# APPENDIX J

Hazards and Hazardous Materials Report

RAMBOLL

ENVIRONMENT
& HEALTH

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**LONG BEACH, CALIFORNIA**

Date: September 21, 2022

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Dear Ms. DiNapoli:

Ramboll US Consulting, Inc. (Ramboll) has prepared this letter as a follow up to our call between the Los Angeles Regional Water Quality Control Board (LARWQCB), Link Logistics Real Estate (Link Logistics), Tesoro Logistics Operations, LLC (Tesoro/Marathon), AECOM Technical Services, Inc. (AECOM) and Ramboll on August 31, 2022. As discussed, Ramboll is providing environmental consulting services to Link Logistics throughout its acquisition and redevelopment of a portion of the former West Hynes property located at 5910 Cherry Avenue, Long Beach (the "site")[1]. Tesoro/Marathon is the responsible party for the East Hynes facility located to the adjacent east of the site. Link Logistics plans to redevelop the site with one approximately 300,000 square-foot (SF) warehouse building. The majority of the building has approximately 40-foot-high clear height, with a small office area in the southwest corner of the building (Figure 1).

During the due diligence period, Ramboll prepared a Phase I environmental site assessment (ESA) in January 2022. The Phase I ESA (text, figures, and photographs only) is attached, and the full report can be downloaded at the following link: (2022 Phase I). The following summarizes the findings of Ramboll's Phase I ESA:

- The approximately 14.14-acre site is improved with an approximately 32,815 SF administrative building and several additional warehouse and storage buildings. At the time of the Phase I ESA, Pacific Pipeline System LLC (Pacific Pipeline) operated a corporate office building and maintenance operations hub for its southern California pipelines at the southern portion of the West Hynes facility. Other operations included vehicle maintenance by O.C. Vacuum, a hazardous materials transporter and industrial services company. The site is currently being vacated by the tenant, Pacific Pipeline.

[1] The site address was changed by Link Logistics from 5900 Cherry Avenue to 5910 Cherry Avenue.

- Buildings were constructed on the site in 1953 for Richfield Oil Company (Richfield) including the main office building, a laboratory, garage, change building, storehouse, pump shop, shop, store rack, wash rack, and tool building & platform. The use of the site has remained similar throughout the history of the site.
- A recognized environmental condition (REC) was identified related to the groundwater contamination migrating to the site from the East Hynes facility. Based on the most recent groundwater monitoring report prepared by AECOM[2], groundwater monitoring is conducted throughout the 5910 Cherry Avenue site; however, in the Semi-Perched aquifer impacts to groundwater by petroleum-related hydrocarbons including benzene extend across only the eastern portion of the site. Concentrations are significantly higher at the upgradient eastern site boundary. Wells that are located downgradient of the buildings at the site have low or non-detect concentrations and do not indicate impacts to groundwater or source areas as a result of historic site operations.
- Ramboll notes that to the best of our knowledge, subsurface investigations related to specific historical operations at the site have not previously been required by any agency and all investigations at the site to date have been related to the investigation, monitoring, and remediation of the East Hynes facility and the groundwater contamination that has migrated to the site.
- A soil vapor investigation was conducted by ENSR Corporation (ENSR) in 2008 on behalf of Atlantic Richfield Company[3] to evaluate several areas including "two locations adjacent to buildings" on the West Hynes property (see Figure 1). According to the 2008 report, soil vapor samples collected from the two locations at the depths of approximately 2.5 feet, 4.5-5 feet, and 9-10 feet below ground surface and analyzed by United States Environmental Protection Agency (USEPA) Method 8260B. Gasoline range total petroleum hydrocarbons, benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected above laboratory reporting limits (RLs). A second round of soil vapor samples was collected from the two locations at the 4.5-5-foot depth range approximately two weeks later and analyzed by USEPA Method TO-15. Toluene and xylenes were detected in SV-08-09 at concentrations slightly above the laboratory RLs and well below current commercial soil vapor screening levels (using attenuation factor of 0.03). In addition, methane was not detected in any of the samples. ENSR had no recommendations for further evaluation at West Hynes.
- Although not considered a REC, Ramboll noted that the former industrial operations at the site have included the use of hydraulic lifts in the garage, a wash rack, petroleum products and potentially solvents and other chemicals. In addition, two 12-inch abandoned pipelines cross the northern portion of the site. Ramboll is not aware of other construction details of the pipelines or the abandonment method. There was no evidence that spills or releases have occurred at the site. No USTs are known to be on site.

Based on the historical uses at the site, Ramboll plans to prepare a soil management plan (SMP) to provide guidance to Link Logistics and its contractors on actions and procedures to implement in the event that unanticipated subsurface conditions or features are encountered during grading and earthwork operations. The SMP will be provided to the RWQCB for its review. Further, given the impacts to groundwater that have migrated to the site from the East Hynes facility, the potential for vapor intrusion will be addressed with a vapor mitigation plan (VMP). The VMP will be provided to the RWQCB

[2] 2022. Annual 2021 Groundwater Monitoring Report, East Hynes Terminal, 5905 Paramount Boulevard, Long Beach, California, Site Cleanup Program Case No. 0211, Global ID No. SL373462449. January 14.

[3] 2008. 2008 Soil Vapor Assessment Activities, East and West Hynes Properties, East Hynes Terminal, 5905 Paramount Boulevard, Long Beach, California. September.

for its review. The VMP will provide details for a vapor intrusion mitigation system (VIMS) that will be designed conservatively based on the known impacts to groundwater and it will take into consideration the design of the future building, which includes an approximately 40-foot-high ceiling in the warehouse area, and an office area located in the southwest corner. The VIMS will be a passive system that will be designed to be converted to an active system, should conditions warrant. The VMP will also include procedures for post-installation operations and monitoring to evaluate the efficacy of the VIMS.

It is Ramboll's understanding that Link Logistics is planning to initiate demolition and grading operations as early as December 2022. Based on the historical operations at the site and planned schedule of the redevelopment, it is Ramboll's professional opinion that a soil gas survey is not warranted at this time based on the following:

- During the course of the Phase I ESA, no evidence indicating that spills or releases have occurred at the site was discovered and no USTs are known to have been on site.
- Subsurface investigations related to specific historical operations at the site have not previously been required by any agency and all investigations at the site to date have been related to the investigation, monitoring, and remediation of the East Hynes facility and the groundwater contamination that has migrated to the site.
- Soil vapor samples collected from two locations at the site did not have BTEX concentrations above current commercial screening levels.
- Impacts to groundwater by petroleum-related hydrocarbons extend across only the eastern portion of the site. Monitoring wells that are located downgradient of the buildings at the site have low or non-detect concentrations and do not indicate impacts to groundwater or source areas as a result of historic site operations.
- Unanticipated impacts to the subsurface can be addressed by the SMP.
- The planned VMP will address the potential for vapor intrusion at the new warehouse building.

Ramboll anticipates having the SMP and VMP ready for your review by approximately mid-October. Please let us know if you wish to discuss further.

Sincerely,

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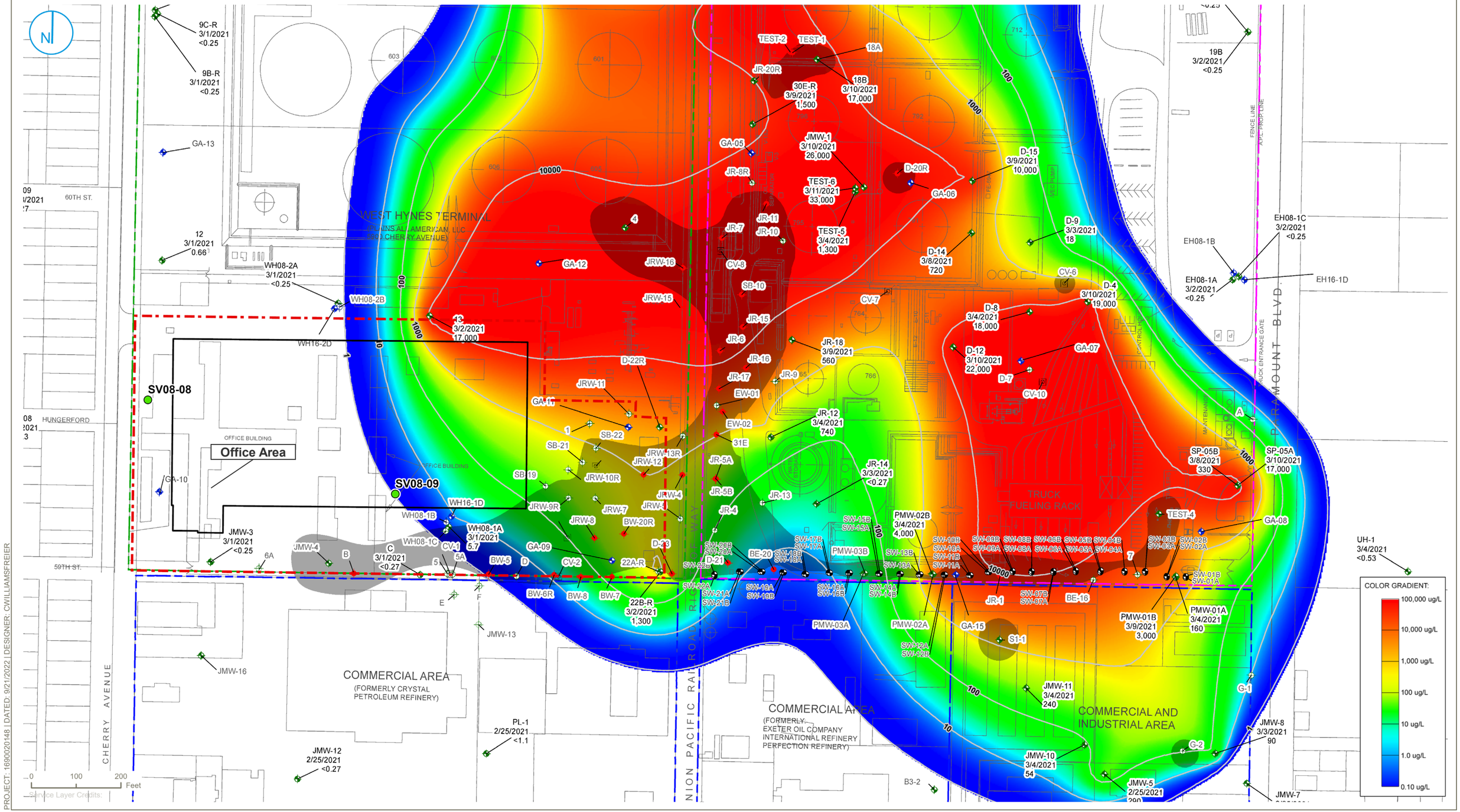
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Attachments

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**ATTACHMENT A**
**FIGURE 1**

C:\Users\CWILLIAMSFREIER\Ramboll\Melody Kneale - Projects_Phase_I\Link\5900 Cherry Ave, Long Beach\Figure 1 - Isoconcentration Map, Benzene in Groundwater, Semi-Perched Aquifer.pptx




**LEGEND**

- WELL ID / SAMPLING DATE / ANALYTE / CONCENTRATION (µg/L)
- LNAPL RECOVERY WELL
- EXISTING GASPUR GROUNDWATER MONITORING WELL (USED FOR GAUGING)
- EXISTING GASPUR GROUNDWATER MONITORING WELL (USED FOR ANNUAL SAMPLING)
- PLANNED GASPUR GROUNDWATER MONITORING WELL
- EXISTING SEMI-PERCHED GROUNDWATER MONITORING WELL (USED FOR GAUGING)
- EXISTING SEMI-PERCHED GROUNDWATER MONITORING WELL (USED FOR ANNUAL SAMPLING)
- PLANNED SEMI-PERCHED GROUNDWATER MONITORING WELL
- SPARGE WELL
- INACTIVE SOIL VAPOR EXTRACTION WELL
- ISOCONCENTRATION CONTOUR (µg/L)
- EXTENT OF EAST HYNES TERMINAL PROPERTY OWNED BY TESORO
- EXTENT OF WEST HYNES TERMINAL OWNED BY PLAINS ALL AMERICAN
- EXTENT OF PROPERTY OWNED BY OTHERS
- EXTENT OF LINK LOGISTICS SITE BOUNDARY
- PROPOSED BUILDING FOOTPRINT
- LNAPL EXTENT BASED ON LNAPL THICKNESS GREATER THAN 0.1 FEET OBSERVED IN WELLS GAUGED DURING AUGUST/SEPTEMBER 2020 SITE-WIDE GAUGING EVENT
- 2008 SOIL VAPOR PROBE LOCATION

NOTE:
SHOWING CONTOURS FOR BENZENE >=1.0 µg/L.

ABBREVIATIONS:
µg/L MICROGRAMS PER LITER
BGS BELOW GROUND SURFACE
LNAPL LIGHT, NON-AQUEOUS PHASE LIQUID
MSL MEAN SEA LEVEL

SOURCES:

2022 GROUNDWATER MONITORING REPORT, AECOM

2008 SOIL VAPOR ASSESSMENT ACTIVITIES, EAST AND WEST HYNES PROPERTIES, ENSR

# ISOCONCENTRATION MAP, BENZENE IN GROUNDWATER, SEMI-PERCHED AQUIFER

5900 Cherry Avenue
Long Beach, California

# FIGURE 01

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A RAMBOLL COMPANY

# ATTACHMENT B
# 5900 CHERRY AVENUE PHASE I ENVIRONMENTAL SITE ASSESSMENT

# PHASE I ENVIRONMENTAL SITE ASSESSMENT

## 5900 CHERRY AVE INDUSTRIAL REDEVELOPMENT

## 5900 CHERRY AVENUE

## LONG BEACH, CALIFORNIA

Prepared for:
**Link Logistics Real Estate**

Prepared by:
**Ramboll US Consulting, Inc.**
**Los Angeles, California**

Date:
**January 2022**

Project Number:
**1690020148**

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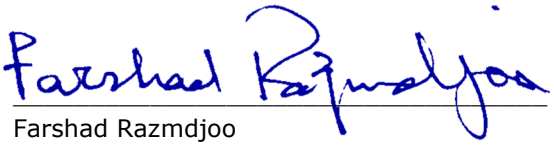
## SIGNATURE AND ENVIRONMENTAL PROFESSIONAL STATEMENT

We declare that, to the best of my professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Alexis Hillman, PG, CHG
Senior Managing Consultant



Farshad Razmdjoo
Managing Principal

# CONTENTS


| | | |
|---|---|---|
| **1.** | **SUMMARY OF CONCLUSIONS** | **1** |
| 1.1 | Site Summary | 1 |
| 1.2 | Recognized Environmental Conditions | 1 |
| 1.3 | Other Findings | 2 |
| 1.4 | Non-Scope Considerations | 3 |
| **2.** | **INTRODUCTION** | **5** |
| 2.1 | Scope of Work | 5 |
| 2.2 | Significant Assumptions | 8 |
| 2.3 | Reliance and General Limitations | 8 |
| **3.** | **SITE DESCRIPTION** | **10** |
| 3.1 | Site Setting | 10 |
| 3.2 | Current Use of the Site | 13 |
| **4.** | **REVIEW OF PUBLIC RECORDS AND OTHER INFORMATION SOURCES** | **15** |
| 4.1 | Environmental Regulatory Database Review | 15 |
| 4.2 | Historical Uses of the Site and Adjacent Properties | 22 |
| 4.3 | Review of Local and State Agency Information | 24 |
| 4.4 | Previous Environmental Assessments and Activities | 25 |
| 4.5 | User-Provided Information | 27 |
| **5.** | **SITE RECONNAISSANCE** | **28** |
| 5.1 | Methodology and Limiting Conditions | 28 |
| 5.2 | General Site Setting and Observations | 28 |
| **6.** | **FINDINGS, OPINION, AND CONCLUSIONS** | **34** |
| 6.1 | Findings, Opinions, and Conclusions | 34 |
| 6.2 | Analysis of Data Gaps | 36 |
| **7.** | **ASTM DEFINITIONS** | **38** |

## FIGURES

Figure 1: Site Location Map
Figure 2: Site Layout
Figure 3: Isoconcentration Map, Benzene in Groundwater, Semi-Perched Aquifer

## APPENDICES

Appendix A: Site Photographs
Appendix B: Environmental Database Report
Appendix C: Historical Research Documentation
C.1: Topographic Maps
C.2: Aerial Photographs
C.3: Abstract of City Directories
C.4: Historical Fire Insurance Maps
Appendix D: Previous Environmental Reports
Appendix E: Environmental Lien Search
Appendix F: Qualifications of Environmental Professionals

# 1. SUMMARY OF CONCLUSIONS

Ramboll US Consulting, Inc. (Ramboll) was retained by Link Logistics Real Estate (Link) to perform a Phase I Environmental Site Assessment (ESA) of the 5900 Cherry Ave Industrial Redevelopment, which is a portion of the Plains All American West Hynes Facility (West Hynes facility), located at 5900 Cherry Avenue in Long Beach, California (herein referred to as the "facility" or the "site"). Ramboll's assessment was conducted in connection with a potential purchase of the site  The objective of the Phase I ESA, which was conducted in conformance with the scope and limitations of ASTM International's *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* E1527-13 (the "ASTM Standard"), was to identify Recognized Environmental Conditions (RECs), as defined in the ASTM Standard (see Section 7).

## 1.1 Site Summary

Pacific Pipeline System LLC (Pacific Pipeline) operates a corporate office building and maintenance operations hub for its southern California pipelines at the southern portion of the West Hynes facility in Long Beach, California. The approximately 14.14-acre site is improved with an approximately 32,815-square-foot administrative building and several additional warehouse and storage buildings.

The area in the vicinity of the site was used for cattle ranching prior to industrial development. In 1923, the East Hynes Terminal property (East Hynes facility; adjacent east of the site) was acquired by Richfield Oil Company (Richfield) and used as a refinery and for distribution. In 1928, Richfield acquired the West Hynes Terminal property (West Hynes facility). The tank farm at the West Hynes facility, to the north of the site, was constructed in 1929 and pipelines were constructed to transport petroleum product between the East and West Hynes facilities. The East and West Hynes facilities were used for gasoline storage and bulk distribution between 1954 and 1977. Both facilities were operated by Four Corners Pipeline Company from 1978 to 1987 and used to store heavy hydrocarbon-based products and to ship petroleum product. Arco Terminal Services acquired the East and West Hynes terminals in 1987. Pacific Pipeline acquired the West Hynes facility, including the site, in 1998. Plains All American is the parent company of Pacific Pipeline.

The site comprises a portion of the West Hynes facility only. In 1953, buildings constructed on the site for Richfield included the main office building, a laboratory, carport, garage, change building, storehouse, pump shop, shop, store rack, wash rack, and tool building & platform. The use of the site has remained similar throughout the history of the site.

## 1.2 Recognized Environmental Conditions

Ramboll performed a Phase I ESA of the 5900 Cherry Ave Industrial Redevelopment located at 5900 Cherry Avenue in Long Beach, California in conformance with the scope and limitations of the ASTM Standard. Any exceptions to, or deletions from, this practice are described in Section 6.2 of this report. This assessment has revealed the following REC in connection with the site:

- **On-Site Groundwater Contamination.** There is known groundwater contamination by total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs) at the site. According to documents reviewed, the site is involved in ongoing groundwater monitoring and remediation activities related to the East Hynes facility, which is located adjacent to the east of the site. The East Hynes facility is owned and operated by Tesoro Logistics Operations LLC (Tesoro), which retains responsibility for the cleanup of groundwater impacts that extend from its property to the site. The East and West Hynes facility cleanups are under the oversight of the Los Angeles Regional Water Quality Control Board (RWQCB).

Impacts to soil and groundwater from petroleum hydrocarbons were first reported in 1982 at the East Hynes facility. Groundwater impacts include light non-aqueous phase liquid (LNAPL) (i.e., undissolved petroleum products that float on top of the groundwater) and dissolved phase petroleum hydrocarbons including TPH (gasoline-range organics [GRO]), benzene, toluene, ethylbenzene, and xylenes, (collectively, BTEX), methyl tert-butyl ether (MTBE), and tert-butyl alcohol (TBA), among others. From 1987 to the present various types of LNAPL recovery have been utilized at both the West and East Hynes facilities by using wells, skimmers, and pumps as well as vacuum trucks. To date, approximately 11,727 barrels of LNAPL have been recovered from beneath the West and East Hynes facilities using primarily vacuum truck extraction. Groundwater beneath the site from the Semi-Perched and Gaspur aquifers is monitored on a semi-annual basis. LNAPL is recovered from on-site wells on a bi-weekly, monthly, and quarterly basis (depending on the well).

Tesoro submitted the LNAPL Remedy Pilot Study Report to the RWQCB in October 2021, which documented four pilot tests for LNAPL remediation (skimming, dual pump liquid extraction, air sparging during vacuum truck recovery, and biosparging). Based on the results of pilot testing, AECOM recommended biosparging as the LNAPL remedial technology at the site to enhance the current mobile recovery program. In mid-2021, 26 biosparging wells were installed along the southern boundary of the site at 17 locations (nine are co-located pairs installed at different depths, see Figure 2). These wells will be used for a future biosparging system that is planned for the site. Ramboll is not aware of any other current on-site remediation activities.

The subsurface investigation reports reviewed by Ramboll did not evaluate whether the presence of this contamination poses a vapor intrusion concern to the current or future building occupants at the site. Based on Ramboll's review of the available data, concentrations of certain VOCs (particularly benzene) in groundwater located beneath the eastern portion of the site exceed California vapor intrusion screening criteria, indicating a potential vapor intrusion concern. According to the most recent groundwater monitoring report, the highest concentration of benzene beneath the site was 16,000 micrograms per liter (µg/l) in the Semi-Perched aquifer (approximately 21 to 33 feet below ground surface [bgs]) in the north-central portion of the site. This concentration exceeds the risk-based screening level[1] for commercial/industrial sites of 1.8 µg/l. Ramboll is not aware of any soil vapor samples having been collected from beneath the site.

## 1.3 Other Findings

Although not considered a REC, Ramboll identified the following notable other findings. The term "other finding" is not defined by ASTM; rather, Ramboll uses the term to connote areas of contingent risk that are not clearly defined by the ASTM Standard.

- **Past Industrial Operations at the Site.** Since the 1950s, the site has been used for various industrial purposes, including auto and truck maintenance, and a machine shop. These former industrial operations have included the use of hydraulic lifts in the garage, a wash rack, petroleum products and potentially solvents and other chemicals. No subsurface characterization activities are known to have been conducted at the site in relation to these operations. Because Ramboll's review did not identify documentation of a release, a suspected release, or a potentially material threat of a release of a hazardous substance or petroleum product related to this matter, it is not considered a REC; however, absent further information regarding the specific nature of historical chemical use, chemical handling practices, and associated wastes, Ramboll cannot rule out the

[1] 2019. San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels.

possibility that inadvertent spills or releases of chemicals or petroleum products may have occurred in the past. There is no current regulatory scrutiny related to contamination matters at the site; however, during site redevelopment, it is possible there will be areas where impacted soil is encountered that will require characterization, excavation, and special handling and disposal at licensed facility.

- **Subsurface Features.** According to documents provided by the client, two 12-inch abandoned pipelines cross the northern portion of the site. Ramboll is not aware of other construction details of the pipelines or the abandonment method. West Hynes is listed on several databases as having two 10,000-gallon underground storage tanks (USTs) for unleaded and diesel; however, no additional information is provided regarding the specific locations of the USTs and they may not be located on the site. Facility personnel are not aware of any USTs at the site and no other agency records indicate that there are USTs beneath the site. In addition, there are two hydraulic lifts in the Garage Building as well as a clarifier and two sumps associated with the wash rack. None of these subsurface features are known to have been investigated during previous subsurface investigation activities at the site.

  Because Ramboll's review did not identify documentation of a release, a suspected release, or a potentially material threat of a release of a hazardous substance or petroleum product related to this matter, it is not considered a REC. There is no apparent current regulatory requirement to evaluate these areas, nor is there scrutiny of the site by regulatory officials.

A discussion of *de minimis* conditions identified during this review (if any) is presented in Section 6.1 of this report.

