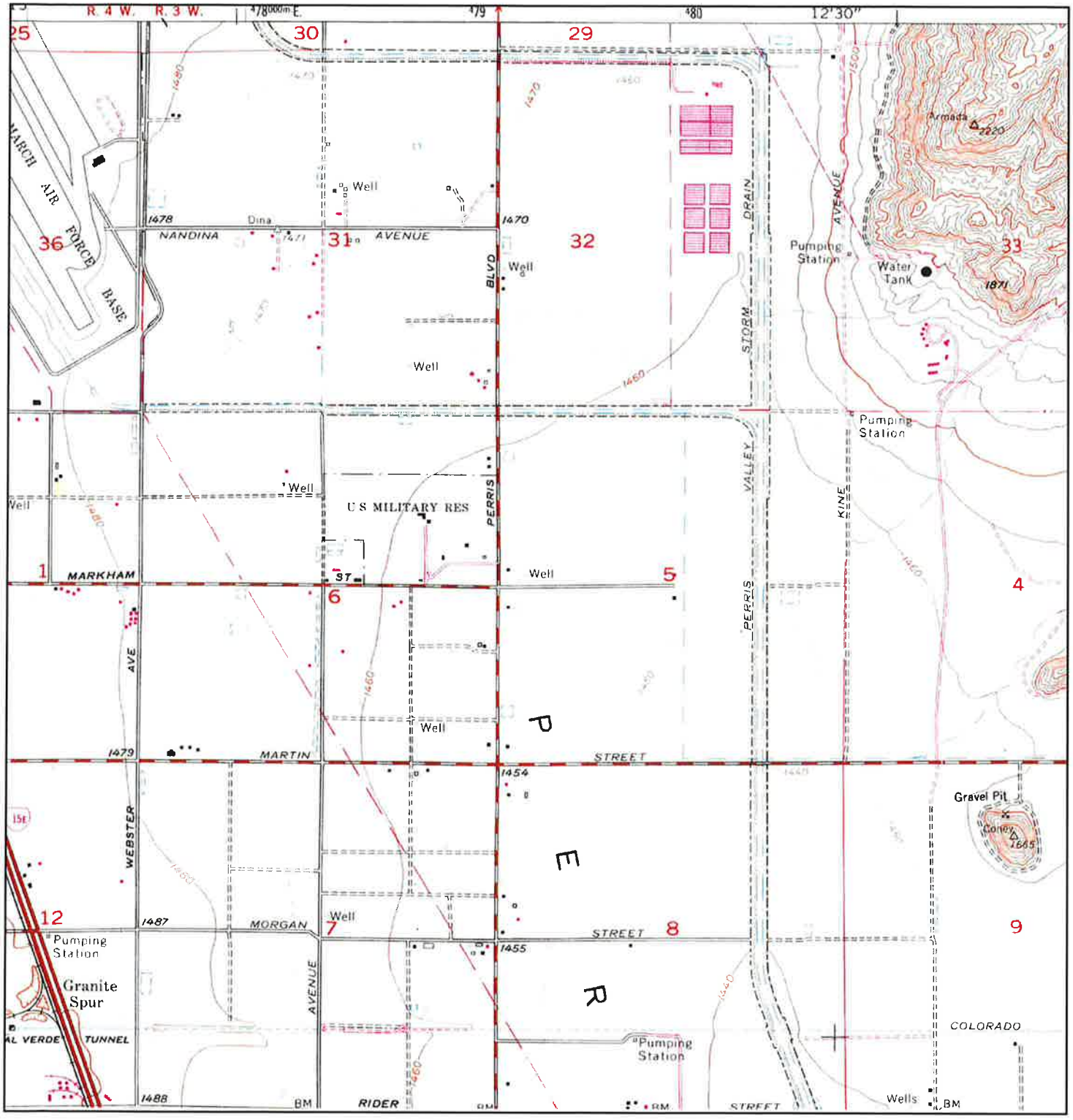
N	TARGET QUAD NAME: PERRIS MAP YEAR: 1943 SERIES: 15 SCALE: 1:62500	SITE NAME: NORTH PERRIS GROUNDWATER ADDRESS: East Nance Street PERRIS, CA 92571 LAT/LONG: 33.8546 / -117.2231		CLIENT: Engen Corporation CONTACT: Cat Hardell INQUIRY#: 4347356.4 RESEARCH DATE: 07/07/2015	

Historical Topographic Map



N	TARGET QUAD NAME: PERRIS MAP YEAR: 1967 SERIES: 7.5 SCALE: 1:24000	SITE NAME: NORTH PERRIS GROUNDWATER ADDRESS: East Nance Street PERRIS, CA 92571 LAT/LONG: 33.8546 / -117.2231	CLIENT: Engen Corporation CONTACT: Cat Hardell INQUIRY#: 4347356.4 RESEARCH DATE: 07/07/2015

Historical Topographic Map



N	TARGET QUAD NAME: PERRIS MAP YEAR: 1979 PHOTOREVISED FROM :1967 SERIES: 7.5 SCALE: 1:24000	SITE NAME: NORTH PERRIS GROUNDWATER ADDRESS: East Nance Street PERRIS, CA 92571 LAT/LONG: 33.8546 / -117.2231	CLIENT: Engen Corporation CONTACT: Cat Hardell INQUIRY#: 4347356.4 RESEARCH DATE: 07/07/2015

NORTH PERRIS GROUNDWATER DEVELOPMENT - FUTURE WELL
East Nance Street
PERRIS, CA 92571

Inquiry Number: 4347356.2s
July 07, 2015

The EDR Radius Map™ Report with GeoCheck®



Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

EAST NANCE STREET
PERRIS, CA 92571

COORDINATES

Latitude (North):	33.8546000 - 33° 51' 16.56"
Longitude (West):	117.2231000 - 117° 13' 23.16"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	479361.7
UTM Y (Meters):	3745863.0
Elevation:	1460 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	33117-G2 PERRIS, CA
Most Recent Revision:	1979

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120519
Source:	USDA

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

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

CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

HIST Cal-Sites	Historical Calsites Database
SCH	School Property Evaluation Program
Toxic Pits	Toxic Pits Cleanup Act Sites
CDL	Clandestine Drug Labs
US HIST CDL	National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST	Facility Inventory Database
HIST UST	Hazardous Substance Storage Container Database
SWEEPS UST	SWEEPS UST Listing

Local Land Records

LIENS 2	CERCLA Lien Information
LIENS	Environmental Liens Listing
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