## 1.4 Non-Scope Considerations

Ramboll identified the following findings that relate to non-scope considerations (as discussed in Section 2.2), as detailed below:

- **Asbestos-Containing Materials (ACMs).** Given the date of construction of the buildings at the site, it is possible that ACMs are present in building materials. A comprehensive asbestos survey has not been conducted at the facility; however, a limited survey was conducted by Stantec in 2020. Samples were collected from the "D" and "E" Wings of the administrative office building, the Marine Warehouse, and the empty prefabricated Office Building in the northeast portion of the site. A total of 181 bulk samples were collected from 43 homogeneous areas at the site. Of those, ACM was identified in seven samples of black adhesive associated with carpet tile found throughout the "D" wing.
- **Water Intrusion/Mold.** Ramboll did not perform a mold survey at the site; however, facility personnel provided information regarding past water intrusion events. According to facility personnel, the site has not experienced significant water intrusion events.
- **Lead-Based Paint.** Lead was a major ingredient in paint pigment prior to and through the 1940s. While other pigments were used in the 1950s, the use of lead in paint continued until the early 1970s. In 1978, the Consumer Products Safety Commission banned paint and other surfacing coating materials that are "lead-containing paint." Based on the construction date of the buildings at the site in the 1950s, it is possible that lead-based paint (LBP) was used historically on facility structures. Ramboll observed the paint to be generally in good condition with the exception of the interior of the garage, where peeling paint was noted. Stantec conducted a limited LBP survey in 2020 during which three bulk paint-chip samples were collected. No LBP was identified (LBP is

defined as containing greater than or equal to 0.5 percent lead); however, lead-containing paint above the laboratory reporting limit was identified in one of the three samples.

- **Radon.** Based on information included in the environmental database report, the site is located in an area categorized as Zone 2, which has average indoor basement radon levels between 2 and 4 picoCuries per liter (pCi/L). The United States Environmental Protection Agency's (USEPA's) continuous exposure limit, which is the limit at which further testing or remedial action is suggested, is 4.0 pCi/L. This USEPA continuous exposure limit applies to residential, not commercial, properties. According to the California Radon database, of 11 radon test results in the same zip code as the site, none were greater than 4 pCi/L. The median first floor radon value for 63 sites surveyed in Los Angeles County was 0.711 pCi/L.

# 2. INTRODUCTION

## 2.1 Scope of Work

Ramboll conducted a Phase I ESA of the 5900 Cherry Ave Industrial Redevelopment, which is a portion of the Plains All American West Hynes facility (West Hynes facility), in Long Beach, California. The Phase I ESA relied upon the references noted below and included the following tasks:

- A visit to the site by Alexis Hillman of Ramboll on January 27, 2021 and January 11, 2022 to observe the exterior and interior features of the site and to identify the uses and conditions specified in Sections 9.4.1 through 9.4.4.7 of the ASTM Standard. In addition, Ramboll observed the adjoining properties from the site or adjacent public thoroughfares. Photographs taken during the site visit are presented in Appendix A.
- A telephone interview on January 27, 2021 and an in-person interview on January 11, 2022 with the following individuals (year of initial hire at the site indicated in parentheses): Bill Senner, Supervisor Environmental Health and Safety at Plains All American Pipeline (2012). The aforementioned individual is referred to herein as "facility personnel". The facility personnel interviewed by Ramboll were identified by the Company as having good knowledge of the uses and physical characteristics of the site.
- A review of information contained in federal and state environmental databases, as obtained from the sources noted below:
  - A radius report prepared by EDR, Inc. in January 2021 and January 2022 (EDR, see Appendix B), which presents the results of searches of federal and state databases for the site, as well as properties near the site. The radius searched for each database, as well as the databases themselves, was selected in accordance with the ASTM Standard.
  - The United States Environmental Protection Agency's (USEPA's) EnviroFacts database, which provides site information contained in multiple USEPA regulatory databases.
  - A review of the California Department of Toxic Substances Control's EnviroStor (EnviroStor) website, which provides information with respect to property cleanups in the site vicinity.
  - A review of the California Geologic Energy Management Division (CalGEM) website, which provides information regarding the locations of oil and gas wells on and in the vicinity of the site.
- A review of the California Water Resources Control Board's GeoTracker website (GeoTracker), which provides information with respect to releases to soil and groundwater in the site vicinity. The following sources were reviewed, which are included as Appendix D:
  - *Determination of Areal and Vertical Extent and Characterization of Ground Water Contamination, Site Investigation, Four Corners Pipe Line Company, Hynes Tank Farm*, prepared by Renfro Associates, Inc., dated October 1988 (the "1988 Site Investigation report");
  - *Site Characterization Report, Four Corners Pipe Line Company, Hynes Tank Farm*, prepared by Montgomery Watson, dated September 1993 (the "1993 Site Characterization report");
  - *Aquifer Definition Report*, prepared by CH2M Hill, dated September 1994 (the "1994 Aquifer Definition report");

- *Baseline Risk Assessment, ARCO Hynes Site*, prepared by ChemRisk Division of McLaren/Hart Environmental Engineering Corporation, dated April 1995 (the "1995 Baseline Risk Assessment report");
- *Cleanup and Abatement Order No 95-107 Requiring Atlantic Richfield Company (ARCO) To Cleanup and Abate Conditions of Soil and Groundwater Pollution at its East/West Hynes Tank Farm Facility*, prepared by California Regional Water Quality Control Board, Los Angeles Region (RWQCB), dated August 1995 (the "CAO No. 95-107");
- *MTBE Investigation Report, East Hynes Bulk Terminal*, prepared by Jacobs Engineering, dated January 1999 (the "1999 MTBE Investigation report");
- *Baseline Risk Assessment Addendum, ARCO Terminal Services Corporation, East Hynes Terminal*, prepared by The RETEC Group, dated December 2005 (the "2005 Baseline Risk Assessment report");
- *Offsite Soil Vapor Probe Installation and Sampling Results, Associated with ATSC East Hynes Terminal*, prepared by AECOM, dated February 2011 (the "2011 Offsite Soil Vapor Installation and Sampling report");
- *Addendum to Offsite Soil Vapor Probe Installation and Sampling Results, and Work Plan for Additional Soil Vapor Assessment, ATSC East Hynes Terminal*, prepared by AECOM, dated November 2011 (the "2011 Addendum to Offsite Soil Vapor Installation and Sampling report");
- *Report of Additional Offsite Soil Vapor Assessment Associated with ATSC East Hynes Terminal*, prepared by AECOM, dated October 2012 (the "2012 Offsite Soil Assessment");
- *Groundwater Investigation Report, Tesoro Logistics Operations LLC, East Hynes Terminal Facility*, prepared by AECOM, dated April 2015 (the "2015 Groundwater Investigation report");
- *Interim Remedial Action Plan, East Hynes Terminal*, prepared by AECOM, dated March 2016 (the "2016 IRAP");
- *Investigation of the Dissolved Phase Extent of Petroleum Hydrocarbons in Groundwater - Interim Report*, prepared by AECOM, dated March 2018 (the "2018 Interim Dissolved Phase Groundwater Investigation report");
- *Feasibility Study for Enhanced LNAPL Removal, East Hynes Terminal*, prepared by AECOM, dated October 2018 (the "2018 Feasibility Study report");
- *East Hynes Southern Boundary Soil Vapor Monitoring Workplan*, prepared by AECOM, dated December 2018 (the "2018 East Hynes Soil Vapor Workplan");
- *West Hynes Southern Boundary High-Resolution Investigation Workplan*, prepared by AECOM, dated March 2019 (the "2019 West Hynes Soil Vapor Workplan");
- *Investigation of the Dissolved Phase Extent of Petroleum Hydrocarbons in Groundwater - Final Report*, prepared by AECOM, dated November 2019 (the "2019 Dissolved Phase Groundwater Investigation report");
- *2020 Annual Groundwater Monitoring Report, East Hynes Terminal*, prepared by AECOM, dated January 2021 (the "2020 Groundwater Monitoring report");
- *Comments on Feasibility Study for Enhanced LNAPL Removal*, prepared by RWQCB, dated July 2020 (the "2020 RWQCB FS Report Comments");

  - *Comments on Investigation of the Dissolved Phase Extent of Petroleum Hydrocarbons in Groundwater – Final Report,* prepared by RWQCB, dated October 20, 2020 (the "2020 RWQCB Investigation Report Comments");
  - *Third Quarter 2020 LNAPL Recover Progress Report,* prepared by AECOM, dated October 2020 (the "2020 Third Quarter LNAPL Recovery report");
  - *Deep Groundwater Investigation Workplan, East Hynes Terminal, 5905 Paramount Boulevard, Long Beach, California,* prepared by AECOM, dated, July 30, 2021;
  - *Letter RE: Water Code Sections 13267 and 13383 Order WQ 2021-0006-DWQ For the Determination of the Presence of Per- and Polyfluoroalkyl Substances at Arco (Tesoro) East Hynes Terminal, 5905 Paramount Boulevard, Long Beach, Los Angeles County, GeoTracker Global ID: SL373462449,* prepared by RWQCB, dated August 31, 2021;
  - *Third Quarter 2021 LNAPL Recovery Progress Report, July 1 – September 30, 2021, East Hynes Terminal, 5905 Paramount Boulevard, Long Beach,* prepared by AECOM, dated October 15, 2021; and
  - *LNAPL Remedy Pilot Study Report, East Hynes Terminal, 5905 Paramount Boulevard, Long Beach,* prepared by AECOM, dated October 29, 2021.
- A review of standard historical sources (included as Appendix C) and local agency inquiries, as defined in the ASTM Standard. The following resources were reviewed:
  - Readily available historical sources (as identified in Section 4.2 of this report and included as Appendix C) to develop a history of the previous uses of the site and surrounding area.
  - Local building permit information, as obtained via EDR's Lightbox application
  - Historical and site-specific information obtained from the following local agencies: the Long Beach Building Department (Building Department), the Los Angeles County Assessor's Office (Assessor), and the Long Beach Fire Department (Fire Department).
- A review of documents provided to Ramboll by facility personnel, including environmental permits, waste manifests/off-site waste disposal information, facility-prepared plans. Facility personnel reported that, to their knowledge, no Phase I ESAs or environmental compliance audits have previously been conducted for the site. In addition, Ramboll was provided with the following previous environmental assessment reports, which are included as Appendix D:
  - *West Hynes Summary of Environmental Conditions, 5900 Cherry Avenue, Long Beach CA*, prepared by Stantec, dated September 2020 (the "2020 Environmental Conditions report"); and
  - *Pre-Demolition Limited Asbestos-Containing Materials and Lead-Based Paint Survey Report*, prepared by Stantec, dated October 2020 (the "2020 Limited Asbestos and Lead-Based Paint Survey report".
- A review of physical setting sources, as defined in the ASTM Standard, including:
  - The current United States Geological Survey (USGS) 7.5-minute topographic map that shows the area on which the site is located.
  - Geologic, hydrogeologic, or hydrologic sources as provided in the environmental database report and in the previous environmental reports for the site, as listed above.

- A search for environmental liens or other activity and use limitations (AULs) for the site, provided by the third-party database provider (as shown in Appendix E). Ramboll ordered the lien search using the parcel numbers believed to be associated with the site, as obtained from the local tax assessor's office and other online resources.
- A review of any information provided by the user of this assessment, including information consistent with Appendix X3 of the ASTM Standard. Pertinent information, if any, is discussed in the appropriate sections of this report

This assessment was conducted in accordance with the methodology specified in ASTM Standard E1527-13, as agreed upon by Ramboll and Link in January 2021. The standard ASTM scope was expanded to include a limited review of asbestos-containing materials, lead-based paint, mold, or radon, based solely on: (i) the ages of the building (and prior reports, if any), for the potential presence of asbestos and lead-based paint; (ii) information and answers provided on a water intrusion questionnaire to be completed during the site walk with site representatives for the potential presence of mold, and (iii) information provided in the EDR report for the potential presence of radon.

## 2.2 Significant Assumptions

In conducting this review, no significant assumptions were made.

## 2.3 Reliance and General Limitations

This report has been prepared for the exclusive use of Link and may not be relied upon by any other person or entity without Ramboll's prior express written permission.

This report is considered current only for a period of 180 days from the site inspection. The conclusions presented in this report represent Ramboll's professional judgment based upon the information available and conditions existing as of the date of this report. In performing its assignment, Ramboll must rely upon publicly available information, information provided by the client, and information provided by third parties. Accordingly, the conclusions in this report are valid only to the extent that the information provided to Ramboll was accurate and complete. This review is not intended as legal advice, nor is it an exhaustive review of site conditions or facility compliance. Ramboll makes no representations or warranties, expressed or implied, about the conditions of the site.

Ramboll's scope of work for this assignment did not include collecting samples of any environmental media. As such, this review cannot rule out the existence of latent conditions including contamination not identified and defined by the data and information available for Ramboll's review; however, this report is intended, consistent with normal standards of practice and care, to assist the client in identifying the risks of such latent conditions.

The scope of work for this assessment did not include an asbestos survey or inspection. According to federal OSHA regulations (29 CFR §1910.1001) and the Model Accreditation Plan (MAP; 40 CFR Part 763, Subpart E, Appendix C), the inspection, testing, evaluation, and/or sampling of suspect asbestos-containing materials must be conducted by an accredited inspector; these activities were not performed as part of this environmental review. Comments in this report regarding the condition of building materials at the site, including presumed or suspect ACMs, represent only Ramboll's observations at the time of the site visit and are not intended to be consistent with definitions regarding ACMs condition in the Asbestos Hazard Emergency Response Act (AHERA) or in other federal or state asbestos regulations or industry standards.

Other issues considered outside the scope of the ASTM Standard and this review include regulatory compliance, lead in drinking water, wetlands, polychlorinated biphenyls (PCBs) in building materials, cultural and historic resources, ecological resources, endangered species, fire safety, and high voltage power lines.

# 3. SITE DESCRIPTION

## 3.1 Site Setting

Pacific Pipeline owns and operates an administrative office building and maintenance operations hub for its southern California pipelines in Long Beach, California, (the "site" or the "facility"). The site is a 14.14-acre portion of the larger West Hynes facility, to the north of the site, and is located approximately 17 miles south of downtown Los Angeles (Figure 1).

According to the Assessor's Office, the site comprises all of assessor's parcel number (APN) 7119-018-024 and a portion of APN 7119-018-028. According to information provided by Link, re-parcelization has been completed; however, the new parcel is not yet reflected on the Assessor's website.

The approximately 14.14-acre site is improved with an approximately 32,815-square-foot administrative building in the western portion of the site identified as Feature ID 1 on Figure 2. Several other buildings totaling approximately 11,025 square feet are located in the central portion of the site including (Feature ID in parentheses) a Garage Building (2), an Operations Control Center and Conference Room (3), a Warehouse/Office Building (4), a Telecommunications Shop, Office and Fitness Center (5), an Electrical Shop and Offices (6), a Marine Warehouse (7), and an empty prefabricated Office Building (9). Other smaller structures on the site consist of a File Storage Room (Former Laboratory), a wash rack (8), and a few small sheds.

O.C. Vacuum, a hazardous materials transporter and industrial services company, formerly leased a portion of the Garage Building for vehicle maintenance, a portion of the Telecommunications/Office/Fitness Center Building for its offices, and a portion of the storage yard for storage of roll-off bins, equipment, and fleet vehicles. Zenith Energy West Coast Terminals formerly leased a portion of the administrative office building for its office operations but did not lease or use any other portion of the site. Both tenants vacated the site in 2021.

The primary site access is via Cherry Avenue at the western site boundary. There is an asphalt-paved visitor parking area present at the southwestern site boundary. An asphalt-paved driveway at the northwestern corner of the site leads to a guard shack and then to two employee parking areas that are connected by a paved roadway on the east side of the administrative building. The area surrounding the visitor parking lot is landscaped with grass, trees, and other vegetation. There are no on-site surface water bodies.

Table 1 provides an overview of physical setting and utility information for the site.

**Table 1: Physical Setting and Utility Information**

| Conditions | Source | Description |
|---|---|---|
| **Topography** | | |
| Elevation (above mean sea level) | USGS topographic map; Google Earth | Ranges from approximately 46 feet near the eastern site boundary to 41 feet near the western site boundary. |
| Topographic Gradient | USGS topographic map; visual observations | Relatively flat on-site, with a gentle downward slope to the west. Regional topography is also relatively flat and slopes gently upward to both the northeast and southwest. |

**Table 1: Physical Setting and Utility Information**

| Conditions | Source | Description |
|---|---|---|
| Local Land Use | Visual observations | The facility is located in a mixed industrial, residential, and commercial land use area.<br>North: West Hynes Tank Farm<br>East: Railroad right-of-way beyond which is the East Hynes Tank Farm.<br>South: Los Angeles County Department of Animal Care and Control, Food 4 Less grocery store, marketing and event planner, and self-storage facility.<br>West: Cherry Avenue beyond which are commercial businesses including a church, tax agency, restaurant, market, and cocktail bar. Beyond the commercial businesses is a residential neighborhood.<br>Ramboll did not observe any conditions on adjacent properties that represent a potential contamination concern to the site with the exception of the tank farm and pipeline operations. Subsurface impacts as a result of tank farm and pipeline operations are discussed in detail in Section 4.4. |
| Nearest Residence | Visual observations | Approximately 220 feet west of the site. |
| **Hydrology** | | |
| Storm Water Runoff | Visual observations | Percolates into the ground surface at unpaved areas or sheet flows to a storm drain on Cherry Avenue. |
| Nearest Surface Water Body to the Site | USGS topographic map; Visual observations | The Los Angeles River is located approximately 1.45 miles west at its nearest point. The river ultimately discharges to the Pacific Ocean approximately seven miles to the south of the site. |
| Flood Plain | FEMA*; Facility personnel | Facility personnel reported no known occurrences of flooding at the site. The site is not located within a 500-year flood zone. |
| Wetlands | NWI*; Visual observations | There are no federally-designated wetlands on-site, and no wetlands areas are present within one mile of the site. Ramboll did not identify any obvious suspected wetlands at the site during the site visit. |
| **Geology and Hydrogeology** | | |
| Presumed Direction of Shallow Groundwater Flow | 2020 Groundwater Monitoring report | According to the 2020 groundwater monitoring activities, groundwater flows in a west-southwesterly and southwesterly direction at the site. |
| Depth to Groundwater | 2020 Groundwater Monitoring report | Groundwater was encountered at approximately 20 to 32 feet bgs in on-site monitoring wells during the 2020 monitoring event. |

**Table 1: Physical Setting and Utility Information**

| Conditions | Source | Description |
|---|---|---|
| On-site Wells | Visual observations; 2020 Groundwater Monitoring report | There are 48 wells on-site (monitoring wells, LNAPL recovery wells, and biosparging wells) that are owned by Tesoro and associated with the East Hynes impacts to groundwater. In addition, there are four inactive soil vapor extraction wells. |
| Oil & Gas Wells | CalGEM | No oil & gas wells were identified on-site. One plugged dry hole was identified on the East Hynes property. |
| Nearest Groundwater Supply Wells | Database report | One federally registered well is present between one-quarter mile and one-half mile north of the site; it is not registered as public supply wells. Approximately 126 private or municipal wells that may be used for water supply are located between one-quarter mile and one-half mile distance and in all directions from the site. |
| Geologic Conditions | 1993 Site Characterization report | According to the 1993 Site Characterization report, which included a review of over 70 boring logs. Between the ground surface and 15 feet bgs, the soil comprises poorly graded sands, silty sands, and silts. A sequence of silty clay and other fine-grained sediments is found at approximately 12 feet bgs. From approximately 15 to 30 feet bgs, soils comprise sands, sandy clay, and clay. The uppermost water-bearing unit is the Semi-Perched aquifer, which is underlain by the Bellflower aquitard. The Gaspur aquifer underlies the Bellflower aquitard and extends to an approximate depth of 200 feet beneath the site. |
| **Site Utility Information** | | |
| Heating and Cooling Equipment | Facility personnel | Natural-gas fired heating units supply building heat.<br>The building is cooled with air conditioning units that contain R22. |
| Natural Gas Service | Facility personnel | The site is provided with natural gas service from the City of Long Beach. |
| Use of Fuel Oil for Building Heat | Facility personnel | No known current or former use of fuel oil for building heat. |

**Table 1: Physical Setting and Utility Information**

| Conditions | Source | Description |
|---|---|---|
| Foam-based Fire Suppression System | Facility personnel | The West Hynes facility is equipped with a foam-based fire suppression system that includes Class B Aqueous Film Forming Foams [AFFF]. In January 2021, Ramboll observed one drum of AFFF adjacent to a water hydrant in the northeast portion of the site; however, the drum had been removed as of the January 2022 site visit. Ramboll observed one drum of AFFF in the hazardous waste storage area. Ramboll notes that certain foams (e.g., Class B AFFF) sometimes contain perfluoroalkyl substances (PFAS). Based on the label, the drum contains AFFF with Chemical Abstracts Service (CAS) # 112-34-5, which according to the Safety Data Sheet, does not contain PFAS. Facility personnel indicated that, to their knowledge, foams from the system have never been released/deployed at the site. |
| Water Supply | Facility personnel | The facility receives drinking water from the Long Beach water system. |
| Sanitary Sewer | Facility personnel | The facility discharges wastewater to the municipal sanitary sewer system. |
| Septic Systems | Facility personnel | No identified current or former septic systems. |

Notes:

FEMA = Federal Emergency Management Agency; NCSS = National Cooperative Soil Survey ; NWI = National Wetlands Inventory

* - Source was provided in the environmental database report.

During the site visit, Ramboll walked or drove by the borders of the properties that are adjacent to the site. Ramboll did not enter the neighboring properties.

## 3.2 Current Use of the Site

### 3.2.1 Current Operations

The site is currently used by Pacific Pipeline as its corporate office building and maintenance operations hub for its southern California pipelines. In addition to an administrative office buildings, on-site structures include a Garage Building, an Operations Control Center and Conference Room, a Warehouse/Office Building, a Telecommunications Shop, Office and Fitness Center, an Electrical Shop and Offices, a Marine Warehouse, and an empty prefabricated Office Building. Other smaller structures on the site consist of a File Storage Room (Former Laboratory), a wash rack, and a few small sheds.

O.C. Vacuum, a hazardous materials transporter and industrial services company, previously leased a portion of the Garage Building for vehicle maintenance, a portion of the Telecommunications/Office/Fitness Center Building for its offices, and a portion of the storage yard for storage of roll-off bins, equipment, and fleet vehicles. Zenith Energy West Coast Terminals previously leased a portion of the administrative office building for its office operations. Tenants were no longer at the site during the January 2022 site visit.

Operations at the facility include administrative activities, vehicle maintenance, equipment and materials storage related to pipeline maintenance, shipping, receiving, and building maintenance.

Materials stored include paints, coatings, pipeline parts, aerosols, compressed gases (nitrogen, acetylene), and cleaning solutions that are used elsewhere. The facility does not maintain any raw materials and does not conduct any manufacturing or fabrication at the site. Facility personnel knew of no use of chlorinated solvents at the site; however, some aerosols containing chlorinated solvents have been stored at the site in the past. According to facility personnel, operations at the site have remained generally consistent throughout its history.

### 3.2.2 Waste Management

Pacific Pipeline System LLC West Hynes Pump Station is listed as a large quantity generator (LQG) (USEPA ID CAD000628420) under the Resource Conservation and Recovery Act (RCRA).Hazardous waste and nonhazardous waste are stored in fenced concrete storage area with secondary containment at the east end of the site (Figure 2, Feature ID 11). During the January 2022, Ramboll observed three plastic-lined cardboard containers with used personal protective equipment (PPE) and oily rags, an empty drum that formerly contained AFFF, a drum containing empty aerosol canisters, and a drum containing AFFF. There were several large puddles of water from a recent rain event. The concrete was in good condition.

Nonhazardous waste generated at the site consists of general trash. Previously, used oil, and used solvent from vehicle maintenance was collected in the used oil AST (Garage Building) for off-site management by O.C. Vacuum. Used oil and used solvent were not observed in January 2022. General facility trash is collected in several covered dumpsters for removal by Waste Management. These dumpsters and compactor are positioned on pavement in several locations at the site.