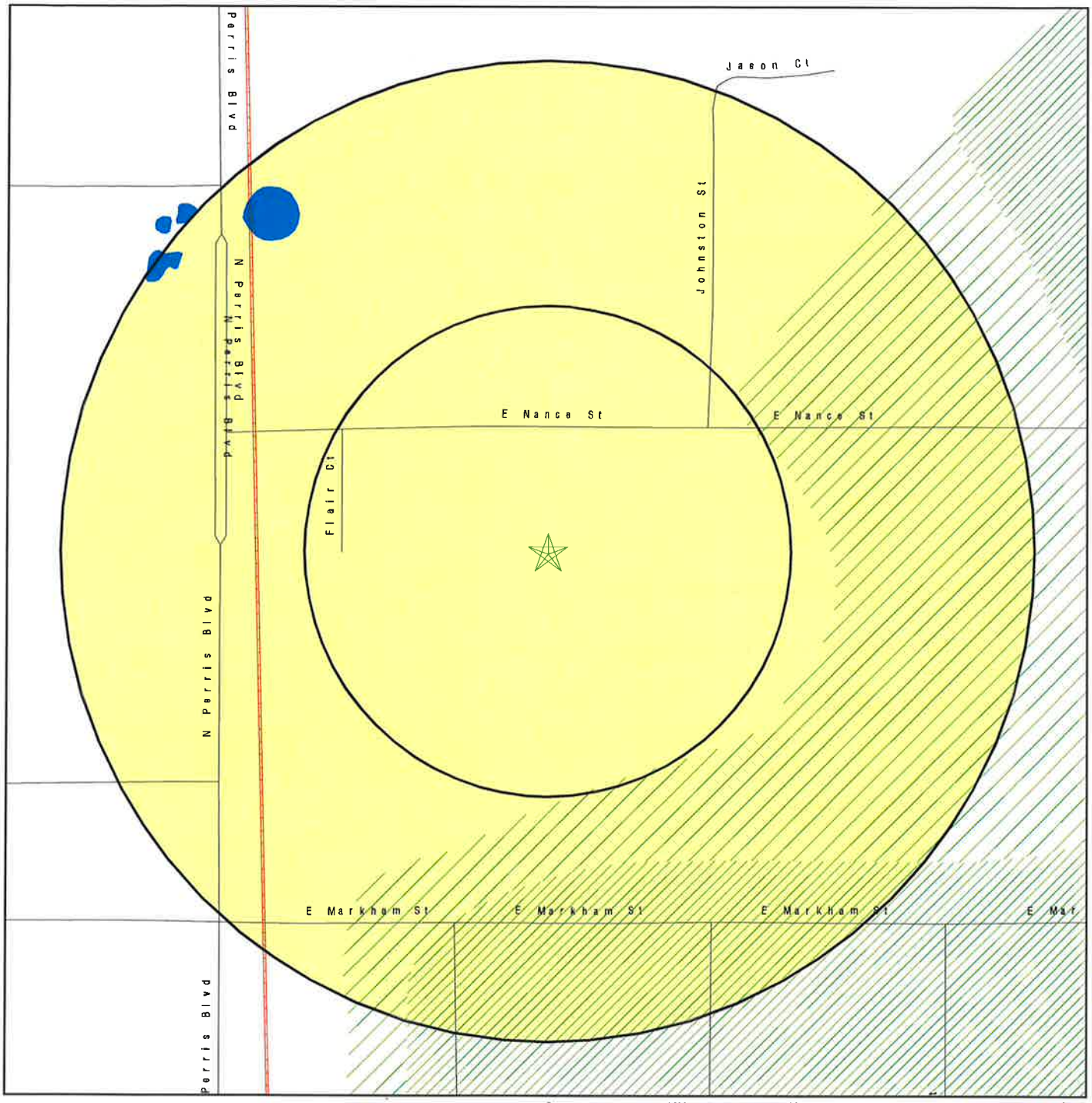
Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
DOT OPS	Incident and Accident Data
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System
RMP	Risk Management Plans
CA BOND EXP. PLAN	Bond Expenditure Plan
NPDES	NPDES Permits Listing
UIC	UIC Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE	Hazardous Waste & Substance Site List
CUPA Listings	CUPA Resources List

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

DETAIL MAP - 4347356.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Pipelines
- 100-year flood zone
- 500-year flood zone
- 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: NORTH PERRIS GROUNDWATER DEVELOPMENT - FUTURE WELL	CLIENT: Engen Corporation
ADDRESS: East Nance Street PERRIS CA 92571	CONTACT: Cat Hardell
LAT/LONG: 33.8546 / 117.2231	INQUIRY #: 4347356.2s DATE: July 07, 2015 5:59 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
SLIC	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	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								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
SWEEPS UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
LIENS	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	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
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LUST	TP		NR	NR	NR	NR	NR	0
RGA LF	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
CERCLIS 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). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

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: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Archived sites are sites that have been removed and archived from the inventory of CERCLIS 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 this 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. This 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 a potential NPL site.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal institutional controls / engineering controls registries

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: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
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: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

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: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
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: 03/30/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 63

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Annually

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: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

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 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 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: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

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 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

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

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: 02/03/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 53

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/03/2015
Next Scheduled EDR Contact: 08/10/2015
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: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/08/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 19

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

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: 02/03/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 53

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/28/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

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: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Semi-Annually

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

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: 09/29/2014
Date Data Arrived at EDR: 10/01/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 36

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

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: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
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: 03/23/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/24/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

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: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Quarterly

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: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

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

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: 12/31/2014
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

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: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 06/09/2015
Next Scheduled EDR Contact: 09/21/2015
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: 03/30/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Annually

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: 04/14/2015
Date Data Arrived at EDR: 04/29/2015
Date Made Active in Reports: 05/21/2015
Number of Days to Update: 22

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

Date of Government Version: 06/06/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
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: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

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: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Annually

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: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

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: 12/30/2014
Date Data Arrived at EDR: 12/31/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/03/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Semi-Annually

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: 12/31/2013
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 110

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 01/29/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Annually

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: 12/31/2009
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: 04/10/2015
Next Scheduled EDR Contact: 08/10/2015
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: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/27/2015
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: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

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: 03/31/2015
Date Data Arrived at EDR: 04/09/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 63

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 06/04/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

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: 04/07/2015
Date Data Arrived at EDR: 04/09/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/20/2015
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: 01/18/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/18/2015
Date Data Arrived at EDR: 05/20/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 22

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

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: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 04/10/2015
Number of Days to Update: 10

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
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

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: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: No Update Planned

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: 02/18/2015
Date Data Arrived at EDR: 02/20/2015
Date Made Active in Reports: 03/12/2015
Number of Days to Update: 20

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Annually

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: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

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

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: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
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: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/31/2015
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: 01/16/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/09/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

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: 04/15/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

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: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/22/2015
Data Release Frequency: Annually

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: 04/13/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Quarterly

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:

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: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 7

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

BUTTE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 7

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

FRESNO COUNTY:

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: 03/31/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 07/06/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 04/27/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 15

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

KERN COUNTY:

Date of Government Version: 04/20/2015
Date Data Arrived at EDR: 04/20/2015
Date Made Active in Reports: 05/07/2015
Number of Days to Update: 17

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/20/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/15/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 40

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 03/06/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/03/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 16

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/03/2015
Date Data Arrived at EDR: 06/04/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 32

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

MADERA COUNTY:

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: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/12/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 18

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 24

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 27

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 30

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

PLACER COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/02/2015
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 7

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 05/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

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: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2014
Date Data Arrived at EDR: 11/21/2014
Date Made Active in Reports: 12/29/2014
Number of Days to Update: 38

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

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: 06/03/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

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: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/25/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 6

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

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

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: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/07/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 27

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 05/22/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 13

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SOLANO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 04/27/2015
Date Data Arrived at EDR: 05/22/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 14

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

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: 06/26/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Annually

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: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

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: 04/27/2015
Date Data Arrived at EDR: 04/29/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 14

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/27/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 19

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/01/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 12

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 07/06/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Annually

YUBA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/11/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Telephone: 281-546-1505
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
Telephone: 800-823-6277
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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.

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, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

NORTH PERRIS GROUNDWATER DEVELOPMENT - FUTURE WELL
EAST NANCE STREET
PERRIS, CA 92571

TARGET PROPERTY COORDINATES

Latitude (North):	33.8546 - 33° 51' 16.56"
Longitude (West):	117.2231 - 117° 13' 23.16"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	479361.7
UTM Y (Meters):	3745863.0
Elevation:	1460 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	33117-G2 PERRIS, CA
Most Recent Revision:	1979

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 principal 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

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

Target Property County	FEMA Flood Electronic Data
RIVERSIDE, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06065C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	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®