### 3.2.3 Wastewater and Storm Water

Sanitary wastewater, which includes wastewater from bathroom and kitchen areas, is discharged to the municipal sanitary sewer system.

Process wastewater generated by the facility consists primarily of vehicle and equipment washwater and air compressor condensate. Air compressor condensate is discharged onto the concrete floor within the building. Vehicle and equipment washwater is collected in one of two sumps at the wash rack and routed to a clarifier at the southern end of the wash rack. Washwater is then pumped into an aboveground oil/water separator tank before being discharged to the sanitary sewer.

Storm water percolates into the ground surface at unpaved areas or sheet flows to a storm drain on Cherry Avenue.

### 3.2.4 Air Emissions

Air emissions from the facility are limited to combustion products resulting from the operation of the site’s natural-gas-fired comfort heating system.

# 4. REVIEW OF PUBLIC RECORDS AND OTHER INFORMATION SOURCES

## 4.1 Environmental Regulatory Database Review

Ramboll contracted with EDR in January 2021 and January 2022 to prepare of summary of listings in federal and state agency databases for the site and facilities within applicable radii of the property, as specified by the ASTM standard.[2] A copy of the environmental database search reports are presented in Appendix B.

### 4.1.1 Database Review for Site

Ramboll reviewed the results of the state and federal environmental database searches performed by the third-party database provider (see Appendix B) and also reviewed information available in the GeoTracker and EnviroStor databases. The site is listed on numerous environmental databases, as discussed in Table 2. Ramboll notes that the listings are related to the larger West Hynes facility, which includes the site. Ramboll reviewed both the 2021 and 2022 database searches and did not note significant changes between the two.

**Table 2: Summary of Environmental Database Listings for the Site**

| Summary of Information Contained in Database | Ramboll's Comments |
|---|---|
| ARCO Pipeline Company is listed in the UST database and West Hynes Tank Farm is listed on the AST database. However, no further information is provided for either listing.<br><br>West Hynes/Cherry is listed in the SWEEPS UST and CA FID UST databases. The CA FID UST listing is for two active 10,000-gallon regular unleaded and diesel fuel USTs. No further information is provided in the SWEEPS UST listing.<br><br>Rynne Fischer, Villa Lease, West Hynes/Cherry, and Four Corners Pipeline Company are listed in the HIST UST. Additional information includes the following:<br><br>- Rynne Fischer listing is for one product UST.<br><br>- Villa Lease listing is for one product UST.<br><br>- West Hynes/Cherry listing is for three tanks including one 10,000-gallon "unleaded" UST, one 10,000-gallon "diesel" UST, and one 6,463-gallon "waste" tank storing "car wash & engine cleaning waste water".<br><br>- Four Corners Pipeline Company listing is from 1988 for one 2,000-gallon sump and one 392-gallon sump. | ASTs and USTs are further discussed in Sections 5.2.2 and 5.2.3, respectively. Facility personnel were not aware of any USTs on the site. The information provided in the HIST UST listing and available on the GeoTracker database indicates two 10,000 tanks containing diesel and unleaded fuel; however, the information is not clear about the dates or precise location of the tanks. Ramboll cannot confirm with the information provided that the two 10,000-gallon tanks are on the site. The 6,463-gallon waste tank is likely related to the on-site wash rack area. |

[2] EDR uses the term "radii" to refer to the ASTM terminology "approximate minimum search distance" in the environmental database report.

**Table 2: Summary of Environmental Database Listings for the Site**

| Summary of Information Contained in Database | Ramboll's Comments |
|---|---|
| Several entities are listed in the California Environmental Protection Agency Regulated Site Portal (CERS) database including the following:<br>- Pacific Technical Services is listed for "USEPA Air Emission Inventory".<br>- O.C. Vacuum, Inc. is listed for "Chemical Storage Facilities". Several violations are noted from the Long Beach Environmental Health Department (LBEHD) dating from 2015 through 2019 for "failure to review, revise, and recertify the business plan at least once every three years" and "failure to inspect hazardous waste tanks". A separate violation under the same listing was for Pacific Pipeline for a violation of "SW – Deficient BMP".<br>- Tesoro West Hynes Storage and West Hynes Station are both listed for "NPDES Wastewater and Stormwater". A violation was noted for "detection limit for phenols was higher than permit effluent limit in 4th quarter 2002.<br>- West Hynes Station and Plains West Coast Terminals LLC was listed for "Chemical Storage Facilities". A violation under West Hynes Station was noted on 4/18/2019 for failure to complete and electronically submit hazardous material inventory information". The violation was returned to compliance on 6/6/2019.<br>Arco-Four Corners Pipeline Co is listed for "Cleanup Program Site" related to the open RWQCB case. | Compliance related listings do not suggest a contamination concern to the site. The open RWQCB case is discussed in Section 4.4. |
| O.C. Vacuum, Inc. is listed in the CERS HAZ WASTE database as a "Hazardous Waste Generator". O.C. Vacuum is also list in the HWT, MWMP, and PADS databases. No further information is provided.<br>O.C. Vacuum is listed in the RCRA NonGen/NLR database as of 10/24/2006.<br>West Hynes Station is listed in the CERS HAZ WASTE database as a "RCRA LQ HW Generator" (RCRA Large Quantity Generator). | These listings do not suggest a contamination concern to the site. Wastes generated at the site are further discussed in Section 3.2.2. |
| West Hynes, ARCO Hynes Tank Farm, West Hynes Tank Farm, and Bulk Oil Terminal are listed in the California Hazardous Material Incident Report System (CHMIRS) database for several releases of crude oil. | The CHMIRS listings do not appear to have occurred on the site or to have reached the site and are therefore not discussed further. |
| ARCO Hynes Tank Farm and Arco-Four Corners Pipeline Co are listed in the CPS-SLIC database related to the open RWQCB case. | The open RWQCB case is discussed in Section 4.4. |

**Table 2: Summary of Environmental Database Listings for the Site**

| Summary of Information Contained in Database | Ramboll's Comments |
|---|---|
| Tesoro Socal Pipeline Company LLC and Plains Pipeline L.P. are listed in the Department of Transportation, Office of Pipeline Safety Incident and Accident Data (DOT OPS) database for release incidents in 2016. These incidents were reportedly cleaned up by the responsible party. | The DOT OPS listings do not appear to have occurred on the site or to have reached the site and are therefore not discussed further. |
| Pacific Pipeline System LLC is listed in the ENF database for "Clean-up and Abatement Order" effective 8/1/1995 for soil and groundwater contamination. The listing appears to be associated with the open RWQCB case. | The open RWQCB case is discussed in Section 4.4. |
| The site address is listed on the ERNS database as having had five releases and as West Hynes Tank Farm on the SPILLS database for one release. The ERNS listings are related to releases of crude oil, water with gasoline, and naphtha due to equipment failure, operator error, and/or unknown causes. The leaks were reportedly cleaned up. The SPILLS listing is related to the open SLIC case under RWQCB oversight. | The ERNS listings do not appear to have occurred on the site and are therefore not discussed further. The open RWQCB case is discussed in Section 4.4. |
| O.C. Vacuum, Inc. is listed in the HAULER database for "Auto Repair; Hauler (Com Car. Ag, Gov Exempt)". | This listing does not suggest a contamination concern to the site. |
| Multiple entities are listed in the HAZNET and HWTS databases including the following:<br>- Shell Pipeline under USEPA ID CAC002639381 for unspecified solvent mixture in 2009.<br>- CPS Environmental Group under USEPA ID CAR000159806 for unspecified oil-containing waste, Off-specification, aged or surplus inorganics in 2007, Unspecified oil-containing waste, Unspecified organic liquid mixture, Waste oil and mixed oil, Unspecified solvent mixture, and Other organic solids in 2006, and Waste oil and mixed oil, Pesticides and other waste associated with pesticide production, and Unspecified oil-containing waste in 2005.<br>- Chem-Link Petroleum Group under USEPA ID CAX000135913 for contaminated soil from site clean-up in 1991, and Oil/water separation sludge in 1987.<br>- O.C. Vacuum Inc. under USEPA ID CAT080032253 for Other organic solids in 2013, Oil/water separation sludge in 2007, Alkaline solution (pH >= 12.5) with metals and Other organic solids in 2003, and Oil/water separation sludge in 1994.<br>- Pacific Pipeline System LLC under USEPA ID CAD000628420 for 279 listings from 1985 to 2019 for wastes that include Asbestos containing waste, Off-specification, aged or surplus organics, Other inorganic solid waste, Off-specification, aged or surplus organics, Unspecified organic liquid mixture, Other organic solids, | Many of the listings are likely related to operations on the larger West Hynes facility. With the exception of the "contaminated soil from site clean-up", these listings do not suggest a contamination concern to the site. As previously noted, a number of releases have been documented on the ERNS, CHMIRS and SPILLS databases and which were apparently related to the larger West Hynes facility. The releases were reportedly managed and cleaned up by the responsible party. |

**Table 2: Summary of Environmental Database Listings for the Site**

| Summary of Information Contained in Database | Ramboll's Comments |
|---|---|
| Aqueous solution with total organic residues 10 percent or more, Aqueous solution with total organic residues less than 10 percent, Waste oil and mixed oil, Unspecified oil-containing waste, Latex waste, Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc.), Metals Recovery Including Restoring, Smelting, Chemicals, Etc., Tank bottom waste, Laboratory waste chemicals, Unspecified aqueous solution, Other empty containers 30 gallons or more, Liquids with pH <= 2, Polymeric resin waste, Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.), Paint sludge, Liquids with pH <= 2 with metals, Oxygenated solvents (acetone, butanol, ethyl acetate, etc.), Unspecified solvent mixture, Empty containers less than 30 gallons, Liquids with polychlorinated biphenyls >= 50 Mg/L, Polychlorinated biphenyls and material containing PCBs, Contaminated soil from site clean-up, and Aqueous solution (2 < pH < 12.5) containing reactive anions.<br>- K2M Mobile Treatment Srvs under USEPA ID CAL000220521 for Oil/water separation sludge (2005), Alkaline solution without metals pH >= 12.5 (2002), and Waste oil and mixed oil (2001).<br>- CPS Environmental Group DBA Pacific Technical Services under USEPA ID CAR000056630 for Unspecified oil-containing waste in 2004, Other organic solids in 2004, and Unspecified oil-containing waste in 2002. | |
| East/West Hynes Tank Farm is listed in the Hazardous Waste & Substance Site List (HIST CORTESE) database. No additional information is given. | The sites for this 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. |
| ARCO-Four Corners Pipeline Co is listed in the LUST database for a gasoline leak first reported 9/30/1982 with remedial action underway under RWQCB oversight. No additional information is provided. The listing appears to be associated with the open RWQCB case.<br>Four Corners Pipe Line Company, ARCO-Four Corners Pipeline Co, and Four Corners Pipeline Co are listed in the RGA LUST database. No additional information is provided. | The open RWQCB case is discussed in Section 4.4. |

**Table 2: Summary of Environmental Database Listings for the Site**

| Summary of Information Contained in Database | Ramboll's Comments |
|---|---|
| Pacific Pipeline System LLC is listed in the RCRA-LQG database as a large quantity generator for multiple years. No current violations or issues of noncompliance are identified. According to the database, wastes generated on-site include ignitable waste, corrosive waste, barium, lead, mercury, benzene, methyl ethyl ketone, and spent halogenated solvents.<br><br>Coastal Industrial Services is listed in the RCRA-SQG. No current violations or issues of noncompliance are identified. According to the database, wastes generated on-site include ignitable waste, corrosive waste, reactive waste, arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, endrin, trichloroethylene, spent halogenated solvents, spent nonhalogenated solvents, and spent pickle liquor. | The listing does not suggest a contamination concern to the site. Wastes generated at the site are further discussed in Section 3.2.2. |

Notes:

* The site is also listed on the following databases related to regulatory compliance: California Integrated Water Quality System (CIWQS), Enforcement & Compliance History Information (ECHO), Emissions Inventory Data (EMI), Facility Index System/Facility Registration System (FINDS), National Pollutant Discharge Elimination System (NPDES), PCB Activity Database System (PADS), Aerometric Information Retrieval System Facility Subsystem (US AIRS [AFS]), and Waste Discharge System (WDS). Listings on these databases, by themselves, are not necessarily indicative of contamination.

### 4.1.2 Database Review for Adjoining Properties

Based on a review of the environmental database search reports, Ramboll identified the adjoining properties listed in Table 3 on databases indicative of a potential contamination concern.

**Table 3: Contamination-Related Database Listings for Adjoining Properties [1]**

| Listing Name or Address and Location Relative to the Site | Summary of Information Contained in Database | Ramboll's Comments |
|---|---|---|
| Etier D B Mrs / Clothes Pressers and Cleaners<br><br>5901 Cherry Avenue<br><br>(Adjoining to the West) | The 5901 Cherry property is listed on the Historical Drycleaner database, which is an EDR proprietary database that indicates that drycleaning operations may have been performed between 1948 and 1963. There is no indication of a release in the listing. | Based on Ramboll's observations, the adjoining property is a tax preparation business. There is no indication that dry cleaning operations are being conducted at this property. Given the time passed since the potential historical drycleaning operations and its cross-gradient location, Ramboll does not consider this property to be a contamination concern to the site. |

**Table 3: Contamination-Related Database Listings for Adjoining Properties [1]**

| Listing Name or Address and Location Relative to the Site | Summary of Information Contained in Database | Ramboll's Comments |
|---|---|---|
| 5881 Cherry Avenue<br>(Adjoining to the Southwest) | The property is listed in the UST database. No further information is provided. | Based on Ramboll's observations, the adjoining property is a church with no indications of a UST. Given the its cross-gradient location, Ramboll does not consider this property to be a contamination concern to the site. |
| Asphalt Products Oil Co<br>2405 South Street<br>(Adjoining to the Southeast) | The Asphalt Products Oil Co property is listed in the SEMS Archive database as "Not on the NPL" and "NFRAP" (no further remedial action planned) as of 6/1/1986. The property is also listed in the RCRA-SQG and UST databases. | Given the status listed and the downgradient direction, this matter does not appear to represent a significant concern to the site. |

Notes:

[1] Ramboll's analysis of adjoining properties was based on observations made during the site reconnaissance (as discussed in Table 2) and location information for off-site listings as presented in the database report. Also, for purposes of this analysis, Ramboll considers as "adjoining" properties that are adjacent, even if separated by a road or other physical barrier. Ramboll has not included a discussion of compliance-related databases in this table, as Ramboll considers it unlikely that off-site properties listed on compliance-related databases without indication of a release or chemical mishandling represent a potential risk for contamination to the site.

### 4.1.3 Database Review for Other Surrounding Properties

Ramboll has identified several non-adjoining properties that represent a potential contamination concern to the site due to past releases on these properties and possible migration onto the site, as detailed in Table 4.[3]

[3] In its evaluation, Ramboll considered only non-adjoining properties listed on databases indicative of contamination, with open status, located potentially upgradient of the site to represent a potential risk for contamination to the site (as the issuance of regulatory closure suggests that impacts to the site from the noted off-site property are unlikely).

**Table 4: Summary of Environmental Database Listings for Surrounding Sites that Represent a Potential Contamination Concern**

| Listing Name or Address and Location Relative to the Site | Summary of Information Contained in Database | Ramboll's Comments |
|---|---|---|
| Kelleher Equipment Supply / Renzacci of America Inc. / Kelleher Equipment Co. Inc.<br>2121 Curry Street<br>Standard Carpet Works<br>2307 Curry Street<br>(0.21 mile to the north) | The Kelleher Equipment property is listed in the RCRA-SQG, UST, SWEEPS UST, DRYCLEANERS, CA FID UST and several compliance related databases. The property is listed as having used perchloroethylene in its drycleaning equipment. The UST listing is related to a 5,000-gallon tank for dry cleaning equipment installed in 1966.<br>Standard Carpet Works is listed in the HIST CLEANER database from 1957 to 1963. | These properties are considered upgradient from the site; however, based on the 2020 Groundwater Monitoring report for the East Hynes Terminal, the drycleaning solvent PCE and its breakdown products are not reported in wells near these properties nor beneath the site. As such, these properties are not considered a contamination concern to the site. |
| Monsanto Co. Inc. / Bragg Crane Co.<br>6251 N Paramount Blvd<br>(0.34 mile to the north-northeast) | Monsanto is listed in the SEMS-ARCHIVE, RCRA-SQG, CPS-SLIC, CERS, SWEEPS UST, HIST UST, CA FID UST, DRYCLEANERS, ENVIROSTOR, and SWF/LF databases. The status of the case is open – assessment & interim remedial action for impacts to groundwater, soil and soil vapor by arsenic, benzene, diesel, gasoline, and other VOCs. | According to documents available in the GeoTracker database, the responsible party requested closure in 2020 based on the RWQCB's Low Threat Closure Policy (LTCP); however, the RWQCB rejected the request, stating that the LTCP did not apply to this property since the impacts to the subsurface were not solely from a UST. The most recent groundwater monitoring report for the property indicates that while impacts to groundwater extend off-site, they do not appear to extend to the site. Given the extent of impacts and that remediation is being overseen by the RWQCB, Ramboll does not consider this property to be a contamination concern to the site. |
| Coastline Equipment<br>6242 Paramount Blvd<br>0.44 mile to the northeast | Coastline Equipment is listed in the LUST database with a status of open – site assessment for impacts to soil by diesel. | According to documents available in the GeoTracker database, impacts to groundwater are limited to on-site and the source has been removed. A request for site closure under the LTCP was submitted to the RWQCB in September 2019; however, no response was included in the database. Given that impacts to groundwater do not extend off-site from the Coastline Equipment property, Ramboll does not consider it to be a contamination concern to the site. |

The database report indicates that poor or inadequate address information was available for several sites located in the vicinity of the site; therefore, these sites could not be readily mapped by the third-party provider. Because the location of these sites with respect to the site could not be evaluated, Ramboll is limited in its ability to express an opinion regarding the potential for impact to the site from

these sites. It was beyond the scope of this review to accurately locate each of the unmapped sites identified by the third-party provider; however, Ramboll reviewed the list of unmapped sites and verified that none appeared to be adjacent to the site.

## 4.2 Historical Uses of the Site and Adjacent Properties

### 4.2.1 Past Uses of the Site

The area in the vicinity of the site was used for cattle ranching prior to industrial development. In 1928, Richfield acquired the West Hynes Terminal property. The tank farm at the West Hynes facility, to the north of the site, was constructed in 1929 and pipelines were constructed to transport petroleum product between the East and West Hynes facilities. The East and West Hynes facilities were used for gasoline storage and bulk distribution between 1954 and 1977. Both facilities were operated by Four Corners Pipeline Company from 1978 to 1987 and used to store heavy hydrocarbon-based products and to ship petroleum product. Arco Terminal Services acquired the East and West Hynes terminals in 1987. Pacific Pipeline acquired the West Hynes facility in 1998.

In 1953, buildings constructed on the site for Richfield included the main office building, a laboratory, carport, garage, change building, storehouse, pump shop, shop, store rack, wash rack, and tool building & platform. The carport is not a part of the site. The pump shop was labeled as a machine shop in a 1983 drawing of the site and is the current telecommunications shop and fitness center. The laboratory is now used for file storage. The use of the site has remained similar throughout the history of the site.

A summary of Ramboll's key observations from the available historical sources is presented in Table 5.

**Table 5: Summary of Key Observations from Historical Sources for the Site**

| Historical Source | Key Observations Regarding Site History |
|---|---|
| Aerial Photographs<br>(1928, 1938, 1947, 1954, 1963, 1972, 1977, 1983 1989, 2002, 2005, 2009, 2012, and 2016)<br>Satellite Imagery [1]<br>(1928 to 2016) | The site appears as undeveloped land with an apparent road coming from Cherry Avenue and paving in the western area in the 1928 photograph. There is a paved area with a structure in the southern central area of the site and a soil disturbance near the eastern boundary on all photographs until 1954. The 1954 photograph shows the first major development activity on the site with one large office building in the western portion off Cherry Avenue with parking around it, one building in the northwestern area, six large warehouse buildings in the central portion, one out building in the north central area, and a shop yard in the eastern half of the site. In 1954, it appears the northeast area remains unpaved. The 1963 photograph shows a wing added to the main office building near the western site boundary and an additional building built just off-site to the north. The 1983 photograph shows two additional structures in the southeast parking lot in the near the office building, which disappear in the 1989 photograph, and the northeast area appears to be paved. Between 1989 and 2002, the building to the north of the office building disappears and a new structure appears in the northeast portion of the site.<br>The 2002 and subsequent photographs show the site in its present configuration, with one large office building and surrounding parking lots, six warehouse buildings, two outbuildings, and a shop yard present. No concerns are noted. |

**Table 5: Summary of Key Observations from Historical Sources for the Site**

| Historical Source | Key Observations Regarding Site History |
|---|---|
| Topographic Maps (1896 to 2012) | No development is depicted on the maps until 1925. The maps from the 1940s show several large tanks on the site; however, the aerial photographs from this time frame are clear that no tanks were present on the site. The tanks that are shown on the 1940s maps appear to be the tanks that are present on the portion of the West Hynes facility to the north of the site. The 1964 map depicts the site with several structures in the western half of the site. In 1972, an additional building is shown in the northwestern area of the site. No concerns are noted. |
| City Directory Abstracts (1954, 1957, 1960, 1963, 1969, 1970, 1975, 1980, 1981, 1985, 1991, 1994, 1995, 1999, 2004, 2006, 2009, 2015) | The occupants of the site are listed as: Richfield Oil Corporation (1950s and early 1960s), Atlantic Richfield Company (1969 and 1970), ARCO (1975, 1980, 1981, 1991, 1994, 1995, 1999, and 2015), Four Corners Pipeline Company (1980, 1985, 1991, 1994, 1995, and 1999), Illig Construction Company (1980), TBE Group Inc (2004 and 2006), PPS Holding Company (2004), BP Hathaway Terminal (2004), APL Shiprock (2004), Building ARCD (2006), CPS Environment (2006), Rivera (2006), K2M Mobile Treatment Service Inc (2004, 2006, and 2015), OC Vacuum Inc (2004, 2009, and 2015) Pacific Energy (2004, 2006, and 2015), Lindmark Engineering (2004, 2006 and 2015). |
| 2020 Environmental Conditions report | According to the 2020 Environmental Conditions report, the site and surrounding area were originally part of a Spanish land grant in the 1800s and were operated as a cattle ranch prior to industrial development. In the early 1900s, several refineries were constructed in the vicinity of the site and in 1923 Richfield Oil Company (Richfield) acquired the East Hynes Terminal property. In 1928, Richfield acquired the West Hynes Terminal property. The tank farm at the West Hynes facility, to the north of the site, was constructed in 1929 and pipelines were constructed to transport petroleum product between the East and West Hynes facilities. The East and West Hynes facilities were used for gasoline storage and bulk distribution between 1954 and 1977. Both facilities were operated by Four Corners Pipeline Company from 1978 to 1987 and used to store heavy hydrocarbon-based products and to ship petroleum product. Arco Terminal Services acquired the East and West Hynes terminals in 1987. Pacific Pipeline acquired the West Hynes facility in 1998. |
| Los Angeles County Assessor's Portal | According to the Assessor's website, the site comprises all of APN 7119-018-024 and a portion of APN 7119-018-028. Records available online indicate an ownership change in 2002 and 2006. Five buildings are listed as having been built in 1953 and 1954. |
| Lien search report | The lien search report indicates that Pacific Pipeline acquired the site in 1999 from ARCO Pipeline Company. No liens or activity and use limitations (AULs) are associated with the site. |
| Long Beach Fire Department | See Table 6. |
| Long Beach Building Department | The Building Department files include a 1953 permit for Richfield for several buildings including an office, laboratory, carport, garage, change building, storehouse, pump shop, shop, store rack, wash rack, and tool building & platform. These buildings were shown on a map in the same approximate configuration as the buildings that currently exist on the site. The laboratory is now used for file storage. |

**Table 5: Summary of Key Observations from Historical Sources for the Site**

| Historical Source | Key Observations Regarding Site History |
|---|---|
| Database Search Report | The CERS database indicates that the following other entities have operated at the site address: Pacific Technical Services. |

Notes:

[1] In addition to aerial photographs provided by the third-party provider, Ramboll viewed historical satellite imagery provided via Google Earth. Printed copies were not obtained, and imagery dates were not independently verified.

The third party provider reported that Sanborn fire insurance map coverage is not available for the site.

### 4.2.2 Past Uses of Adjacent Properties

Cherry Avenue is depicted to the west and a railroad track is depicted directly east of the site in the 1896 topographic map. Except for a few residential type buildings, the area around the site appears largely undeveloped prior to the 1925, when various petroleum refinery businesses are shown around the site and apparent residential and commercial development are depicted to the west. The 1928 photograph shows the East Hynes facility to the east and northeast of the site, undeveloped land to the north and south, and residential and commercial development to the west opposite Cherry Avenue. The 1938 photograph shows the development of the West Hynes tank farm to the north. The 1942 map shows the construction of several tanks surrounding the site and increased development to the west. The maps from 1942 to 1964 follow this trend of increased development around the site. Between 1963 and 1972, there appears to be major development in the surrounding area of the site with a commercial development on the property to the south. The 2002 photograph also shows the removal of a commercial building to the south. The 2005 photograph shows commercial development of an apparent storage facility in place of the former building to the south. The 2009 photograph shows the construction of two additional tanks on the West Hynes Tank Farm to the north.

## 4.3 Review of Local and State Agency Information

Ramboll visited or otherwise contacted local governmental agencies and regulatory bodies for information relating to the site. An overview of the findings of this review is presented in Table 6.

**Table 6: Local Agency Information for the Site**

| Agency Contacted/ Document Reviewed | Information Obtained |
|---|---|
| Los Angeles County Assessor's Portal | The site is described on the Assessor's Portal as California Cooperative Colony Tract *W 570 FT (EX OF ST) LOTS 13 AND 14 BLK 27 and CALIFORNIA COOPERATIVE COLONY TR E 720 FT EX OF R/W LOTS 13 AND 14 BLK 27. |
| Lien and Activity and Use Limitation (AUL) Search Report | According to a lien and activity and use limitation (AULs) search report provided by EDR, there are no liens or AULs associated with the site. |

**Table 6: Local Agency Information for the Site**

| Agency Contacted/ Document Reviewed | Information Obtained |
|---|---|
| Long Beach Building Department | The Building Department files include a 1953 permit for Richfield for several buildings including an office, lab, carport, garage, change building, storehouse, pump shop, shop, store rack, wash rack, and tool building & platform. These buildings were shown on a map in the same approximate configuration as the buildings that currently exist on the site. The lab is now used for file storage. Other permits in the file include the following:<br>- A permit for a microwave tower dated 1956.<br>- Permits for various air conditioning systems.<br>- Interior improvements (various dates).<br>- A permit for a radio relay tower dated 1980.<br>- Permits for temporary trailers.<br>- A permit to convert a storage room to a diesel generator storage room dated 1983.<br>- A permit for a 100-square-foot storage shed dated 1992.<br>- A permit for a new Gauger Lab and 1,008 square feet of shell space for future office and bathroom.<br>- A permit for a pre-fabricated office with deck and handicap ramp dated 1996. |
| Long Beach Fire Department | Fire department records include routine inspection reports of O.C. Vacuum dated 5/17/2019, 6/25/2012, 2/27/2008. Notices of violation included failure to obtain, maintain, and/or properly display a valid Operating Fire Permit for Garages Motor Vehicle Repair and failure to complete and/or submit hazardous material inventory forms for all reportable hazardous materials on-site. Pacific Pipeline routine inspection reports included in the file were dated 4/18/2019, 4/15/2015, and 8/21/2012. The 2019 inspection noted that compressed gas cylinders were not being properly secured. In addition, the 2012 inspection required that Pacific Pipeline provide a current copy of the CUPA permit and signed training records for all employees that handle hazardous material/hazardous waste. |
| Long Beach Environmental Health Department | Ramboll requested records from the Long Beach Environmental Health Department (LBEHD) for utilization, manufacture, storage and/or discharge of hazardous materials/waste, and any information concerning previous or on-going site investigations/remediations pertaining to hazardous materials/waste for the site. As of the date of this report, a response had not been received from the LBEHD. |

## 4.4 Previous Environmental Assessments and Activities

Based on a review of historical site documents and interviews with facility personnel, prior environmental assessment, sampling, and remediation activities have been conducted at the site, as summarized below. Pertinent historical and site-related information contained in the prior reports has been incorporated into other sections of this report.

- **Ongoing Groundwater Remediation Activities (1982 – Present).** According to documents reviewed on GeoTracker and documents provided by the client, the site is involved in ongoing groundwater monitoring and remediation activities related to the East Hynes facility. The East Hynes facility is owned and operated by Tesoro, which retains responsibility for the cleanup of

groundwater impacts that extend from its property to the site. The West and East Hynes facility cleanups are under the oversight of the RWQCB. According to GeoTracker, there is an open case for the West Hynes property; however, the case is listed as inactive and is reported to be associated with the migration of impacted groundwater from the adjacent East Hynes property. The case for the East Hynes property is listed as open and active. In 1986, the RWQCB issued CAO No. 86-10 to Four Corners Pipeline Company, which required subsurface investigation and site assessments to characterize soil and groundwater conditions beneath the two properties and beyond. In August 1995, the RWQCB issued CAO No. 95-107 to Atlantic Richfield Company, which superseded CAO No. 86-10. The requirements of CAO No. 95-107 include:

- Develop an optimization plan for the current free-product recovery system using existing operational and hydrogeologic information;
- Develop analytical and numerical groundwater models to characterize movement of free product and dissolved components beneath the East and West Hynes facility; and
- Develop and implement a remedial action plan (RAP) to remove free phase hydrocarbons. After free phase hydrocarbon is removed to the extent deemed practicable, evaluate whether further cleanup and abatement at the site is required.

Impacts to soil and groundwater from petroleum hydrocarbons were first reported in 1982 at the East Hynes property. Groundwater impacts include light non-aqueous phase liquid (LNAPL) (i.e. undissolved petroleum products that are found floating on top of the groundwater) and dissolved phase petroleum hydrocarbons including TPH (gasoline-range organics [GRO]), BTEX, MTBE, and TBA, among others. According to the 1993 Site Characterization report, a model-based estimate of total volume of free product in the entire study area (West and East Hynes properties) was approximately 68,200 barrels. From 1987 to the present various types of LNAPL recovery have been utilized at both the West and East Hynes properties by using wells, skimmers, and pumps as well as vacuum trucks. According to the 2021 Third Quarter LNAPL Recovery report, approximately 11,727 barrels of LNAPL have been recovered from beneath the West and East Hynes properties. Currently, LNAPL is recovered from 31 wells on the West and East Hynes properties. There are 13 LNAPL recovery wells on the greater West Hynes property, and 8 of those are on the site (Figure 3). LNAPL is recovered from on-site wells on a bi-weekly, monthly, and quarterly basis (depending on the well).

Tesoro submitted the LNAPL Remedy Pilot Study Report to the RWQCB in October 2021, which documented four pilot tests for LNAPL remediation (skimming, dual pump liquid extraction, air sparging during vacuum truck recovery, and biosparging. Based on the results of the pilot testing, AECOM recommended biosparging as the LNAPL remedial technology at the site to enhance the current mobile recovery program. In mid-2021, 26 biosparging wells were installed along the southern boundary of the site at 17 locations (nine are co-located pairs installed at different depths, see Figure 2). These wells will be used for a future biosparging system that is planned for the site. Ramboll is not aware of any other current on-site remediation activities.

Groundwater beneath the site from the Semi-Perched and Gaspur aquifers is monitored on a semi-annual basis. According to the 2020 Groundwater Monitoring report[4], the thickness of LNAPL beneath the site ranges from approximately 0.01 feet to 10.68 feet along the eastern and southern site boundary. In 2020, benzene was detected at concentrations up to 16,000 µg/l in the Semi-Perched aquifer beneath the north-central portion of the site (see Figure 3). The benzene

[4] The 2021 Groundwater Monitoring report is not yet available on GeoTracker.

plume in the Semi-Perched aquifer covers the eastern half of the site; however, benzene is not reported in the deeper Gaspur aquifer wells at the site. Other petroleum related compounds detected in wells beneath the site include TPH-GRO (Semi-Perched and Gaspur aquifers), MTBE (Semi-Perched aquifer) and TBA (Semi-Perched and Gaspur aquifers). The RWQCB required that Tesoro submit a work plan to investigate the vertical extent of impacts on-site and off-site in aquifers below the Gaspur aquifer. In July 2021, Tesoro submitted the 2021 Deep Groundwater Investigation Work Plan, which includes three proposed exploratory borings/Gage Aquifer groundwater monitoring wells. One of the wells is proposed to be located at the site, to the east of the current electrical shop/offices (see Figure 2).

In response to RWQCB Order WQ 2021-0006-DWQ for the Determination of the Presence of Per- and Polyfluoroalkyl Substances at Arco (Tesoro) East Hynes Terminal, Tesoro submitted a work plan to the RWQCB on August 31, 2021 for a one-time preliminary site investigation at the Hynes facility. The work plan was designed to take advantage of the existing network of monitoring wells. A total of 19 sampling locations were proposed; none of which are on the site.

The potential for vapor intrusion at the site was not assessed as part of the prior sampling activities. In its 2020 Investigation Report Comments, the RWQCB required that Tesoro provide a work plan to investigate on-site and off-site soil vapor impacts to determine the lateral and vertical extent of gasoline range and diesel range TPH, and VOCs in the soil vapor. Tesoro requested an extension for this work plan in November 2020. This matter is further discussed in Section 6 below.

## 4.5 User-Provided Information

Ramboll provided Link with a User Questionnaire (consistent with Appendix X3 of the ASTM Standard) that requested information relating to environmental liens, activity use limitations (AULs), specialized knowledge of the property, property value diminution, chain-of-title, or any other commonly known or obvious indications of site contamination, that was not otherwise provided to Ramboll. The user did not provide any information that was not otherwise obtained and reviewed by Ramboll.

# 5. SITE RECONNAISSANCE

## 5.1 Methodology and Limiting Conditions

Ramboll conducted a visit to the site on January 27, 2021 and January 11, 2022. During the site visit, observations of both the interior of the buildings and exterior portions of the site were made to evaluate if any RECs, as defined in Chapter 7, are present. Ramboll did not observe the roof of the buildings.

## 5.2 General Site Setting and Observations

Ramboll made observations concerning all of the interior and exterior issues specified in Sections 9.4.2 through 9.4.4 of the ASTM E1527-13 Standard. The presence or absence of each issue of environmental interest or concern is noted in Table 6. Additional information regarding observed and historical items is provided in the sections following the table.

**Table 6: Summary of Site Reconnaissance Observations**

| ASTM Section | Issue | Observation |
|---|---|---|
| **Interior and Exterior Issues** | | |
| 9.4.2.1 | Current use(s) of the property | See Section 3.2 |
| 9.4.2.2 | Past use(s) of the property | See Section 4.2 |
| 9.4.2.3 | Hazardous substances and petroleum products used, treated, stored, disposed of, or generated on the property in connection with identified present or past uses | **Present** (see Section 5.2.1) |
| 9.4.2.4 | Storage tanks:<br>Underground storage tanks (fill ports, vent pipes, manholes)<br>Aboveground storage tanks | <br>Absent (see Section 5.2.2)<br>**Present** (see Section 5.2.3) |
| 9.4.2.5 | Odors (strong, pungent or noxious) | Absent |
| 9.4.2.6 | Pools of liquid, standing surface water or sumps | **Present** (see Section 3.2.3) |
| 9.4.2.7 | Drums of hazardous substances or petroleum products (five-gallon, 55-gallon or totes) | **Present** (see Section 5.2.1) |
| 9.4.2.8 | Hazardous substance and petroleum product containers (not necessarily in connection with identified uses) | Absent |
| 9.4.2.9 | Unidentified substance containers suspected of containing hazardous substances or petroleum products | Absent |

**Table 6: Summary of Site Reconnaissance Observations**

| ASTM Section | Issue | Observation |
|---|---|---|
| 9.4.2.10 | Polychlorinated biphenyls (PCBs)<br>Electrical equipment on-site (e.g., transformers, capacitors)<br>Electrical equipment known or likely to contain PCBs<br>Hydraulic equipment on-site (e.g., elevators, truck dock lifts)<br>Hydraulic equipment known or likely to contain PCBs | (see Section 5.2.4)<br>**Present**<br>Possible<br>**Present**<br>Possible |
| **Interior Issues** | | |
| 9.4.3.1 | Heating/cooling systems | **Present** (see Table 1) |
| 9.4.3.2 | Stains or corrosion on interior floors, walls or ceilings (except for staining from water) | **Present** (see Section 5.2.5) |
| 9.4.3.3 | Floor drains and interior sumps | Absent |
| **Exterior Issues** | | |
| 9.4.4.1 | Pits, ponds or lagoons on property or adjacent sites | Absent |
| 9.4.4.2 | Stained soil or pavement | Absent |
| 9.4.4.3 | Stressed vegetation (from other than insufficient water) | Absent |
| 9.4.4.4 | On-site solid waste disposal; areas apparently filled or graded by non-natural causes; or mounds or depressions suggesting solid waste disposal | Absent |
| 9.4.4.5 | Wastewater or other liquid (including storm water) or any discharge into a drain, ditch, underground injection system or stream on or adjacent to the property | **Present** (see Section 3.2.3) |
| 9.4.4.6 | Wells (including dry wells, irrigation wells, injection wells, abandoned wells, or other wells) | **Present** (see Section 5.2.6) |
| 9.4.4.7 | Septic systems or cesspools | Absent |
| **Non-Scope Considerations** | | |
| N/A | Asbestos Containing Materials | (see Section 5.2.7) |
| N/A | Lead-Based Paint | (see Section 5.2.8) |
| N/A | Water Intrusion | (see Section 5.2.9) |

**Table 6: Summary of Site Reconnaissance Observations**

| ASTM Section | Issue | Observation |
|---|---|---|
| N/A | Radon | (see Section 5.2.10) |

Notes:

Observations noted in this table and discussed further below are based on information obtained during the site visit and from a review of the sources summarized in Section 4.

See the ASTM Standard for a detailed description of the issues included in each referenced ASTM section.

Per the ASTM Standard, fluorescent light ballasts likely to contain PCBs are not considered.

N/A – Not applicable.

### 5.2.1 Hazardous Substances and Petroleum Products

The primary chemicals used at the site include aerosols, paints, cleaning solutions. Previously, compressed gases (nitrogen acetylene), motor oil and lubricants (55-gallon drums) were stored, mainly in the Garage Building but also in several other locations. Ramboll did not observe motor oil or compressed gases stored at the site during the January 2022 site visit.

The following describes the hazardous substances stored in more detail:

- During 2021 site visit, the following hazardous substances were observed:
  - Compressed gas cylinders including nitrogen and acetylene were stored in the Garage Building, which was occupied by O.C. Vacuum at the time.
  - Motor oil, hydraulic oil, and other petroleum products were stored on a shelving rack in 5-gallon pails in the Garage Building. No spill containment was observed for the pails.
  - A 55-gallon drum hand labeled "parts cleaner" was located on secondary containment pallet in the Garage Building.
  - Several approximately 200- to 250-gallon ASTs used to store motor oil, hydraulic oil, and used oil were stored in the Garage Building. These ASTs were labeled as double-walled.
  - One 55-gallon drum of aqueous film forming foam (AFFF) was observed in the storage yard area adjacent and connected to a fire hydrant. Facility personnel reported that drums of AFFF are periodically stored in various locations at the site; however, AFFF has not been used on-site.
  - None of the above hazardous substances were observed during the 2022 site visit.
- During the 2022 site visit, the following hazardous substances were observed:
  - Several approximately 3-gallon containers of CRW132 Corrosion Inhibitor were observed being stored on the concrete floor of the Marine Warehouse.
  - Hazardous waste is containerized and stored in a fenced and bermed concrete storage area on the eastern side of the West Hynes facility. Waste observed included three plastic-lined cardboard containers with used PPE and oily rags, an empty drum that formerly contained AFFF, a drum containing empty aerosol canisters, and a waste drum containing AFFF.

- Regular trash is collected in several dumpsters and recyclable materials are collected in plastic trash bins located throughout the facility.

Facility personnel knew of no significant spills or releases of materials at drum and container storage areas. Ramboll did not observe evidence of major spills or uncontrolled releases from these storage areas, other than minor staining in some interior (i.e., garage area) and paved parking areas. Staining did not appear to extend to any floor drains, storm water drains, or unpaved surfaces.

On a 1953 facility plan provide by facility personnel, the building currently used as a fitness center and telecommunications shop was labeled as a machine shop.

### 5.2.2 Underground Storage Tanks

Facility personnel reported that no USTs are known to be present on site. West Hynes is listed in the CA FID UST and HIST UST databases as having two 10,000 gallons USTs containing diesel and unleaded fuel. The locations of these USTs are not known to be located on the site and no further information was found regarding these USTs.

### 5.2.3 Aboveground Storage Tanks

A 200-gallon steel diesel fuel aboveground storage tank (AST) is located inside the southern portion of the Garage Building (Figure 2). No secondary containment is provided for this tank. Facility personnel reported that there are no current or former underground transfer lines used to convey the materials from the tank and that the generator that is associated with the AST is no longer used. Handwritten labeling on the AST indicates it may have been last used in approximately 1996 and it is not known if the AST contains any fuel at this time. Facility personnel knew of no leaks or spills relating to the AST, and Ramboll did not observe evidence of staining or past releases at the time of the site visit.

As described above, several approximately 200- to 250-gallon ASTs used to store motor oil, hydraulic oil, and used oil were stored in the Garage Building during the 2021 site visit. These ASTs are labeled as double-walled. The ASTs were not present during the 2022 site visit. In addition, an approximately 2,000-gallon discharge tank is positioned to the adjacent south of the wash rack. Wastewater from the wash rack drains to a two-stage clarifier and from there, the contents are pumped into the discharge tank for further clarification before discharging to the sanitary sewer.

### 5.2.4 Polychlorinated Biphenyls (PCBs)

Facility personnel knew of no on-site equipment that is known to contain PCBs. One pad-mounted transformer is present on the site, adjacent to the Office Building. The unit is not labeled as to its PCB content. Ramboll saw no indication of major leaks or releases from electrical equipment observed during the site visit. Several dry type transformers were also located at the site.

Because the unit was likely installed before the 1979 federal ban on the manufacture of PCBs, it is possible that the transformer oils contain PCBs.

Because the buildings were constructed prior to the 1979 federal ban on the manufacture of PCBs, it is possible that hydraulic oils, or other types of electrical equipment, such as capacitors, contain PCBs.

Ramboll observed no indication of leaks or releases from electrical equipment during the site visit.

### 5.2.5 Stains on Interior Floors and Stained Pavement

Ramboll observed minor floor staining on the concrete flooring of the Garage Building near a compressor and in the garage bays and on the flooring of the Electrical Shop. This staining did not appear to be indicative of widespread releases or losses. Concrete floors in the vicinity of the staining appeared to be in good condition, with no evidence of major cracking.

Ramboll observed evidence of minor pavement staining in the paved parking areas around the buildings, which is likely a result from minor drips from employee vehicles parked in these areas. In addition, Ramboll observed minor pavement staining in the wash rack area; the staining appeared to be consistent with minor drips or spillage from the wash rack operations. Pavement in the vicinity of the observed staining appeared to be in fair condition, with no major evidence of cracking.

### 5.2.6 Wells

There are 48 wells on-site (monitoring wells, LNAPL recovery wells, and biosparging wells) that are owned by Tesoro and associated with the East Hynes impacts to groundwater (Figure 2). In addition, there are four inactive soil vapor extraction wells.

### 5.2.7 Asbestos Containing Materials (ACMs)

An asbestos inspection and sampling of suspect building materials in conformance with established protocols (as outlined in 40 CFR §763), applicable state or local regulations, or industry standards, were beyond our scope of work. OSHA's definition of presumed asbestos containing materials (PACMs) is limited to thermal system insulation (TSI) and surfacing materials present in buildings constructed before 1981. Vinyl floor tiles are not considered PACM, but OSHA nonetheless requires that asphalt and vinyl floor tiles present in buildings constructed before 1981 be treated similarly to PACM. The term suspect ACM is not defined by OSHA but can include numerous building materials manufactured using asbestos currently or in the past (e.g., ceiling tiles, roofing materials, joint compound), as well as TSI, surfacing materials, and flooring materials installed after 1981.

A comprehensive asbestos survey has not been conducted at the facility; however, a limited survey was conducted by Stantec in 2020. Samples were collected from the "D" and "E" Wings of the administrative office building, the Marine Warehouse, and the empty prefabricated Office Building in the northeast portion of the site. A total of 181 bulk samples were collected from 43 homogeneous areas at the site. Of those, ACM was identified in seven samples black adhesive associated with carpet tile found throughout the "D" wing.

Because the buildings at the site were constructed prior to 1981 and a comprehensive asbestos survey has not been conducted, TSI, surfacing materials and vinyl/asphalt flooring must be treated as PACMs. Also, based on the building age, the roofing materials may be considered suspect ACM.

According to facility personnel, some piping stored in the storage yard is asbestos containing.

There are no regulatory requirements to remove PACM, suspect ACM and known ACM or to confirm whether building materials contain asbestos, unless the materials are damaged and have the potential to release fibers or the materials have the potential to be disturbed during renovation or demolition activities. OSHA requires building owners and employers to identify locations of PACM and confirmed ACM at the facility and comply with certain employee notification, training, labeling and recordkeeping requirements (29 CFR §1910.1001(j)) and housekeeping programs (1910.1001(k)). Prior to any renovation or demolition of the buildings at the site, a demolition-level asbestos survey needs to be conducted at the site.

### 5.2.8 Lead-Based Paint

Lead was a major ingredient in paint pigment prior to and through the 1940s. While other pigments were used in the 1950s, the use of lead in paint continued until the early 1970s. In 1978, the Consumer Products Safety Commission banned paint and other surfacing coating materials that are "lead-containing paint." Based on the construction date of the buildings at the site in the 1950s, it is possible that lead-based paint (LBP) was used historically on facility structures. Ramboll observed the paint to be generally in good condition with the exception of the interior of the garage, where peeling

paint was noted. Stantec conducted a limited LBP survey in 2020 during which three bulk paint-chip samples were collected. No LBP was identified (LBP is defined as containing greater than or equal to 0.5 percent lead); however, lead-containing paint above the laboratory reporting limit was identified in one of the three samples.

### 5.2.9 Water Intrusion

Ramboll did not perform a mold survey at the site; however, facility personnel provided information regarding past water intrusion events. According to facility personnel, the site has not experience significant water intrusion events.

### 5.2.10 Radon

Based on information included in the environmental database report, the site is located in an area categorized as Zone 2, which has average indoor basement radon levels between 2 and 4 picoCuries per liter (pCi/L). The United States Environmental Protection Agency's (USEPA's) continuous exposure limit, which is the limit at which further testing or remedial action is suggested, is 4.0 pCi/L. This USEPA continuous exposure limit applies to residential, not commercial, properties. According to the California Radon database, of 11 radon test results in the same zip code as the site, none were greater than 4 pCi/L. The median first floor radon value for 63 sites surveyed in Los Angeles County was 0.711 pCi/L.

# 6. FINDINGS, OPINION, AND CONCLUSIONS

Ramboll performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the 5900 Cherry Ave Industrial Redevelopment located at 5900 Cherry Avenue in Long Beach, California in January 2022. The objective of the ESA was to identify RECs, as defined in the ASTM Standard. A list of key definitions presented in the ASTM Standard is provided in Chapter 7 at the end of this report. Any exceptions to, or deletions from, this practice are described in Section 6.2.

## 6.1 Findings, Opinions, and Conclusions

### 6.1.1 Recognized Environmental Conditions

Ramboll has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the 5900 Cherry Ave Industrial Redevelopment located at 5900 Cherry Avenue, Long Beach, California. Any exceptions to, or deletions from, this practice are described in Section 6.2 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property, except for the following.