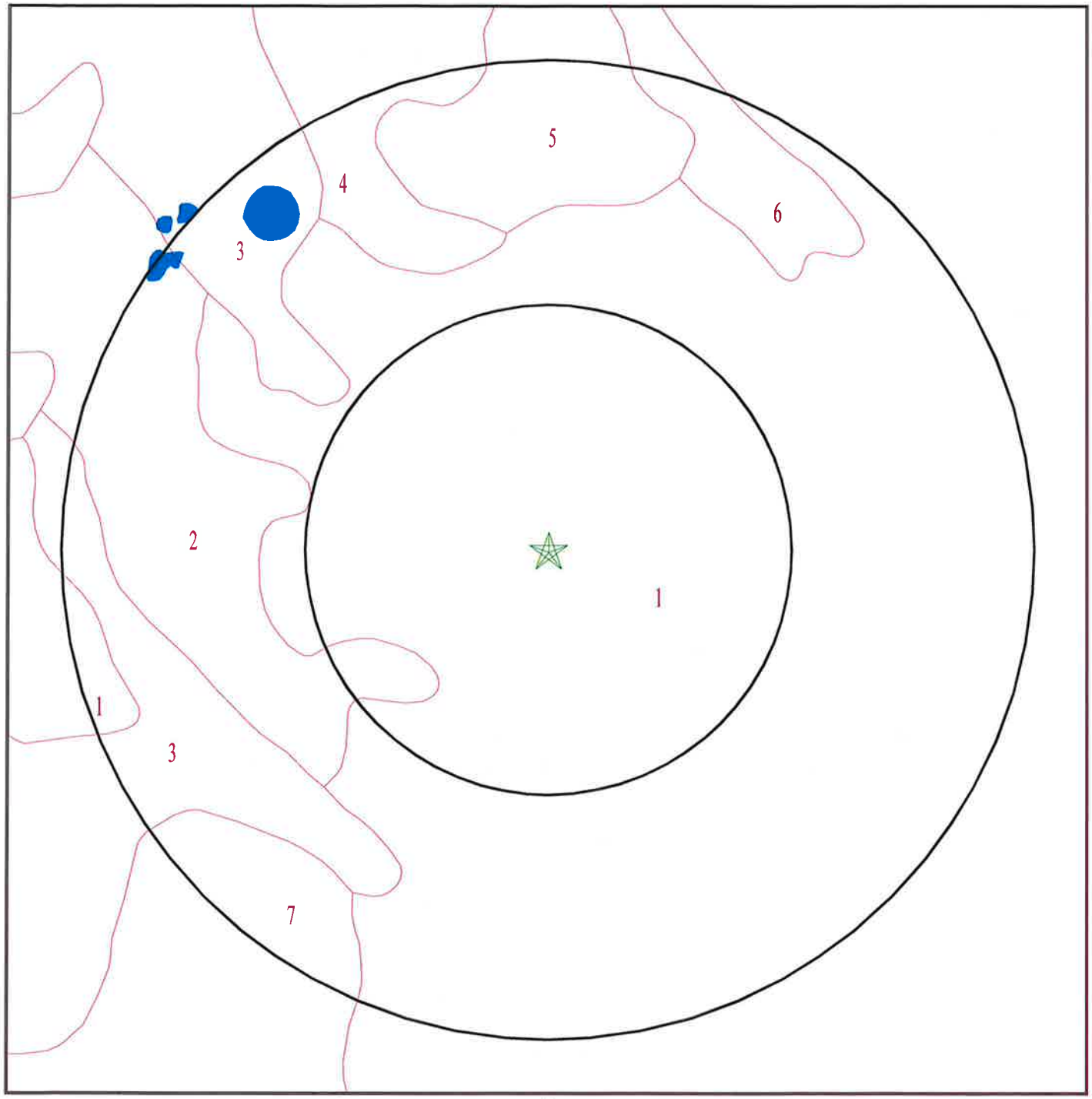
Search Radius: 1.000 Mile.

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
Not Reported		

* ©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.

SSURGO SOIL MAP - 4347356.2s



★ Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	NORTH PERRIS GROUNDWATER DEVELOPMENT - FUTURE WELL	CLIENT:	Engen Corporation
ADDRESS:	East Nance Street PERRIS CA 92571	CONTACT:	Cat Hardell
LAT/LONG:	33.8546 / 117.2231	INQUIRY #:	4347356.2s
		DATE:	July 07, 2015 6:01 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: HANFORD

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

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	7 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 5.6
2	7 inches	40 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 7.8 Min: 5.6
3	40 inches	59 inches	stratified loamy sand to coarse sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 5.6

Soil Map ID: 3

Soil Component Name: EXETER

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

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	12 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 9 Min: 7.4
2	12 inches	38 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 9.6 Min: 8.4
3	38 inches	59 inches	stratified fine sandy loam to 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%), silt.	Max: 14 Min: 4	Max: 9.6 Min: 8.4

Soil Map ID: 5

Soil Component Name: TRAVER

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

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

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		
2	16 inches	59 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 42 Min: 14	Max: 9 Min: 7.4

Soil Map ID: 7

Soil Component Name: DOMINO

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

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	14 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 8.4 Min: 7.9
2	14 inches	27 inches	silt loam	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: 8.4 Min: 7.9

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
4	4814	1/4 - 1/2 Mile West
5	CADW50000003601	1/2 - 1 Mile NE
6	4816	1/2 - 1 Mile SW
C9	CADW50000003522	1/2 - 1 Mile SW
B10	4815	1/2 - 1 Mile SW

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
A1	**FED USGS**	**USGS40000138608**
SE		
0 - 1/8 Mile		
Lower		