- **On-Site Groundwater Contamination.** There is known groundwater contamination by TPH and VOCs at the site. According to documents reviewed, the site is involved in ongoing groundwater monitoring and remediation activities related to the East Hynes facility, which is located adjacent to the east of the site. The East Hynes facility is owned and operated by Tesoro, which retains responsibility for the cleanup of groundwater impacts that extend from its property to the site. The East and West Hynes facility cleanups are under the oversight of the Los Angeles RWQCB.

  Impacts to soil and groundwater from petroleum hydrocarbons were first reported in 1982 at the East Hynes facility. Groundwater impacts include LNAPL (i.e. undissolved petroleum products that float on top of the groundwater) and dissolved phase petroleum hydrocarbons including TPH GRO, BTEX, MTBE, and TBA, among others. From 1987 to the present various types of LNAPL recovery have been utilized at both the West and East Hynes facilities by using wells, skimmers, and pumps as well as vacuum trucks. To date, approximately 11,727 barrels of LNAPL have been recovered from beneath the West and East Hynes facilities using primarily vacuum truck extraction. Groundwater beneath the site from the Semi-Perched and Gaspur aquifers is monitored on a semi-annual basis. LNAPL is recovered from on-site wells on a bi-weekly, monthly, and quarterly basis (depending on the well).

  Tesoro submitted the LNAPL Remedy Pilot Study Report to the RWQCB in October 2021, which documented four pilot tests for LNAPL remediation (skimming, dual pump liquid extraction, air sparging during vacuum truck recovery, and biosparging). Based on the results of the pilot testing, AECOM recommended biosparging as the LNAPL remedial technology at the site to enhance the current mobile recovery program. In mid-2021, 26 biosparging wells were installed along the southern boundary of the site at 17 locations (nine are co-located pairs installed at different depths). These wells will be used for a future biosparging system that is planned for the site. Ramboll is not aware of any other current on-site remediation activities.

  The subsurface investigation reports reviewed by Ramboll did not evaluate whether the presence of this contamination poses a vapor intrusion concern to the current or future building occupants at the site. Based on Ramboll's review of the available data, concentrations of certain VOCs (particularly benzene) in groundwater located beneath the eastern portion of the site exceed California vapor intrusion screening criteria, indicating a potential vapor intrusion concern. According to the most recent groundwater monitoring report, the highest concentration of benzene

beneath the site was 16,000 µg/l in the Semi-Perched aquifer (approximately 21 to 33 feet bgs) in the north-central portion of the site. This concentration exceeds the risk-based screening level[5] for commercial/industrial sites of 1.8 µg/l. Ramboll is not aware of any soil vapor samples having been collected from beneath the site.

### 6.1.2 Other Findings

In addition to the REC discussed above, the following additional findings related to potential contamination concerns were identified:

- **Past Industrial Operations at the Site.** Since the 1950s, the site has been used for various industrial purposes, including auto and truck maintenance, and a machine shop. These former industrial operations have included the use of hydraulic lifts in the garage, a wash rack, petroleum products and potentially solvents and other chemicals. No subsurface characterization activities are known to have been conducted at the site in relation to these operations. Because Ramboll's review did not identify documentation of a release, a suspected release, or a potentially material threat of a release of a hazardous substance or petroleum product related to this matter, it is not considered a REC; however, absent further information regarding the specific nature of historical chemical use, chemical handling practices, and associated wastes, Ramboll cannot rule out the possibility that inadvertent spills or releases of chemicals or petroleum products may have occurred in the past. There is no current regulatory scrutiny related to contamination matters at the site; however, during site redevelopment, it is possible there will be areas where impacted soil is encountered that will require characterization, excavation, and special handling and disposal at licensed facility.
- **Subsurface Features.** According to documents provided by the client, two 12-inch abandoned pipelines cross the northern portion of the site. Ramboll is not aware of other construction details of the pipelines or the abandonment method. West Hynes is listed on several databases as having two 10,000-gallon underground storage tanks (USTs) for unleaded and diesel; however, no additional information is provided regarding the specific locations of the USTs and they may not be located on the site. Facility personnel are not aware of any USTs at the site and no other agency records indicate that there are USTs beneath the site. In addition, there are two hydraulic lifts in the Garage Building as well as a clarifier and two sumps associated with the wash rack. None of these subsurface features are known to have been investigated during previous subsurface investigation activities at the site.

  Because Ramboll's review did not identify documentation of a release, a suspected release, or a potentially material threat of a release of a hazardous substance or petroleum product related to this matter, it is not considered a REC. There is no apparent current regulatory requirement to evaluate these areas, nor is there scrutiny of the site by regulatory officials.

### 6.1.3 *De Minimis* Conditions

*De minimis* conditions are those that do not represent a material risk of harm to public health or the environment and that generally would not be the subject of enforcement action if brought to the attention of appropriate governmental agencies. Ramboll identified the following *de minimis* conditions related to the site:

- **Pavement and Floor Staining.** Ramboll observed multiple areas of exterior pavement and interior flooring where oil stains were apparent including an area of approximately nine square feet in the area of the compressor in the Garage Building. The stains were limited in areal extent,

[5] 2019. San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels.

the underlying pavement/flooring appeared to be intact, and no stains appeared to reach floor drains or storm water drains. As such, Ramboll considers this matter to represent a *de minimis* condition.

### 6.1.4 Non-Scope Considerations

Ramboll identified the following findings that relate to non-scope considerations (as discussed in Section 2.2), as detailed below:

- **Asbestos-Containing Materials (ACMs).** Given the date of construction of the buildings at the site, it is possible that ACM are present in building materials. A comprehensive asbestos survey has not been conducted at the facility; however, a limited survey was conducted by Stantec in 2020. Samples were collected from the "D" and "E" Wings of the administrative office building, the Marine Warehouse, and the empty prefabricated Office Building in the northeast portion of the site. A total of 181 bulk samples were collected from 43 homogeneous areas at the site. Of those, ACM was identified in seven samples black adhesive associated with carpet tile found throughout the "D" wing.
- **Water Intrusion/Mold.** Ramboll did not perform a mold survey at the site; however, facility personnel provided information regarding past water intrusion events. According to facility personnel, the site has not experience significant water intrusion events.
- **Lead.** Lead was a major ingredient in paint pigment prior to and through the 1940s. While other pigments were used in the 1950s, the use of lead in paint continued until the early 1970s. In 1978, the Consumer Products Safety Commission banned paint and other surfacing coating materials that are "lead-containing paint." Based on the construction date of the buildings at the site in the 1950s, it is possible that lead-based paint (LBP) was used historically on facility structures. Ramboll observed the paint to be generally in good condition with the exception of the interior of the garage, where peeling paint was noted. Stantec conducted a limited LBP survey in 2020 during which three bulk paint-chip samples were collected. No LBP was identified (LBP is defined as containing greater than or equal to 0.5 percent lead); however, lead-containing paint above the laboratory reporting limit was identified in one of the three samples.
- **Radon.** Based on information included in the environmental database report, the site is located in an area categorized as Zone 2, which has average indoor basement radon levels between 2 and 4 picoCuries per liter (pCi/L). The United States Environmental Protection Agency's (USEPA's) continuous exposure limit, which is the limit at which further testing or remedial action is suggested, is 4.0 pCi/L. This USEPA continuous exposure limit applies to residential, not commercial, properties. According to the California Radon database, of 11 radon test results in the same zip code as the site, none were greater than 4 pCi/L. The median first floor radon value for 63 sites surveyed in Los Angeles County was 0.711 pCi/L.

## 6.2 Analysis of Data Gaps

The ASTM Standard defines a data gap as "a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information." A data gap is only significant if other information obtained during the ESA, or professional experience, raises reasonable concerns and affects the ability of the environmental professional to identify whether a given issue is a REC. The ASTM Standard requires that the ESA report identify and comment on significant data gaps.

Limiting conditions and deviations to the ASTM Standard for the assessment are discussed below.

- During the site visit, Ramboll did not observe the roof of the buildings due to access and safety constraints.
- Ramboll has requested site-related information, but not yet received a response, from LBEHD.

None of the exceptions, deletions, deviations, or site reconnaissance limitations noted above are considered to represent significant data gaps.

# 7. ASTM DEFINITIONS

The following definitions are presented in the ASTM Standard:

**REC - Recognized Environmental Condition:**

The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment.

**CREC - Controlled Recognized Environmental Condition:**

A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

**HREC - Historical Recognized Environmental Condition:**

A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.

***De minimis* Condition:**

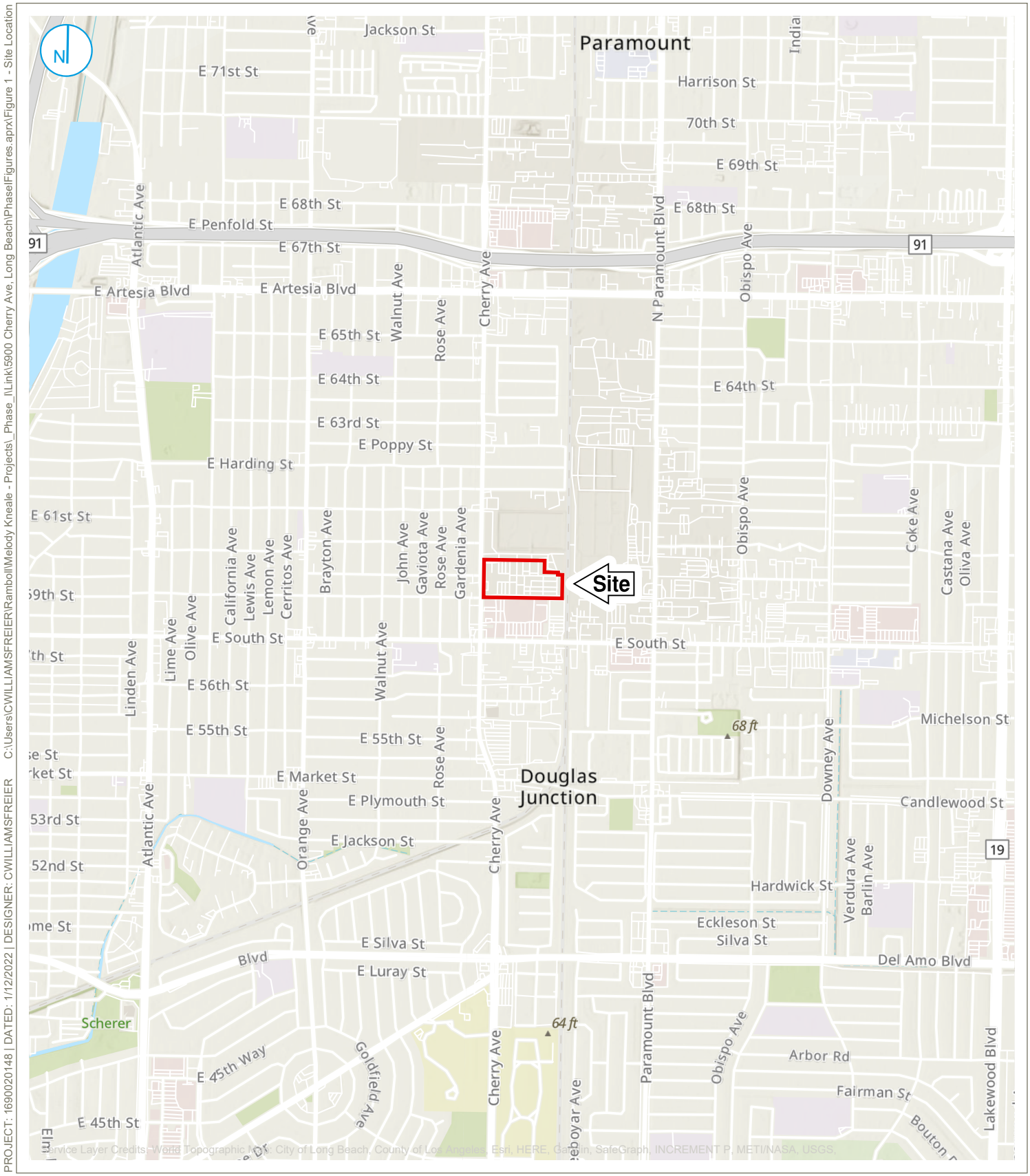
A condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

**Data Gap/Significant Data Gap:**

A lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information. A data gap is significant if other information and/or professional experience raises concerns involving the data gap.

*Please note that the term "other finding" is not defined by ASTM; rather, Ramboll uses the term to connote areas of contingent risk that are not clearly defined by the ASTM Standard.*

# FIGURES




PROJECT: 1690020148 | DATED: 1/12/2022 | DESIGNER: CWILLIAMSFREIER C:\Users\CWILLIAMSFREIER\Ramboll\Melody Kneale - Projects_Phase_II\Link\5900 Cherry Ave, Long Beach\PhaseIFigures.aprx\Figure 1 - Site Location

Service Layer Credits: World Topographic Map | City of Long Beach, County of Los Angeles, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS,



KEY MAP

Site Boundary

Map Scale: 1:1:24,000;
Map Center: 118°9'59"W 33°51'45"N

0 1,000 2,000 Feet

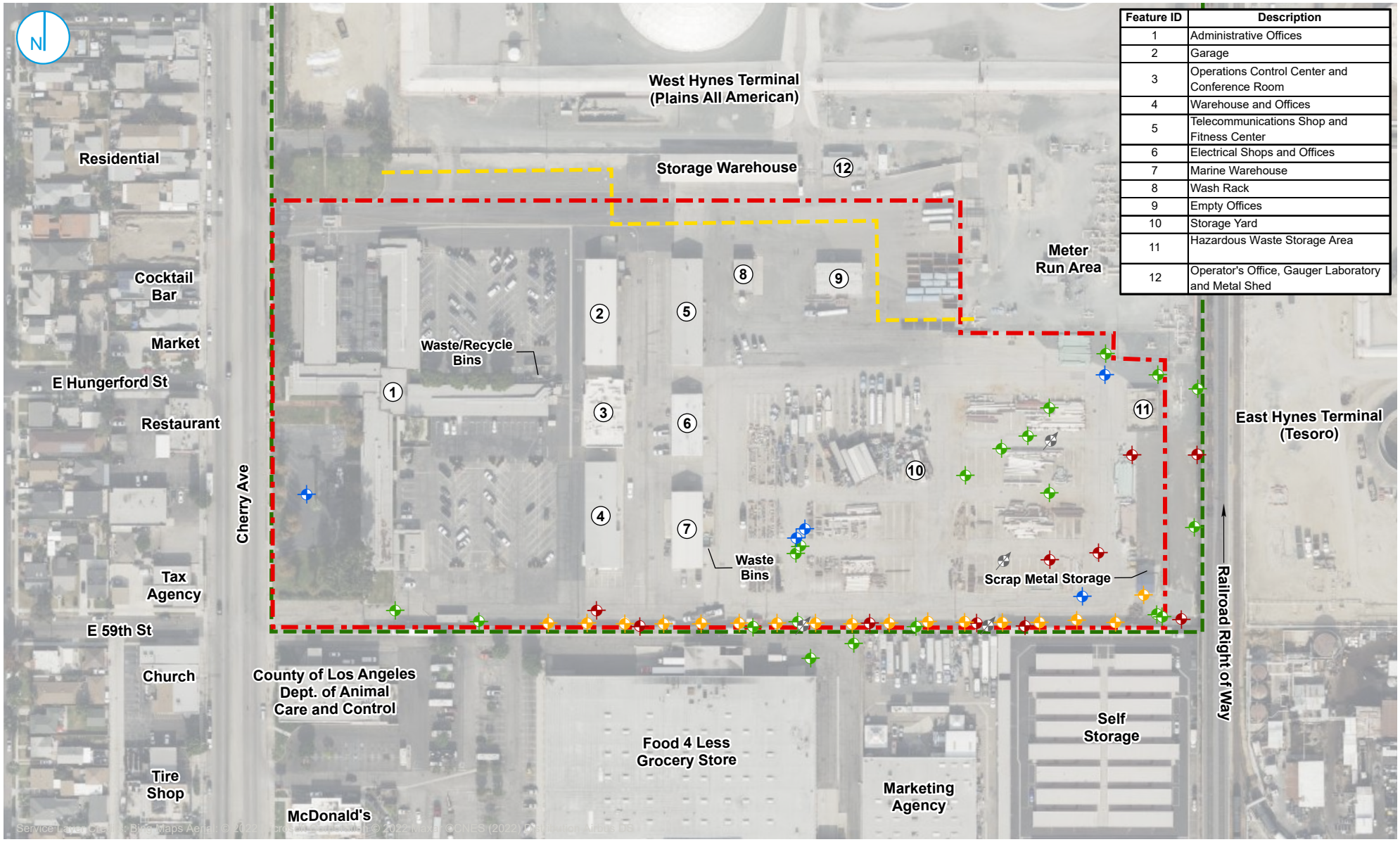
## SITE LOCATION

5900 Cherry Avenue
Long Beach, California

## FIGURE 01

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

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| Feature ID | Description |
|---|---|
| 1 | Administrative Offices |
| 2 | Garage |
| 3 | Operations Control Center and Conference Room |
| 4 | Warehouse and Offices |
| 5 | Telecommunications Shop and Fitness Center |
| 6 | Electrical Shops and Offices |
| 7 | Marine Warehouse |
| 8 | Wash Rack |
| 9 | Empty Offices |
| 10 | Storage Yard |
| 11 | Hazardous Waste Storage Area |
| 12 | Operator's Office, Gauger Laboratory and Metal Shed |

- Site Boundary
- West Hynes Terminal Boundary
- (1) Site Feature
- Abandoned Underground Pipeline
- Existing Gaspur Aquifer Monitoring Well
- Existing Semi-Perched Aquifer Monitoring Well
- LNAPL Recovery Well
- Biosparging Well
- Inactive Vapor Extraction Well

0 90 180 Feet

# SITE LAYOUT

5900 Cherry Avenue
Long Beach, California

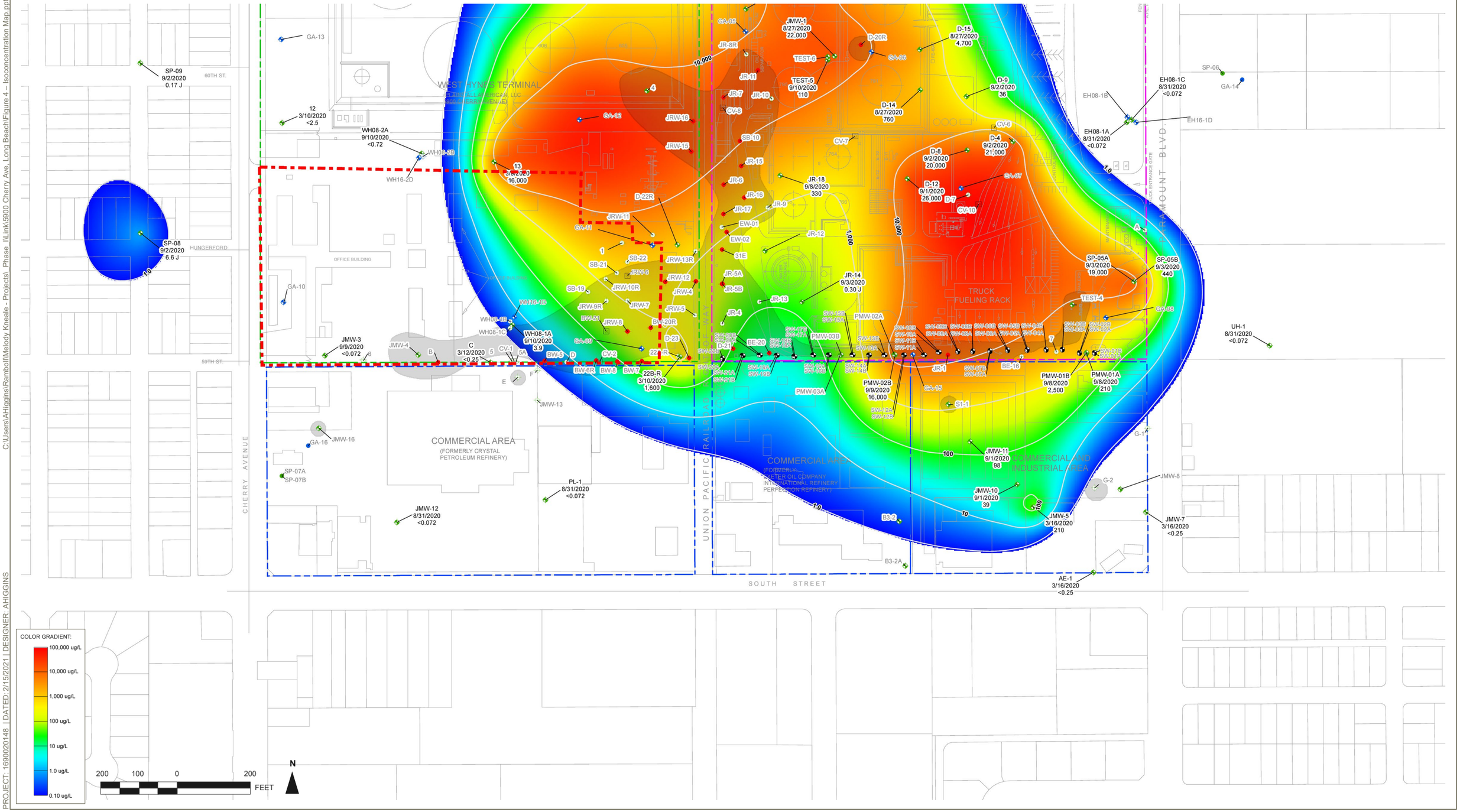
# FIGURE 02

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C:\Users\AHiggins\Ramboll\Melody Kneale - Projects_Phase_II\Link\5900 Cherry Ave, Long Beach\Figure 4 – Isoconcentration Map.pptx

PROJECT: 1690020148 | DATED: 2/15/2021 | DESIGNER: AHIGGINS




## LEGEND

- WELL ID / SAMPLING DATE / ANALYTE / CONCENTRATION (µg/L)
- LNAPL RECOVERY WELL
- EXISTING GASPUR GROUNDWATER MONITORING WELL (USED FOR GAUGING)
- EXISTING GASPUR GROUNDWATER MONITORING WELL (USED FOR ANNUAL SAMPLING)
- PLANNED GASPUR GROUNDWATER MONITORING WELL
- EXISTING SEMI-PERCHED GROUNDWATER MONITORING WELL (USED FOR GAUGING)
- EXISTING SEMI-PERCHED GROUNDWATER MONITORING WELL (USED FOR ANNUAL SAMPLING)
- PLANNED SEMI-PERCHED GROUNDWATER MONITORING WELL
- SPARGE WELL
- INACTIVE SOIL VAPOR EXTRACTION WELL
- ISOCONCENTRATION CONTOUR (µg/L)
- EXTENT OF EAST HYNES TERMINAL PROPERTY OWNED BY TESORO
- EXTENT OF WEST HYNES TERMINAL OWNED BY PLAINS ALL AMERICAN
- EXTENT OF PROPERTY OWNED BY OTHERS
- EXTENT OF RAMBOLL SITE BOUNDARY
- LNAPL EXTENT BASED ON LNAPL THICKNESS GREATER THAN 0.1 FEET OBSERVED IN WELLS GAUGED DURING AUGUST/SEPTEMBER 2020 SITE-WIDE GAUGING EVENT

NOTE:
SHOWING CONTOURS FOR BENZENE >=1.0 µg/L.

ABBREVIATIONS:
µg/L MICROGRAMS PER LITER
BGS BELOW GROUND SURFACE
LNAPL LIGHT, NON-AQUEOUS PHASE LIQUID
MSL MEAN SEA LEVEL

SOURCE: 2020 GROUNDWATER MONITORING REPORT, AECOM

# ISOCONCENTRATION MAP, BENZENE IN GROUNDWATER, SEMI-PERCHED AQUIFER

5900 Cherry Avenue
Long Beach, California

# FIGURE 03

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# APPENDIX A
# SITE PHOTOGRAPHS



Photo 1: View of front of administrative office building.