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-335115117131802		
Monloc name:	004S003W06H002S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070202	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.854185
Longitude:	-117.2225373	Sourcemap scale:	Not Reported
Horiz Acc measure:	Unknown	Horiz Acc measure units:	Unknown
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

	Database	EDR ID Number
A2	**FED USGS**	**USGS40000138607**
SE		
0 - 1/8 Mile		
Lower		

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-335115117131801		
Monloc name:	004S003W06H001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070202	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.854185
Longitude:	-117.2225373	Sourcemap scale:	Not Reported
Horiz Acc measure:	Unknown	Horiz Acc measure units:	Unknown
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
5 **NE** **1/2 - 1 Mile** **Higher**		**CA WELLS**	**CADW50000003601**

Latitude :	33.859301		
Longitude :	117.215385		
Site code:	338593N1172154W001	Casgem sta:	Not Reported
Local well:	EMWD25517	Casgem s 1:	Observation
County id:	33		
Basin cd:	8-5	Basin desc:	San Jacinto
Org unit n:	Southern Region Office	Site id:	CADW50000003601

---

6 **SW** **1/2 - 1 Mile** **Higher**		**CA WELLS**	**4816**

Water System Information:

Prime Station Code:	04S/03W-06Q04 S	User ID:	WAT
FRDS Number:	3310009045	County:	Riverside
District Number:	14	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	335050.0 1171345.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	PERRY STREET #2 WELL		
System Number:	3310009		
System Name:	Eastern Municipal WD		
Organization That Operates System:			
	P.O. Box 8300 San Jacinto, CA 92381-1300		
Pop Served:	253705	Connections:	84839
Area Served:	HEMET-SAN JACINTO-SUN CITY		
Sample Collected:	25-APR-11	Findings:	0.72 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	25-APR-11	Findings:	21. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-AUG-11	Findings:	0.417 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	04-AUG-11	Findings:	0.284 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	04-AUG-11	Findings:	0.105 PCI/L
Chemical:	RA-226 FOR CWS OR TOTAL RA FOR NTNC BY 903.0		
Sample Collected:	04-AUG-11	Findings:	0.206 PCI/L
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.		
Sample Collected:	04-AUG-11	Findings:	0.446 PCI/L
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Sample Collected:	04-AUG-11	Findings:	5.05 PCI/L
Chemical:	GROSS ALPHA		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	04-AUG-11	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	04-AUG-11	Findings:	5400. UG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	17-OCT-11	Findings:	0.67 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	17-OCT-11	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JAN-12	Findings:	0.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-JAN-12	Findings:	19. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-APR-12	Findings:	0.71 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-APR-12	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-AUG-12	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-AUG-12	Findings:	5000. UG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	01-AUG-12	Findings:	0.63 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	08-OCT-12	Findings:	19. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-OCT-12	Findings:	0.62 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	28-JAN-13	Findings:	20. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	28-JAN-13	Findings:	0.65 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-APR-13	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-AUG-13	Findings:	1410. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	14-AUG-13	Findings:	7.2
Chemical:	PH, LABORATORY		
Sample Collected:	14-AUG-13	Findings:	160. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	14-AUG-13	Findings:	190. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	14-AUG-13	Findings:	390. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	14-AUG-13	Findings:	110. MG/L
Chemical:	CALCIUM		

Sample Collected:	14-AUG-14	Findings:	. 120. MG/L
Chemical:	CALCIUM		
Sample Collected:	14-AUG-14	Findings:	. 30. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	14-AUG-14	Findings:	. 120. MG/L
Chemical:	SODIUM		
Sample Collected:	14-AUG-14	Findings:	. 3.6 MG/L
Chemical:	POTASSIUM		
Sample Collected:	14-AUG-14	Findings:	. 330. MG/L
Chemical:	CHLORIDE		
Sample Collected:	14-AUG-14	Findings:	. 0.39 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	14-AUG-14	Findings:	. 45. MG/L
Chemical:	SILICA		
Sample Collected:	14-AUG-14	Findings:	. 270. UG/L
Chemical:	BARIUM		
Sample Collected:	14-AUG-14	Findings:	. 620. UG/L
Chemical:	BORON		
Sample Collected:	14-AUG-14	Findings:	. 940. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	14-AUG-14	Findings:	. 0.101
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	14-AUG-14	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-AUG-14	Findings:	. 1.8 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	14-AUG-14	Findings:	. 12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		