Photo 2: View of typical interior hallway in administrative office building.




Photo 3: Trash dumpster adjacent to office building.



Photo 4: View of paved area between the Garage Building and the Fitness Center. West Hynes tank farm in the background.



Photo 5: View of diesel generator in southern end of Garage Building.




Photo 6: View of diesel AST associated with generator (out of use).



Photo 7: View of electrical equipment in Garage Building.




Photo 8: View of service bay in Garage Building.



Photo 9: Area where flammable materials storage cabinet and waste bins were previously stored in Garage Building.



Photo 10: Garage Building.




Photo 11: Pallets with new and used paint cans and buckets as well as empty blue drums.



Photo 12: Garage Building.




Photo 13: Compressor in Garage Building.

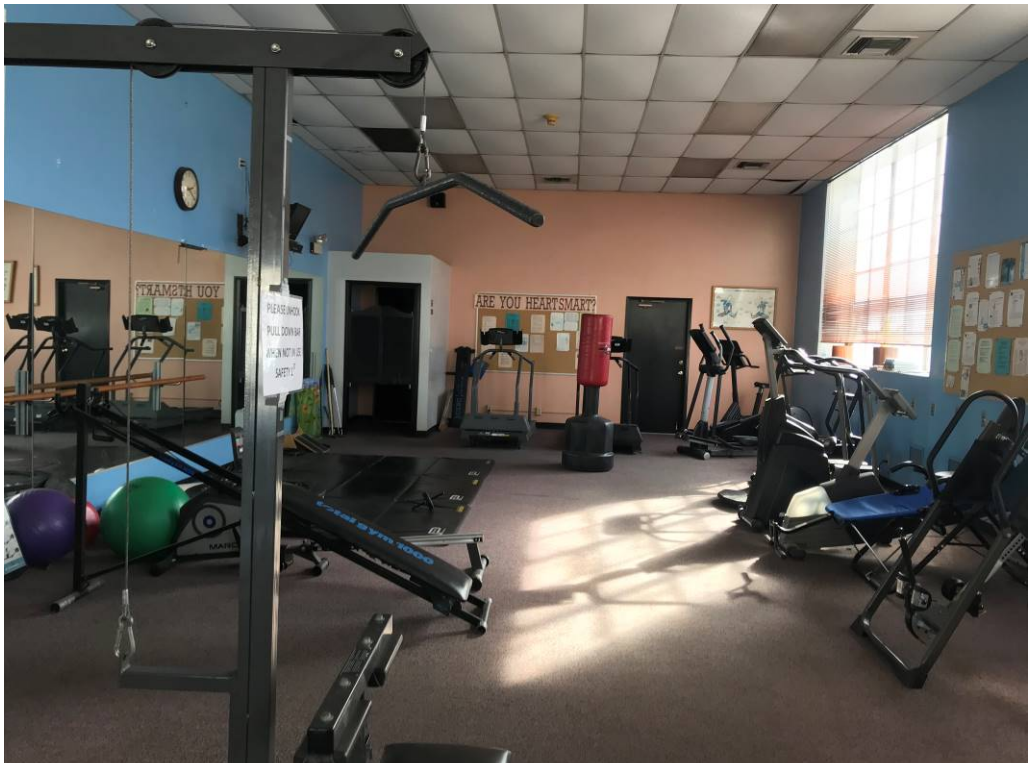



Photo 14: Fitness Center.



Photo 15: Office space in Fitness Center Building.



Photo 16: Electrical Shop.



Photo 17: Marine Warehouse Building.



Photo 18: Maintenance Building storage.



Photo 19: Offices in Maintenance Building.



Photo 20: Conference/Assembly Center.



Photo 21: Dry type transformer.




Photo 22: View of wash rack bay.



Photo 23: View of 2-stage clarifier at wash rack.



Photo 24: View of wash rack bay.



Photo 25: View of oil/water separator at wash rack.



Photo 26: View of empty prefabricated office building.



Photo 27: View of Equipment Storage area (formerly occupied by O.C. Vacuum).



Photo 28: View of fire suppression system (former location of AFFF drum).




Photo 29: Hazardous Material and Waste Storage Area.



Photo 30: Hazardous Waste Storage Area (puddled water from recent rainstorm).




Photo 31: Empty drum (formerly contained AFFF) and drum containing empty aerosol canisters.




Photo 32: Storage of oil rags, personal protective equipment (PPE) in hazardous waste storage area.



Photo 33: Typical material storage in Storage Yard.



Photo 34: Restaurant west of site across Cherry Avenue.



Photo 35: County office building to the adjacent south of the site.



Photo 36: East Hynes facility to the adjacent east of the site.




Photo 37: Business and church to the adjacent west of the site.

# SOIL MANAGEMENT PLAN

## CHERRY LOGISTICS CENTER
## 5910 CHERRY AVENUE
## LONG BEACH, CALIFORNIA

Intended for
**Link Logistics Real Estate**

Prepared By
**Ramboll US Consulting, Inc.**
**Los Angeles, California**

Date
**November 17, 2022**

Project Number
**1690020148**

RAMBOLL

# CONTENTS

| | | Page |
|---|---|---|
| **1.** | **INTRODUCTION** | **1** |
| 1.1 | Soil Management Plan | 1 |
| 1.2 | Site Setting | 1 |
| 1.3 | Site Use History | 2 |
| 1.4 | Site Geology and Hydrogeology | 2 |
| 1.5 | Previous Assessments | 3 |
| 1.5.1 | Summary of Known Site Conditions | 3 |
| 1.6 | Planned Site Redevelopment | 4 |
| **2.** | **WORKER HEALTH AND SAFETY REQUIREMENTS** | **5** |
| 2.1 | Site Specific HASP Components | 5 |
| 2.2 | Key Personnel/Health and Safety Responsibilities | 5 |
| 2.3 | Job Hazard Analysis/Hazard Mitigation | 5 |
| 2.4 | Personal Protective Equipment | 5 |
| 2.5 | Work Zones and Site Security Measures | 6 |
| 2.6 | Decontamination Measures | 6 |
| 2.7 | General Safe Work Practices | 6 |
| 2.8 | Contingency Plans/Emergency Information | 6 |
| 2.9 | Medical Surveillance | 6 |
| **3.** | **SOIL MANAGEMENT DURING EARTHWORK** | **7** |
| 3.1 | Dust Control | 7 |
| 3.2 | Procedures for Soil Inspection and Notifications | 7 |
| 3.2.1 | Incident Documentation | 8 |
| 3.2.2 | Containment | 8 |
| 3.2.3 | Site Investigation and Disposal of Impacted Soil | 9 |
| 3.2.4 | Agency Notification | 9 |
| 3.2.5 | Backfilling | 9 |
| 3.2.6 | Waste Segregation Operations | 9 |
| 3.2.7 | Decontamination Procedures | 9 |
| 3.3 | Management of Buried Drums, Tanks, Abandoned Pipes, or Wells | 9 |
| 3.3.1 | Buried Drum Removal | 10 |
| 3.3.2 | Tank and/or Pipeline Removal | 10 |
| 3.3.3 | Wells | 10 |
| 3.4 | Spills | 10 |
| 3.5 | Procedures for Groundwater Inspection and Reporting | 11 |
| 3.6 | Notification of Discovery | 12 |
| 3.6.1 | Storm Water Runoff | 12 |
| 3.7 | Off-Site Disposal | 12 |
| 3.8 | Criteria for On-Site Soil Reuse | 13 |
| 3.9 | Import Fill | 13 |
| 3.10 | Soil Management Documentation | 14 |
| **4.** | **DUST CONTROL PROCEDURES** | **15** |
| 4.1 | Regulatory Framework | 15 |
| 4.2 | General Dust Control Methods | 15 |
| 4.3 | Plan Implementation and Corrective Actions | 16 |

## CONTENTS (Continued)

| | | Page |
|---|---|---|
| 4.3.1 | Wind Measurement | 16 |
| 4.3.2 | Suggested Action Levels and Corrective Actions | 16 |
| 4.3.3 | Fugitive Dust | 17 |
| 4.4 | Dust Monitoring Recordkeeping | 17 |
| **5.** | **COMPLETION REPORT** | **18** |
| **6.** | **REFERENCES** | **19** |

## TABLES

Table 1: Suggested BMPs for Wind Speed Exceedances 16

## FIGURES

Figure 1: Site Location Map
Figure 2: Pre-Demolition Site Layout
Figure 3: Future Building Layout and Well Location Map
Figure 4: Isoconcentration Map, Benzene in Groundwater, Semi-Perched Aquifer

## APPENDICES

Appendix A: Contact Information for Notification
Appendix B: Field Reporting Form
Appendix C: Spill Reporting Form
Appendix D: DTSC's Information Advisory on Clean Imported Fill Material
Appendix E: SCAQMD Rule 403

# 1. INTRODUCTION

On behalf of Link Logistics Real Estate ("Link", the "Client"), Ramboll US Consulting, Inc. (Ramboll) has prepared this Soil Management Plan (SMP) related to 5900 Cherry Ave Industrial Redevelopment, which was formerly a portion of the Plains All American West Hynes Facility (West Hynes facility), located at 5910 Cherry Avenue[1] in Long Beach, California (herein referred to as the "facility" or the "site"; see Figures 1 and 2). The SMP has been prepared to provide guidance to Link Logistics and its contractors on actions and procedures to implement in the event that unanticipated subsurface conditions or features are encountered during grading and earthwork operations. This SMP has been prepared for use and implementation by the General Contractor ("Contractor" or "General Contractor") while earthwork is being conducted at the site. This SMP is being provided to the Los Angeles Regional Water Quality Control Board ([LA]RWQCB) for review prior to implementation.

Site redevelopment plans include development of one approximately 300,000 square-foot (SF) warehouse building (Figure 3). The majority of the building has approximately 40-foot-high clear height, with a small office area in the southwest corner of the building.

The term "earthwork", for the purpose of this SMP, includes all soil movement, such as trenching, excavation, rough grading, backfilling, removing slab and foundation, and removing parking lot and drive aisle pavement. Based on current project plans, we understand that no soil export is planned for the site and off-site disposal is not anticipated.

Groundwater is not expected to be encountered during site redevelopment.

This document will be updated on an as-needed basis if and when new information becomes available that is relevant to soil management at the site.

## 1.1 Soil Management Plan

The purpose of the SMP is to describe, generally, the procedures for soil management that will be employed during earthwork activities at the site. The SMP has been developed to facilitate the redevelopment of the site by outlining procedures that will be used for identifying, testing, handling, and off-site disposal of impacted soil that may be encountered during the redevelopment activities, as well as measures to minimize dust generation. Implementing the procedures in this SMP will assist in management of potentially impacted soil and soil vapor in a manner that is protective of human health and the environment, in accordance with Federal, State, and local regulations.

This SMP was developed as a best management practice while working at the site. This SMP provides protocols and guidance that site contractors must follow in the event impacted soil is encountered during earthwork. The dust control section of this document provides general guidance for minimizing fugitive or airborne dust emissions from the site during construction activities. The General Contractor may have additional requirements based on their construction permits.

This SMP does not address management of storm water during construction activities. A separate Storm Water Pollution Prevention Plan (SWPPP) will be prepared by others for the site.

## 1.2 Site Setting

The 14.14-acre site is located approximately 17 miles south of downtown Los Angeles. According to the Assessor's Office, the site comprises assessor's parcel number (APN) 7119-018-032

[1] The site address was changed by Link Logistics from 5900 Cherry Avenue to 5910 Cherry Avenue.

The site is currently improved with an approximately 32,815-SF administrative building in the western portion of the site. Several other buildings totaling approximately 11,025 SF are located in the central portion of the site including a Garage Building, an Operations Control Center and Conference Room, a Warehouse/Office Building, a Telecommunications Shop, Office and Fitness Center, an Electrical Shop and Offices, a Marine Warehouse, and an empty prefabricated Office Building. Other smaller structures on the site consist of a File Storage Room (Former Laboratory), a wash rack, and a few small sheds. Site redevelopment plans include demolition of all existing site buildings and construction of one approximately 300,000 SF warehouse building, as shown on Figure 3.

## 1.3 Site Use History

Pacific Pipeline System LLC (Pacific Pipeline) operated a corporate office building and maintenance operations hub for its southern California pipelines at the site, which was in the southern portion of the West Hynes facility in Long Beach, California.

The area in the vicinity of the site was used for cattle ranching prior to industrial development. In 1923, the East Hynes Terminal property (East Hynes facility; adjacent east of the site) was acquired by Richfield Oil Company (Richfield) and used as a refinery and for distribution. In 1928, Richfield acquired the West Hynes Terminal property (West Hynes facility). The tank farm at the West Hynes facility, to the north of the site, was constructed in 1929 and pipelines were constructed to transport petroleum product between the East and West Hynes facilities. The East and West Hynes facilities were used for gasoline storage and bulk distribution between 1954 and 1977. Both facilities were operated by Four Corners Pipeline Company from 1978 to 1987 and used to store heavy hydrocarbon-based products and to ship petroleum product. Arco Terminal Services acquired the East and West Hynes terminals in 1987. Pacific Pipeline acquired the West Hynes facility, including the site, in 1998. Plains All American is the parent company of Pacific Pipeline.

The site comprised a portion of the West Hynes facility only. In 1953, buildings constructed on the site for Richfield included the main office building, a laboratory, carport, garage, change building, storehouse, pump shop, shop, store rack, wash rack, and tool building & platform. The use of the site has remained similar throughout the history of the site.

O.C. Vacuum, a hazardous materials transporter and industrial services company, formerly leased a portion of the Garage Building for vehicle maintenance, a portion of the Telecommunications/Office/Fitness Center Building for its offices, and a portion of the storage yard for storage of roll-off bins, equipment, and fleet vehicles. Zenith Energy West Coast Terminals formerly leased a portion of the administrative office building for its office operations but did not lease or use any other portion of the site. Both tenants vacated the site in 2021.

## 1.4 Site Geology and Hydrogeology

The site lies approximately ¼-mile north of the Bouton Plain upon the gently north-sloping boundary between Signal Hill and the broader Downey Plain, which is drained by the channelized Los Angeles and San Gabriel Rivers, and their smaller tributaries (Montgomery Watson, 1993). The subsurface geology in the area surrounding the site is characterized by Holocene and Pleistocene sediments to the depth of approximately 1,200 feet below ground surface. Soil sampled from beneath the site and nearby vicinity included poorly graded sands, silty sands, silts, silty clay, sandy clay, and clay.

The Lakewood Formation extends to approximately 200 feet beneath the site and is comprised of the Recent Alluvium or Semi-Perched aquifer, underlain by the Bellflower aquitard, and the Gaspur, Artesia/Exposition, and Gage aquifers. The depth to groundwater at the site is understood to be at approximately 20 to 32 feet below ground surface (bgs), and the groundwater flows in a west-southwesterly and southwesterly direction at the site (AECOM, 2021).

## 1.5 Previous Assessments

The site is involved in ongoing groundwater monitoring and remediation activities related to the East Hynes facility. The East Hynes facility is owned and operated by Tesoro Logistics Operations, LLC (Tesoro), which retains responsibility for the cleanup of groundwater impacts that extend from its property to the site under the oversight of the RWQCB. Groundwater impacts beneath the site from the East Hynes property include light non-aqueous phase liquid (LNAPL) (i.e., undissolved petroleum products that are found floating on top of the groundwater) and dissolved phase petroleum hydrocarbons including TPH (gasoline-range organics [GRO]), benzene, toluene, ethylbenzene and xylenes (BTEX), methyl tertiary butyl ether (MTBE), and tert-butyl alcohol (TBA), among others. Groundwater beneath the site from the Semi-Perched and Gaspur aquifers is monitored on a semi-annual basis from on-site wells (Figures 2 and 3). Currently, LNAPL is recovered from eight wells on the site on a bi-weekly, monthly, and quarterly basis (depending on the well). In mid-2021, 26 biosparging wells were installed along the southern boundary of the site at 17 locations (nine are co-located pairs installed at different depths). These wells will be used for a future biosparging system that is planned for the site. No other current on-site remediation activities are planned. An additional Gage Aquifer groundwater monitoring wells is proposed to be installed at the site, to the west of the planned future building.

A soil vapor investigation was conducted by ENSR Corporation (ENSR) in 2008 on behalf of Atlantic Richfield Company[2] to evaluate several areas including "two locations adjacent to buildings" on the West Hynes property (see Figure 3). According to the 2008 report, soil vapor samples collected from the two locations at the depths of approximately 2.5 feet, 4.5-5 feet, and 9-10 feet below ground surface and analyzed by United States Environmental Protection Agency (USEPA) Method 8260B. A second round of soil vapor samples was collected from the two locations at the 4.5-5-foot depth range approximately two weeks later and analyzed by USEPA Method TO-15. The results are described below. ENSR had no recommendations for further evaluation at West Hynes.

Previous sample and well locations are shown in Figure 3.

### 1.5.1 Summary of Known Site Conditions

The following sections provide a summary of known site soil and soil vapor conditions.

#### 1.5.1.1 Soil

A soil and soil vapor investigation was conducted by ENSR in 2008 on behalf of Atlantic Richfield Company to evaluate several areas including "two locations adjacent to buildings" on the West Hynes property (see Figure 3). Soil samples were collected from these locations at depths ranging from 2.5 to 14 feet bgs and analyzed for TPH-GRO BTEX, MTBE, and TBA. All analytes were not detected above laboratory reporting limits (RLs) with the exception of toluene, which was detected at concentrations several orders of magnitude below the screening level for commercial/industrial sites.

#### 1.5.1.2 Groundwater

Impacts to groundwater by petroleum-related hydrocarbons extend across only the eastern portion of the site. According to the most recent groundwater monitoring report, the highest concentration of benzene beneath the site was 17,000 µg/L in the Semi-Perched aquifer (approximately 21 to 33 feet bgs) at the north-central boundary of the site (Figure 4). This concentration exceeds the risk-based screening level for commercial/industrial sites of 1.8 µg/L. Monitoring wells that are located

[3] 2008. 2008 Soil Vapor Assessment Activities, East and West Hynes Properties, East Hynes Terminal, 5905 Paramount Boulevard, Long Beach, California. September.

downgradient of the buildings at the site have low or non-detect concentrations and do not indicate impacts to groundwater or source areas as a result of historical site operations.

#### 1.5.1.3 Soil Vapor

According to the 2008 ENSR report, soil vapor samples collected from the two locations at the depths of approximately 2.5 feet, 4.5 to 5 feet, and 9 to 10 feet bgs and analyzed by USEPA Method 8260B. TPH-GRO and BTEX were not detected above laboratory RLs. A second round of soil vapor samples was collected from the two locations at the 4.5-5-foot depth range approximately two weeks later and analyzed by USEPA Method TO-15 to achieve lower RLs. Toluene and xylenes were detected in SV-08-09 at concentrations slightly above the laboratory RLs and well below current commercial soil vapor screening levels (using attenuation factor of 0.03). In addition, methane was not detected in any of the samples.

### 1.6 Planned Site Redevelopment

Site redevelopment plans include development of one warehouse building. The future footprint of the building includes a loading dock in the southeastern portion. Wells in this area will be proposed for abandonment and/or relocation, which will be handled in a separate plan. The following earthwork activities will be conducted during redevelopment. Based on current project plans, we understand that no soil export is planned for the site and off-site disposal is not anticipated. Further, site work is not anticipated to encounter groundwater.

- **Demolition.** Initial site preparation will include demolition of the improvements associated with the existing facility. This includes all topsoil and organics, foundations, floor slabs, and any underground improvements that will not be reused with the new development. Heavy equipment (excavators and dozers) will be used and will traverse throughout the site.
- **Mass Grading/Excavation.** Grading/excavation within the site area to remove the existing undocumented fill soils will extend to depths of up to 5½± feet beneath the existing surface. The over-excavation is also recommended to extend to a depth of at least 8 feet below existing grade, and to a depth of 5 feet below proposed building pad subgrade elevation. The new parking area and loading dock subgrade soils will also be scarified to a depth of 12± inches, moisture conditioned, and recompacted thereafter. This work will be performed by large, heavy equipment that will be directly adjacent to many of the existing wells throughout the entire site. Existing wells associated with monitoring and remediation at the site will be protected-in-place as described in Section 3.3.3.
- **Site Utility Excavation.** After the mass grading operations, installation of site utilities (storm drain, sewer, fire water, etc.) will commence with grading, trenching, and backfill in the over-excavated areas.

# 2. WORKER HEALTH AND SAFETY REQUIREMENTS

The General Contractor ("Contractor" or "General Contractor") for the redevelopment project will be responsible for establishing and maintaining its own appropriate health and safety plan and procedures to minimize worker and public exposure to site contaminants during construction. In addition to standard health and safety discussions, on-site workers will be periodically briefed on pertinent elements of the SMP.

The components of the Contractor's Health and Safety Plan (HASP) shall be consistent with all applicable California occupational health and safety administration (Cal/OSHA) standards and currently available toxicological information. The Contractor and its subcontractors will assure that on-site construction workers have the appropriate level of health and safety training and use the appropriate level of personal protective equipment, as outlined in the HASP based upon the evaluated job hazards and relevant monitoring results. Although not anticipated to be necessary, to the extent that any construction activities may constitute "clean-up operations" or "hazardous substance removal work" as defined in the Cal/OSHA standards for Hazardous Waste Operations and Emergency Response (HAZWOPER), 8 Cal. Code Reg. § 5192, Contractor will assure that on-site personnel conducting such activities, who may contact chemicals in soil have had training, and are subject to medical surveillance, in accordance with Cal/OSHA standards ("HAZWOPER-trained personnel"). Soil that is visibly stained, discolored, shiny, or oily, or has a noticeable odor, will be handled only by such HAZWOPER-trained personnel until the Environmental Professional(s) (personnel to be determined by the Contractor; for the purposes of the initial development) evaluates the situation (see Section 3) to understand whether the soil contains unacceptable concentrations of contaminants.

## 2.1 Site Specific HASP Components

The components of the site-specific HASP are outlined below. The HASP should be tailored to current site conditions, current occupational safety and health standards, and task-specific activities then known to the preparer of the HASP.

## 2.2 Key Personnel/Health and Safety Responsibilities

The HASP will identify the Contractor's key personnel by name and will include identification of the Project Manager, the Site Supervisor, Site Safety Officer, and the subcontractors that will be working at the site. The Contractor will provide its employees who will potentially contact soil or previously unidentified soil contamination a copy of the HASP and brief its employees as to its contents. The health and safety responsibilities of each individual worker will be described in the HASP.

## 2.3 Job Hazard Analysis/Hazard Mitigation

A description of the hazards associated with the specific construction activities that give rise to contact or potential contact with soil or previously unidentified contamination will be presented in this section of the HASP. The hazards that will be discussed include, at a minimum, chemical, temperature, and explosion hazards, if applicable. As part of the job hazard analysis, the HASP will identify the chemicals likely to be encountered during the construction activities and will present a table indicating the symptoms of exposure and the relevant regulatory exposure limits for each compound (i.e., the Cal/OSHA Permissible Exposure Limit [PEL]). The procedures to mitigate the hazards identified in the job hazard analysis will also be presented in this section of the HASP. The use of appropriate Personal Protective Equipment (PPE) will likely be the principal mitigation procedure.

## 2.4 Personal Protective Equipment

The HASP will identify the PPE that will be used to protect workers from chemicals of potential concern (COPCs) identified in soil. PPE will be selected based on the COPCs identified at the work site, and the

known route(s) of entry into the human body. The primary exposure routes include direct contact with soil and inhalation of dust or vapors.

Dust control measures including routine procedures and corrective controls are discussed in Section 3.1 and 4. Further discussion of air monitoring for the purpose of soil management, if needed, is included in Section 3.2.

Construction activities are not expected to result in workers coming into direct contact with groundwater.