7
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000138615**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-335121117140301		
Monloc name:	004S003W06C001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070202	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.8558516
Longitude:	-117.235038	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1465
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
B10 **SW** **1/2 - 1 Mile** **Higher**		**CA WELLS**	**4815**

Water System Information:

Prime Station Code:	04S/03W-06Q03 S	User ID:	WAT
FRDS Number:	3310009010	County:	Riverside
District Number:	14	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Abandoned
Source Lat/Long:	335049.0 1171355.0	Precision:	100 Feet (one Second)
Source Name:	WELL 1341 PERRY - ABANDONED		
System Number:	3310009		
System Name:	Eastern Municipal WD		
Organization That Operates System:			
	P.O. Box 8300		
	San Jacinto, CA 92381-1300		
Pop Served:	253705	Connections:	84839
Area Served:	HEMET-SAN JACINTO-SUN CITY		

C11 **SW** **1/2 - 1 Mile** **Higher**		**FED USGS**	**USGS40000138560**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-335046117135501		
Monloc name:	004S003W06Q001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070202	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	33.8461295
Longitude:	-117.2328155	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1460
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

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.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

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.

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 Services
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 Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, 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

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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EnGEN Corporation

ENVIRONMENTAL PROFESSIONAL QUALIFICATIONS (2015)

H. Wayne Baimbridge – REPA 46279, Principal

- **Education:** California State University, San Diego, California
  Bachelor of Science Degree, Geology, 1977
- **Professional Registration:** Registered Environmental Property Assessor 46279
- **Professional Associations:** Consulting Engineers and Land Surveyors
  California Geotechnical Engineers Association
  Association of Environmental Professionals

EXPERIENCE: Mr. Baimbridge is the founder and CEO of **EnGEN Corporation**. With over 37 years experience in environmental studies, engineering geology, geotechnical and geo-environmental professional disciplines he is a solid asset to any engineering team. Mr. Baimbridge work practice includes full technical and project management responsibilities. Projects vary in size from high density Community Redevelopment, commercial industrial, multi-density residential, commercial/industrial existing and new developments. Mr. Baimbridge has over 24 years experience working with public agencies and municipalities.

ENVIRONMENTAL SPECIALTY: Mr. Baimbridge has been conducting Phase-I, II and III Environmental Site Assessments, since 1992, where he has contributed to establish a standard of practice that has enhanced and simplified the professional's ability to service the ever-changing landscape of the oversight review process.

Most recently completed related reference projects for Phase I Environmental Site Assessments are:

- **Phase I Environmental Site Assessment** – 39.22 Acres Northwest of Espanade Avenue and Mountain Avenue, APN: 438-030-006, 007, 008, 009 & 012, City of Hemet, County of Riverside, California; Dated: December 20, 2013. The Phase I Site Assessment for this project was incorporated into an overall environmental and water resource study to provide the District with background information on potential real estate purchase of the subject project for development as a potential potable water well site.
- **Phase I Environmental Site Assessment** – 2301 North Tustin Avenue, Santa Ana, California 92705, May 6, 2013. Standard Phase I ESA to determine potential impact from two prior UST's on site.

* **Phase II Environmental Site Assessment** - 2540-B Orange Avenue, Santa Ana, California. Report prepared for Saddleback Associates, Inc., May 3, 2013. The Phase II Site Assessment was performed in order to determine the presence of hydrocarbon-contaminated soil and water at the target property from prior UST(s) located on site and removed in 1989. Scope of work involved oversight of the drilling, sampling, groundwater well monitoring construction, sampling, and testing and report preparation.

* **Phase I Environmental Site Assessment** - 33140 Rancho California Road, Temecula area, Riverside County, California. Report prepared for: Calvary Chapel Bible Fellowship, Dated: April 28, 2013. The Phase I Site Assessment for this project was incorporated into an overall environmental and geotechnical impact study to provide the PR Investors with sufficient background information on the potential real estate purchase of approximate 20 acres for expansion of the existing church facility.