## 2.5 Work Zones and Site Security Measures

The HASP will identify the specific work zones of the construction site and describe the site security measures, such as the placement of barricades, fencing, access control, and access logs. All workers within the work zone, who will have direct contact with soil, will perform the work in compliance with relevant aspects of the HASP. The support zone will be located outside of the work zone, but within the boundaries of the construction site. All end-of-the day clean-up operations, such as cleaning of truck wheels (for vehicles exiting the construction site that could be tracking potentially contaminated soils off-site), and the removal of any PPE, will occur in the support zone. If possible, the support zone will be located in close proximity to the entry and exit point of the construction site. The entire construction site will be fenced to control pedestrian and vehicular entry, except at controlled points. The fences will remain locked during non-construction hours, and all visitors will be required to sign a visitor log.

## 2.6 Decontamination Measures

The HASP will describe the specific procedures that will be used to decontaminate both equipment and personnel that have been performing work in direct contact with potentially impacted soil, if encountered. Decontamination measures will include cleaning the wheels of all vehicles that have been in contact with soil in the support zone prior to their exiting the site. Additionally, workers will be required to remove any contaminated PPE and place it in a designated area in the support zone prior to leaving the site.

## 2.7 General Safe Work Practices

The HASP will discuss the general safe work practices to be followed at the construction site, including entry restrictions, tailgate safety meetings, use of PPE, personal hygiene, hand washing facilities, eating and smoking restrictions, the use of warning signs and barricades, precautions near heavy equipment, confined space entry, and any special precautions that may be specific to the construction site and construction worker.

## 2.8 Contingency Plans/Emergency Information

The HASP will provide information regarding the procedures to be followed in the event of an emergency. The location of specific emergency equipment, such as eyewash, first aid kit, and a fire extinguisher, and emergency telephone numbers and contacts will be identified. A map indicating the route to the nearest hospital will also be provided in the HASP.

## 2.9 Medical Surveillance

The HASP will describe medical surveillance that would be required for certain workers. To the extent that any construction activities may constitute "clean-up operations" or "hazardous substance removal work" as defined in the Cal/OSHA standards for Hazardous Waste Operations and Emergency Response, 8 Cal. Code Reg. § 5192, each construction contractor will assure that its on-site personnel conducting such activities have had training, and are subject to medical surveillance, in accordance with Cal/OSHA standards ("HAZWOPER-trained personnel").

# 3. SOIL MANAGEMENT DURING EARTHWORK

To mitigate potential concerns related to contact with soil that may be contaminated during future excavation and grading at the site, soil management procedures are described below.

## 3.1 Dust Control

Dust control measures will be implemented by site contractors during construction activities to minimize the generation of dust. It is particularly important to minimize the exposure of on-site construction workers to dust and to prevent dust from migrating off-site. Dust generation may be associated with concrete slab removal and processing (including potential concrete grinding for reuse at the site, if applicable), excavation and grading activities, truck traffic, ambient wind traversing soil stockpiles, loading of transportation vehicles, and other earthwork, as previously described.

Section 4 of this document provides suggested best practices for dust control in the context of redevelopment activities that include potential dust generating earth work activities. The plan provides measures to protect construction workers and the public. The Contractor and Site Superintendent (see Appendix A) shall be notified in the event of unmitigated dust. Southern California Air Quality Management District (SCAQMD) Rule 403, *Dust Control*, is also referenced (see Appendix E).

## 3.2 Procedures for Soil Inspection and Notifications

During grading, potentially-impacted soil or other subsurface materials may be identified via observation of any of the following characteristics:

- *Presence of free product*. Free product is defined as a petroleum product (e.g., oil) or chemical in its natural state, un-mixed with water. Free product is often identifiable by the presence of an oily substance or the presence of an oily sheen on soil or water.
- *Oily or other staining*. Oily staining is not consistent in appearance, but often has a black, dark gray, dark brown, or greenish hue. Other unusual staining or soil discoloration (e.g., blue soils) should also be considered potential evidence of contamination.
- *Petroleum or Chemical Odor*. Any petroleum or other chemical odor should be noted regardless of whether a visible sign of oil or staining is encountered. If odorous soil or debris is encountered, the material may be contaminated and should be evaluated as soon as possible by field screening with a photoionization detector (PID) and, if warranted based on the field screening results, sampling for laboratory analysis. Areas exhibiting elevated PID readings above health and safety action levels should not be entered until laboratory data is available to evaluate potential health risks.
- *Presence of Elevated Metals.* Elevated metals in soil may be identified by strong and sometimes bright discoloration. Any chemical or metal odor should be noted regardless of whether a visible sign of elevated metals is encountered.
- *Presence of Waste Debris.* If debris such as concrete, scrap metal, bricks, or other solid or industrial waste is identified, the debris and surrounding soil may be potentially contaminated where impacts are observed.
- *Presence of serpentine-containing rock in fill materials or base rock.* If dark gray or greenish serpentine rock (potentially having white fibrous inclusions) is identified, the material may potentially contain naturally-occurring asbestos (NOA).

Evaluation of whether soil is potentially contaminated should include input from one of the Environmental Professionals listed in Appendix A.

Upon identification and confirmation that soil is potentially contaminated, the following actions should immediately be taken:

1. Stop work in the area of potentially impacted soil.
2. Contact the individuals in Appendix A, to report the finding; leave a message if the individual does not pick up the phone.
3. Complete the Field Reporting Form (Appendix B) (see Section 3.2.1 for further information relating to documentation).
4. Contain the impacted material, as instructed (see Section 3.2.2 for additional information relating to containment of potentially-impacted material).
5. Work should not resume within the area of potential impact until clearance is received from one of the Environmental Professionals listed in Appendix A.

A copy of this SMP will be kept in each of the on-site construction trailers for reference and use in the event that potentially contaminated soil is encountered.

### 3.2.1 Incident Documentation

In the event potentially contaminated soil and material are encountered during construction activities, information regarding the characteristics, location, and extent of the soil and material impacts must be collected. This information should be documented as follows and provided to the Environmental Professional:

- The approximate location (marked on a site map).
- Extent of potential contamination (How large an area of impacts has been identified?).
- What indications of potential impacts were observed (Odor? Discoloration? Free product? Waste material?).
- Is groundwater or a surface water body (surface puddles not included) impacted (sheen or product on water surface?).
- Information regarding the type of work activities being conducted at the time of discovery.
- Weather conditions.
- If possible, take photographs.

### 3.2.2 Containment

If instructed to do so, the reporting individual should work with the Contractor to contain the potentially-impacted soil and material. The Environmental Professional will evaluate whether potentially-impacted soil and material should be contained based on information provided. The purpose of containment is to ensure that potentially-impacted soil does not spread to other portions of the site or mobilize off-site in the event of rain.

Generally, containment will include one or more of the following steps:

- Relocation of impacted soils to a constructed containment cell created using an earthen berm lined with plastic sheeting. Soils placed within containment cells are subsequently covered with plastic sheeting that extends outside the cell and is sufficiently anchored to minimize exposure to wind and rain.
- Covering impacted soil and material with plastic sheeting and marking the area "Do Not Disturb."

- Placement of silt fencing around the area of potential impacts.
- In the event that free product is observed, applying oil dry or sorbent cloths to soak up oily material.

### 3.2.3 Site Investigation and Disposal of Impacted Soil

If necessary and as requested by the Client, the Contractor, or the RWQCB, the Environmental Professional will mobilize to the site to further investigate the nature and extent of the potential contamination. Further investigation, including sampling of the soil and/or other subsurface material conducting further excavation in the area, may be warranted depending on-site conditions.

If necessary, the impacted soil stored in the containment cell will be transported off-site for appropriate disposal per Section 3.7.

### 3.2.4 Agency Notification

If concluded to be required and/or necessary, and at the request of and on behalf of the Client, the Environmental Professional will make the appropriate notifications and report the finding to relevant agencies.

### 3.2.5 Backfilling

If an area of contamination is discovered and excavated, no backfilling of an area containing potentially contaminated soil and/or groundwater will be conducted without prior approval from the Environmental Professional. No impacted soil may be used as backfill (criteria for on-site soil reuse is presented in Section 3.8).

Please refer to Section 3.9 for details on import fill evaluation requirements.

### 3.2.6 Waste Segregation Operations

Following laboratory analysis, if soil is determined to contain COPCs and removal is required from any area on-site, such soil will be segregated and stockpiled in separate containment areas to prevent mixing with non-impacted soil. Impacted soil will be stored in a way that prevents impacts to unimpacted material by using methods described in Section 3.2.2.

### 3.2.7 Decontamination Procedures

If soil containing COPCs is identified by the Contractor during excavation/grading activities, the Environmental Professional(s) will develop and oversee appropriate decontamination procedures for the field personnel and equipment that have come into contact with soil containing COPCs. Specific procedures may vary depending on the type of contamination that is identified.

## 3.3 Management of Buried Drums, Tanks, Abandoned Pipes, or Wells

If buried drums, underground storage tanks (USTs), underground hydraulic lifts, abandoned pipes, or previously unknown wells are encountered during construction, the following actions should immediately be taken:

1. Stop work in the area of where the buried drums, tanks, pipelines, and/or wells were identified.
2. Contact the individuals in Appendix A to report the finding; leave a message if the individual does not pick up the phone.
3. The Contractor or the Environmental Professional should notify the appropriate local, state, and/or federal agency of the discovery if required by applicable regulations. Removal permits may be required for certain features (e.g., USTs, hydraulic lifts).
4. Mark the location on a site map and take photographs if possible.

If potentially contaminated soil is co-located with the drums, tank and/or pipes, then the procedures identified in Section 3.3.1 with respect to the potentially contaminated soil should be implemented.

### 3.3.1 Buried Drum Removal

Following the procedures listed above, buried drums and their contents shall be safely removed from the excavation. The drums and contents should be placed in a sealed bin or bermed area that is covered with Visqueen or other material to prevent discharge to soil or the atmosphere. Drum contents shall be characterized by the Environmental Professional in accordance with hazardous waste laws and regulations and profiled for off-site disposal as required by the disposal facility. Following characterization, drums and contents shall be transported off-site for disposal at an authorized facility in accordance with applicable laws and regulations.

### 3.3.2 Tank and/or Pipeline Removal

If USTs and/or associated piping systems (or other subsurface features requiring removal under permit) are discovered during grading and excavation activities, removal shall be performed under appropriate permits and agency oversight. Collection of soil samples are likely to be required, and the contractor performing the removal shall prepare or provide the Environmental Professional with appropriate information with which to prepare a UST removal report. Materials such as piping that may contain asbestos should be evaluated/sampled for potential waste characterization and disposal requirements.

If other features are discovered that do not require permit or agency oversight for removal (e.g., hydraulic lifts, piping not associated with a UST, vaults, or sumps), Section 3.2 should be implemented as needed.

### 3.3.3 Wells

Several groundwater wells were installed at the site over the years to a maximum total depth of approximately 150 feet bgs as part of the East Hynes environmental investigations. Select wells have been proposed for abandonment and/or relocation in a separate plan. The approximate pre-demolition and future locations of wells are depicted on Figures 2 and 3, respectively.

Existing wells associated with monitoring and remediation activities for the East Hynes facility are to be protected in place by the Contractor and other site contractors using best practices during redevelopment activities. Depending on the location of the well, protection of wells may consist of T-bar fence posts and high visibility safety fencing, bollards, and/or other barriers to prevent damage to the wells. The Contractor should notify the Environmental Professional immediately if wells are damaged during earthwork activities.

In the event that a known well, or another previously unknown and unabandoned well, is encountered during earthwork activities at the site, it shall be appropriately abandoned in accordance with the California Department of Water Resources, Bulletins 74-81 and 74-91, California Well Standards under the applicable permit from Los Angeles County Department of Environmental Health.

## 3.4 Spills

In the event of a release of equipment fuel or other chemical, the Contractor will take the following actions:

***Immediately Clean-up the Spill to the Extent Possible***

- If possible and appropriate for the situation, place containers under leaking equipment or damaged equipment or containers on secondary containment.

- Spills onto hard surfaces can be cleaned up by applying sorbent cloths or quick-dry material to the spill and subsequently containerizing the sorbent material in a rain-proof container, such as a 55-gallon drum.
- Spills onto soil can be cleaned up by excavating impacted soils and placing them into rain-proof containers, by creating a bermed, plastic-lined area to contain the impacted soils, or by using bulk waste management containers such as lined roll off bins.

***Report the Spill***

- As soon as possible, following the initial clean-up (see below), contact the individuals identified in Attachment 1 to report the spill. In addition, the Environmental Professional(s) after consultation with the Responsible Entity or Contractor (as appropriate) should notify the appropriate local, state, and/or federal agencies of the spill if required by applicable laws or regulations.

***Document the Spill***

- Once initial spill response has been conducted, complete the Spill Reporting Form included as Appendix C and provide copies of the completed form to the individuals identified in Appendix A. If possible, take photographs of the spill, spill area, and/or spill response activities.

***Final Reporting***

- Following clean-up of the spill, the Environmental Professional will, if and as required by local, state, and federal regulations, report the results of clean-up activities to the appropriate agencies.

***Obtain Approval Before Resuming Work***

- Approval should be obtained from the Environmental Professional before resuming work within the potentially affected area of the site.

## 3.5 Procedures for Groundwater Inspection and Reporting

Shallow groundwater at the site is expected to be a minimum of 20 feet bgs and is not expected to be encountered during earthwork activities at the site. If groundwater is encountered, the contractor will ensure that appropriate mitigation steps are taken to protect worker health and safety before proceeding further. Mitigation may be as simple as confirming that workers are not in direct contact with groundwater through the use of appropriate PPE.

Based on previous groundwater investigations (see Section 1.5), groundwater encountered at the site should be considered contaminated with petroleum hydrocarbons and/or VOCs, even if free product and chemical odors are absent.

Groundwater and soil in the immediate proximity (see Section 3.2) will be evaluated for potential impacts via field observations such as the following:

- *Presence of Free Product*. Free product is defined as a petroleum product (e.g., oil) or chemical in its natural state, un-mixed with water. Free product is often identifiable by the presence of an oily substance or the presence of an oily sheen on top of water.
- *Presence of Chemical Odor.* Any petroleum or other chemical odor should be noted regardless of whether a visible sign of oil or staining is encountered.

Groundwater may be pumped from the site into appropriate containers for permitted discharge or off-site transport for disposal (Section 3.7).

Groundwater will not be discharged to the land surface or subsurface of the site. The Contractor will be responsible for characterization of groundwater for disposal purposes.

The procedures for notification and reporting of impacted groundwater are the same as those prescribed for soil, as detailed in Section 3.2.

## 3.6 Notification of Discovery

If determined to be required and/or necessary and at the request of and on behalf of the Contractor, the Environmental Professional(s) will make the appropriate notifications and report environmental findings to relevant agencies. Examples of such reportable findings may include discovery of significant impacts, free product, USTs, drums, or other subsurface features indicative of a known or potential release to the subsurface.

### 3.6.1 Storm Water Runoff

Management of storm water will be governed by the SWPPP for the project prepared by the Contractor.

Storm water that collects on the ground surface or in trenches/excavations at the site is not considered groundwater. However, storm water at the site that contacts impacted soil (e.g., accumulation or ponding on impacted soil as defined in Section 3.2), contacts groundwater (e.g., accumulate or pond on in excavation containing groundwater), has an odor, has a sheen, or contacts free product (identifiable by the presence of an oily substance or the presence of an oily sheen on top of water), cannot be discharged to the land surface or subsurface of the site.

## 3.7 Off-Site Disposal

Should the presence of impacted soil as described above be identified, soil that will be removed from the site for off-site disposal will be characterized using appropriate methods (i.e., USEPA SW846, Hazardous Waste Test Methods) prior to transportation off-site. Soil samples representative of the volume to be transported off-site will be collected in-situ and/or from stockpiles or containers and characterized using an analytical program developed in consideration of off-site disposal facility or third-party acceptance requirements, and the California Department of Toxic Substances Control's (DTSC's) Information Advisory on Clean Imported Fill Material (Appendix D) or analogous guidance acceptable to the Environmental Professional. The soil to be removed from the site will be approved by the disposal facility or third-party waste management contractor prior to being removed from the site.

All collected water to be removed from the site, including excavation dewatering, storm water and vehicle wash water will be handled, and if necessary, transported and disposed in accordance with applicable local, state and federal regulations. Although not expected, if encountered, impacted groundwater may be stored on-site temporarily pending characterization and disposal via transport to an off-site disposal facility, or via permitted discharge. Discharge to the sanitary sewer system is typically subject to the requirements of the local permitting authority, and depending on available characterization data, the agency may require additional sampling, on-site pre-treatment, and/or specify other limitations or conditions.

The Contractor, on behalf of the owner, will arrange for transportation of all wastes off-site using a permitted, licensed, and insured transportation company, and will be responsible for tracking final soil dispositions at appropriate disposal facilities. The Contractor must obtain approval from the site owner when identifying a potential disposal facility. Any soil considered State of California (non-Resource Conservation and Recovery Act [RCRA]) or Federal (RCRA) hazardous waste (collectively, hazardous waste) will be tracked using the Uniform Hazardous Waste Manifest System (USEPA Form 8700-22), as applicable. An appropriate USEPA Generator Identification Number will be recorded on the hazardous waste manifests used to document transport of hazardous waste off-site. The hazardous waste transporter, disposal facility, and U.S. Department of Transportation (DOT) waste description

required for each manifest will be determined on a case-by-case basis. Soil not considered hazardous waste may be tracked using non-hazardous bills of lading. These two systems will be used to comply with appropriate state and local requirements.

The Contractor will be responsible for accurate completion of the hazardous waste manifests and non-hazardous bills of lading. Records of all wastes shipped off-site, including manifests and bills of lading, will be maintained by the Contractor and will be provided to the Environmental Professional within a reasonable time, as they are generated.

## 3.8 Criteria for On-Site Soil Reuse

Soil on-site may be moved within site boundaries, and reused without need for sampling, provided the soil is not obviously impacted (e.g., based on visual or olfactory observations noted above), is not generated in close proximity (i.e., within 20 feet) of impacted areas, if identified, or if previously collected data is available to sufficiently characterize the soil as acceptable in accordance with the following evaluation procedures.

Unless evidence of impacts is noted during excavation activities, soil planned for excavation is expected to meet these criteria. If supplemental sampling is performed, soil will be characterized based on the DTSC import fill material guidance (or equivalent) and sample data will be compared to then-current regulatory screening criteria appropriate for the proposed area of reuse (e.g., commercial use criteria such as DTSC Screening Levels [SLs], USEPA Regional Screening Levels [RSLs], or San Francisco RWQCB (SFRWQCB) Environmental Screening Levels [ESLs]). Given the commercial nature of the site, soil that meets residential or commercial screening criteria may be reused without restriction. Because health risk-based screening criteria for arsenic are typically well below concentrations typically found in native soil in the vicinity of the site, the comparison criterion for arsenic will be 12 milligrams per kilogram (mg/kg), which is considered representative of typical Southern California background concentrations (Chernoff G, Bosan W, Oudiz D., 2008).

The Environmental Professional does not need to be consulted and informed in advance of reusing soil on-site unless it has been identified as potentially impacted as described in Section 3.2.

## 3.9 Import Fill

This sub-section addresses potential chemical contamination of imported soil to be used for fill purposes. The project geotechnical engineer will approve backfill for use based on an evaluation of geotechnical parameters for proposed import fill.

Evaluation of any imported fill soil for the presence of contaminants must be concluded prior to consideration for use at the site (e.g. as backfill for excavations or trenching, or for raising site elevations). Unless from a documented "clean" import fill source such as a quarry, import fill will be evaluated to confirm the absence of chemical contaminants in accordance with the DTSC Information Advisory on Clean Imported Fill Material (Appendix D) and/or other applicable guidance[3] and compared to appropriate screening criteria (e.g., DTSC SLs, USEPA RSLs, or SFRWQCB ESLs as noted above). As noted above, the comparison criterion for arsenic will be 12 mg/kg.

If the source location for the import fill cannot provide appropriate documentation acceptable to the Client, Contractor, and/or Environmental Professional (e.g., data demonstrating that the soil does not contain unacceptable concentrations of contaminants), evaluation of the material should be conducted

[3] The SFRWQCB reportedly planned to release a guidance document in 2021 that is analogous or otherwise similar to the DTSC 2001 guidance. At this time, new guidance is not available.

before it is transported and placed at the site. Information regarding import fill will be included in the completion summary or report prepared at the conclusion of the project (see Section 5).

In addition, no backfilling of an area containing potentially contaminated soil will be conducted without prior approval from the Environmental Professional.

## 3.10 Soil Management Documentation

Soil export, import, and reuse will be documented as part of the implementation of the SMP, including records to identify the source locations and destination of soil reused as part of the redevelopment activities.

The Contractor is responsible for compiling relevant information related to soil off-haul and off-site disposal in a clear, comprehensible format, including but not limited to dates of off-haul, destination, weight/volume/load information, and disposal documentation (bills of lading or manifests), and provide such information to the Environmental Professional for recordkeeping.

This information will be included in final completion report(s) prepared for the project (see Section 5).

# 4. DUST CONTROL PROCEDURES

Dust control will be implemented by the Contractor for the project. The primary objective of this section is to provide guidance, resources, and best management practices to prevent the generation of fugitive or airborne dust emissions at the site during construction activities.

## 4.1 Regulatory Framework

Generation of dust during earthwork operations will be managed by the Contractor in accordance with SCAQMD Rule 403 (Appendix E).

## 4.2 General Dust Control Methods

Potential sources of dust include demolition activities, mass excavation, construction traffic, site preparation and foundation work, trenching and utility construction activities, material stockpiling, and final site clean-up and grading activities.

Dust control measures will be implemented by the Contractor in accordance with applicable regulations. These control measures can be separated into routine procedures and corrective controls implemented in response to the exceedance of an action level (e.g., higher wind speeds, observations of visible fugitive dust, or complaints of excessive dust generation by off-site parties).

This section outlines general routine dust control procedures for the construction activities at the site. Corrective controls are discussed in Section 4.3. The Contractor may have additional requirements as part of its permits. The goal of the dust control procedures is no visible dust.

Dust control methods may include the following or equivalent measures:

- Wetting down areas (two times per day and more as-needed) around soil improvement operations, visibly dry disturbed soil surface areas, active storage piles, and visibly dry disturbed unpaved driveways, parking areas, and staging areas to minimize dust from becoming airborne. Watering may be increased during above average temperatures, when activity intensifies or wind speeds increase.
- Using tarpaulins or other effective covers to cover all trucks transporting soils, sand, and other loose material. Material should be wet prior to covering if needed.
- Covering stockpiles of excavated materials, backfill material, import material, gravel, sand, road base, and soil with polyethylene plastic sheeting, tarp, or other equivalent cover.
- Terminating excavation, grading, and other dust generating activities when wind speed exceeds an average sustained (i.e., over one 30-minute time weighted average [TWA] interval) 20 miles per hour.
- Using dust enclosures, dust curtains, plastic tarps, windbreaks, and dust collectors as necessary to control dust.
- Utilizing alternate work methods (for example, hand digging instead of using heavy equipment).
- Minimizing drop heights while loading soil transportation vehicles.
- Limiting the maximum on-site speed for vehicles to 5 miles per hour (mph) on unpaved site areas or 15 mph on paved surfaces of the site. Visible speed limit signs will be posted at entrances to the site.
- Loading trucks carrying excavated soil and other non-excavated material so that the material does not extend above the walls or back of the truck bed.
- Wet sweeping paved streets (or vacuuming with a high efficiency particulate air [HEPA] equipped filter), sidewalks, paths, and intersections where work is in progress at least once per day and at

the end-of-the workday during demolition, excavation, and dirt moving activities to reduce track-out and particulate emissions. The use of dry power sweeping is prohibited.

- Installing wheel washers, gravel pads, and/or tire shakers to clean the tires of all trucks and equipment leaving the site. In the case where wheel washers or other cleaning methods cannot be installed, tires or tracks and spoil trucks will be brushed off before they re-enter City streets to minimize deposition of dust-causing materials.
- Applying non-toxic soil stabilizers or hydroseeding inactive construction areas, including previously graded areas and/or soil stockpiles that are inactive for at least 7 calendar days.

Additional information regarding controlling visible dust emissions and required best available control technologies are provided in SCAQMD Rule 403 (see Appendix G). All contractors whose actions may result in disturbance of surface soils are responsible for complying with the requirements of Rule 403.

## 4.3 Plan Implementation and Corrective Actions

The goal of the dust control procedures is to achieve no visible dust during construction activities. The site specific measures focus on wind restrictions and best practices.

### 4.3.1 Wind Measurement

Wind direction and speed will be evaluated based on a contractor-provided, on-site weather station; a wind sock or flag located at the site; or per the nearest weather station with live wind reporting. Weather forecasting and reporting can be found on a website such as http://www.wunderground.com.

### 4.3.2 Suggested Action Levels and Corrective Actions

Table 1 provides a summary of potential best management practices (BMP) strategies for exceedance of 15 and 20 mph average wind speeds (as defined above, key measurements include wind speed in excess of 15 and 20 mph). Contractors may implement one or more BMPs, as most appropriate based on-site activities.

**Table 1: Suggested BMPs for Wind Speed Exceedances**

| Baseline Options | 15 mph* | 20 mph* |
|---|---|---|
| • Wheel washing, gravel pads, and/or tire shakers to clean the tires of all trucks and equipment leaving the site.<br>• Watering every 2 hours during active operations.<br>• Periodic sweeping of roads with a wet sweeper.<br>• In areas not expected to handle vehicular traffic, consider vegetative cover, stone cover, or temporary mulching.<br>• Re-spray areas and ensure that the application rate is proper. | • Increase watering frequency[4]<br>• Applying non-toxic chemical dust suppressants consistent with manufacturer's directions<br>• Implement erosion-control BMPs<br>• Use a minimum 12-inch free board or tarp for uncovered trucks | • Terminate excavation, grading and other construction activities<br>• Construction employees will park off-site<br>• Heavy equipment will be left on-site when not operating<br>• Reduce vehicle trips by minimizing equipment mobilization and demobilization |
| * measured as a 30-minute average. | | |

[4] State of California Department of Transportation. 2003. Construction Site Best Management Practice (BMP) Field Manual and Troubleshooting Guide. January.

### 4.3.3 Fugitive Dust

Fugitive dust migration from the site will be visually assessed by dust monitoring personnel and/or contractor personnel. If, during the course of the work, fugitive dust is observed migrating from the site, additional dust control measures will be implemented as described herein.

## 4.4 Dust Monitoring Recordkeeping

Observations and monitoring results may be recorded in a field log during the project. Information recorded in the field log may include:

- Contractor personnel and equipment on-site.
- Weather conditions, including wind direction and approximate speed (based on data from an on-site or nearby weather station).
- Dust generating activities conducted.
- Dust suppression measures implemented.
- Periods of strong winds or visible fugitive dust, if any, and additional dust suppression measures implemented.

# 5. COMPLETION REPORT

At the conclusion of grading/excavation activities, a completion report may be prepared, if deemed to be necessary and/or requested by the Client.

Utilizing information collected by the Environmental Professional as well as the Contractor, such a report will document the results of any supplemental sampling and characterization, field monitoring and visual observations made during earthwork, soil off-haul activities, off-site disposal locations, and other relevant information. In addition, the report would include a description of the location(s) of any impacted soil or subsurface features encountered, removal actions, actions taken to further characterize and mitigate impacts, confirmation soil sampling results (if any) and disposition of any excavated soil.

# 6. REFERENCES

AECOM. 2022. Conceptual Site Model. East Hynes Terminal, 5905 Paramount Boulevard, Long Beach, California. June 30.

AECOM. 2022. Annual 2021 Groundwater Monitoring Report. East Hynes Terminal, 5905 Paramount Boulevard, Long Beach, California. January 14.

AECOM. 2021. Deep Groundwater Investigation Workplan. East Hynes Terminal, 5905 Paramount Boulevard, Long Beach, California. July 31.

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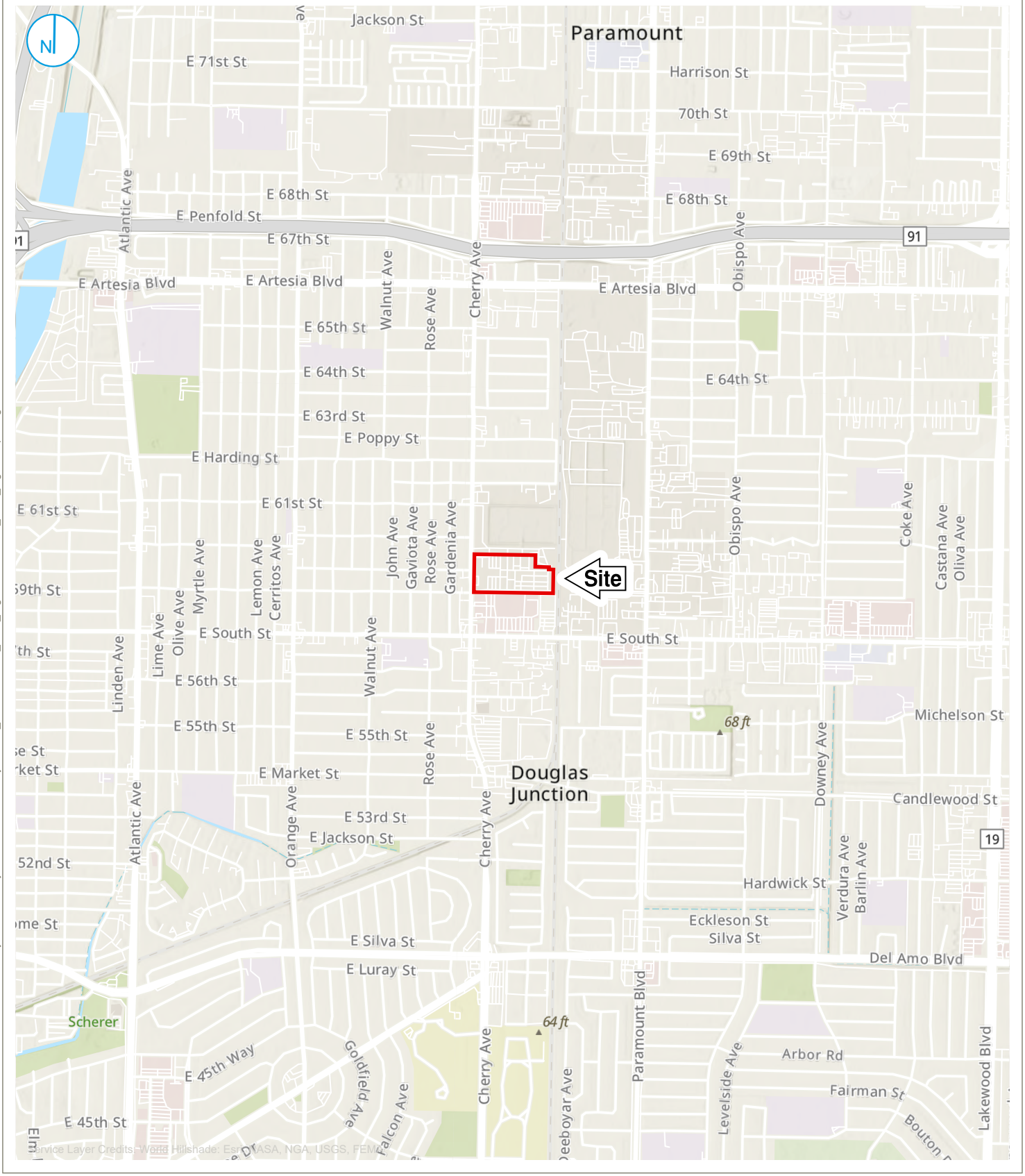
Bradford, et al. 1996. Background Concentrations of Trace and Major Elements in California Soils. Kearney Foundation of Soil Science, University of California. March.

Chernoff G, Bosan W, Oudiz D. 2008. Determination of a Southern California Regional Background Arsenic Concentration in Soil.

Montgomery Watson. 1993. Site Characterization, Final Report, Four Corners Pipe Line Company, East/West Hynes Tank Farms, Long Beach, California. September.

Ramboll US Consulting, Inc. (Ramboll). 2022. Phase I Environmental Site Assessment, 5900 Cherry Ave Industrial Redevelopment, 5900 Cherry Avenue, Long Beach, California. January.

# FIGURES




C:\Users\CWILLIAMSFREIER\Ramboll\Melody Kneale - Projects\Link\5900 Cherry Ave\03_GIS\20221007_SMP_Figures\20221007_SMP_Figures.aprx\Figure 01 - Site Location



KEY MAP

Site Boundary

Map Scale: 1:1:24,000;
Map Center: 118°9'59"W 33°51'45"N

0 1,000 2,000 Feet

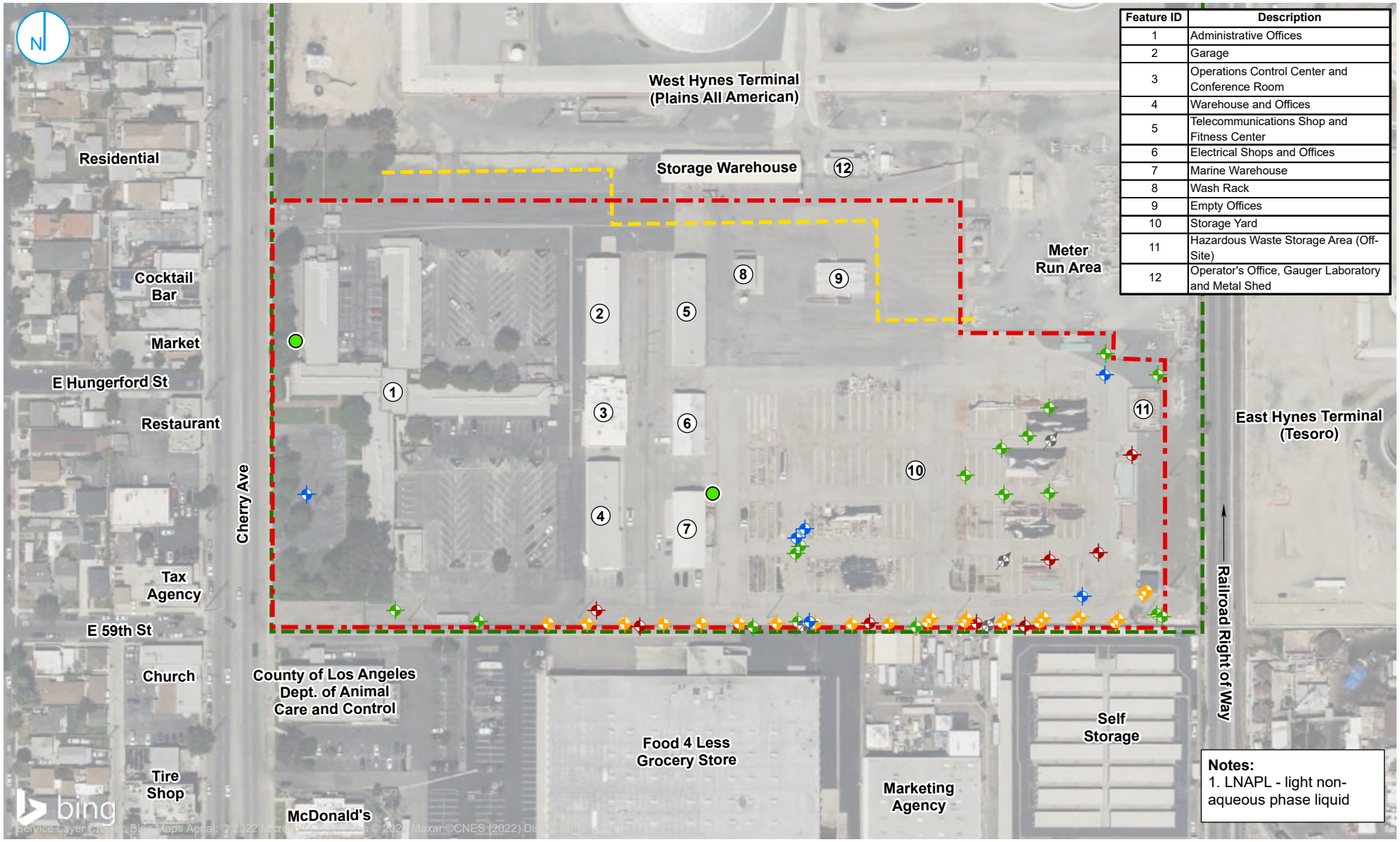
## SITE LOCATION

5910 Cherry Avenue
Long Beach, California

## FIGURE 01

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL




| Feature ID | Description |
|---|---|
| 1 | Administrative Offices |
| 2 | Garage |
| 3 | Operations Control Center and Conference Room |
| 4 | Warehouse and Offices |
| 5 | Telecommunications Shop and Fitness Center |
| 6 | Electrical Shops and Offices |
| 7 | Marine Warehouse |
| 8 | Wash Rack |
| 9 | Empty Offices |
| 10 | Storage Yard |
| 11 | Hazardous Waste Storage Area (Off-Site) |
| 12 | Operator's Office, Gauger Laboratory and Metal Shed |

**Notes:**
1. LNAPL - light non-aqueous phase liquid

- Site Boundary
- West Hynes Terminal Boundary
- (1) Site Feature
- Abandoned Underground Pipeline
- 2008 Soil Vapor Probe Location
- Existing Gaspur Aquifer Monitoring Well
- Existing Semi-Perched Aquifer Monitoring Well
- LNAPL Recovery Well
- Biosparging Well
- Inactive Vapor Extraction Well

0 90 180 Feet

# PRE-DEMOLITION SITE LAYOUT

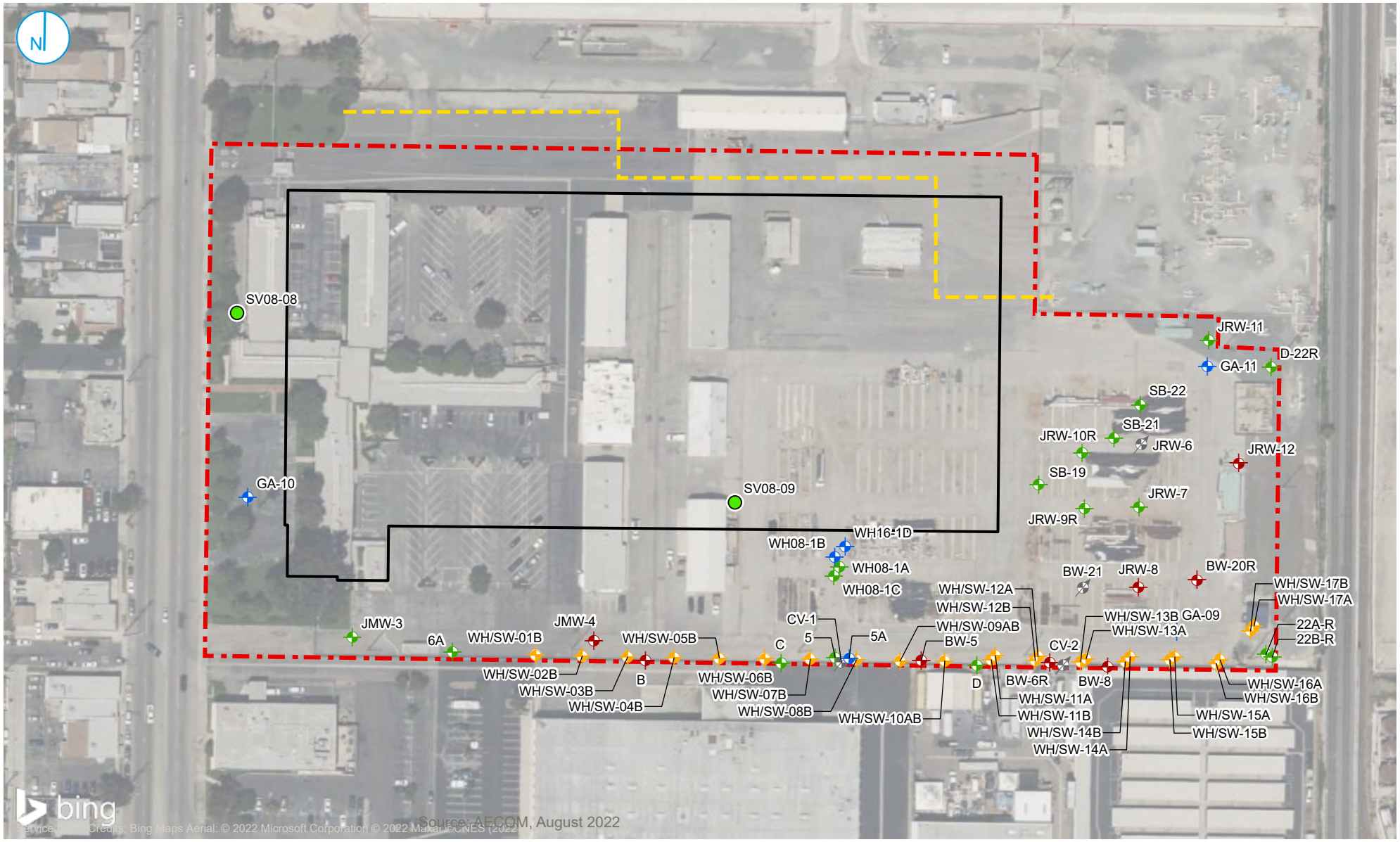
5910 Cherry Avenue
Long Beach, California

# FIGURE 02

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL

C:\Users\CWILLIAMSFREIER\Ramboll\Melody Kneale - Projects\Link\5900 Cherry Ave\03_GIS\20221007_SMP_Figures\20221007_SMP_Figures.aprx\Figure 03 - Future Building Layout and Well Location Map




PROJECT: 1690020148 | DATED: 11/3/2022 | DESIGNER: CWILLIAMSFREIER

Site Boundary
Proposed Building Outline
Abandoned Underground Pipeline

Existing Gaspur Aquifer Monitoring Well
Existing Semi-Perched Aquifer Monitoring Well
LNAPL Recovery Well
Biosparging Well
Inactive Vapor Extraction Well
2008 Soil Vapor Probe Location

0 75 150 Feet

# FUTURE BUILDING LAYOUT AND WELL LOCATION MAP

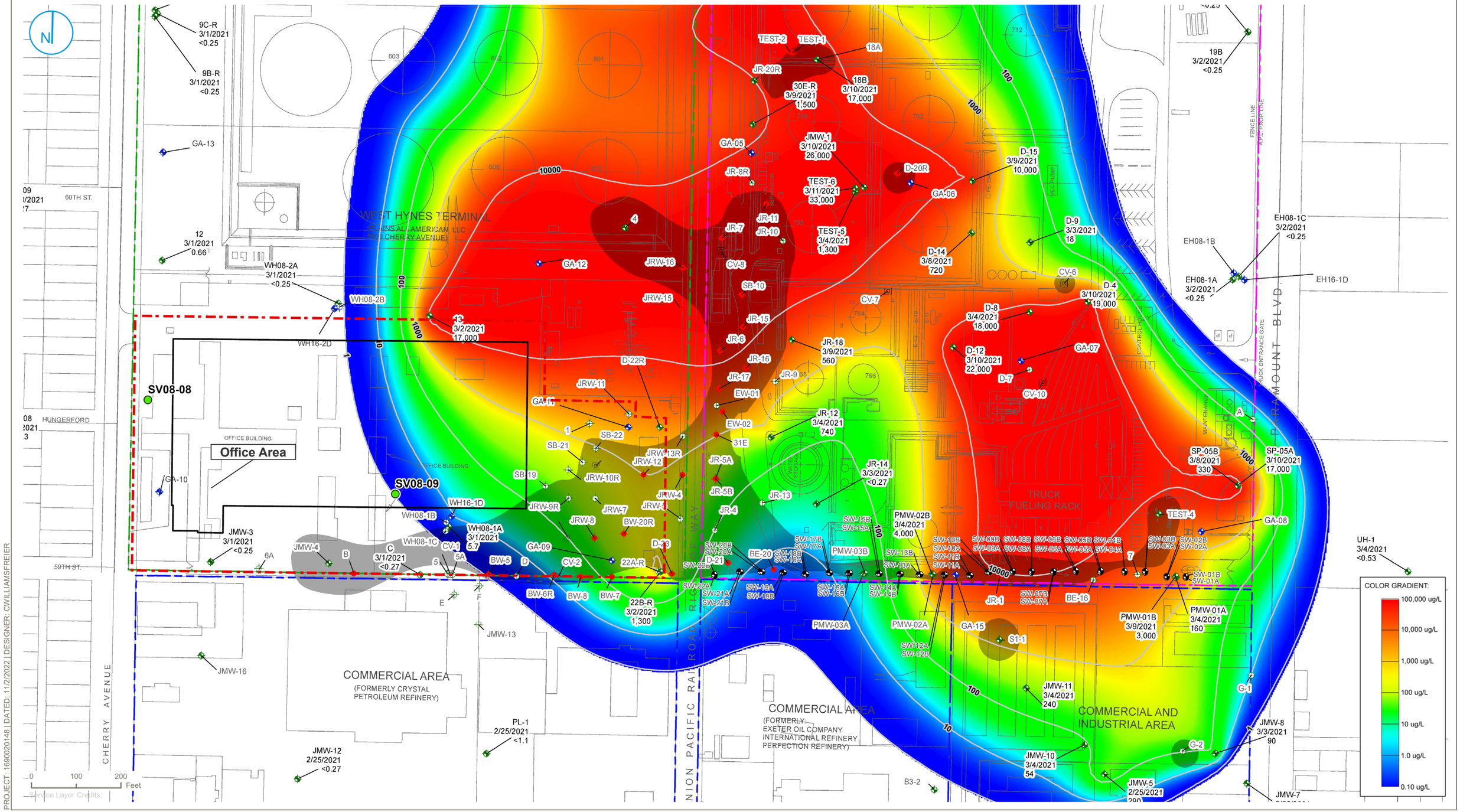
5910 Cherry Avenue
Long Beach, California

# FIGURE 03

RAMBOLL US CONSULTING, INC.
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RAMBOLL

C:\Users\CWILLIAMSFREIER\Ramboll\Melody Kneale - Projects\Link\5900 Cherry Ave\03_GIS\20221007_SMP_Figures\Source\Figure 04 - Isoconcentration Map, Benzene in Groundwater, Semi-Perched Aquifer.pptx




COLOR GRADIENT:
- 100,000 ug/L
- 10,000 ug/L
- 1,000 ug/L
- 100 ug/L
- 10 ug/L
- 1.0 ug/L
- 0.10 ug/L

**LEGEND**

- WELL ID / SAMPLING DATE / ANALYTE / CONCENTRATION (µg/L)
- LNAPL RECOVERY WELL
- EXISTING GASPUR GROUNDWATER MONITORING WELL (USED FOR GAUGING)
- EXISTING GASPUR GROUNDWATER MONITORING WELL (USED FOR ANNUAL SAMPLING)
- PLANNED GASPUR GROUNDWATER MONITORING WELL
- EXISTING SEMI-PERCHED GROUNDWATER MONITORING WELL (USED FOR GAUGING)
- EXISTING SEMI-PERCHED GROUNDWATER MONITORING WELL (USED FOR ANNUAL SAMPLING)
- PLANNED SEMI-PERCHED GROUNDWATER MONITORING WELL
- SPARGE WELL
- INACTIVE SOIL VAPOR EXTRACTION WELL
- ISOCONCENTRATION CONTOUR (µg/L)
- EXTENT OF EAST HYNES TERMINAL PROPERTY OWNED BY TESORO
- EXTENT OF WEST HYNES TERMINAL OWNED BY PLAINS ALL AMERICAN
- EXTENT OF PROPERTY OWNED BY OTHERS
- EXTENT OF LINK LOGISTICS SITE BOUNDARY
- PROPOSED BUILDING FOOTPRINT
- LNAPL EXTENT BASED ON LNAPL THICKNESS GREATER THAN 0.1 FEET OBSERVED IN WELLS GAUGED DURING AUGUST/SEPTEMBER 2020 SITE-WIDE GAUGING EVENT

NOTE:
SHOWING CONTOURS FOR BENZENE >=1.0 µg/L.

ABBREVIATIONS:
µg/L MICROGRAMS PER LITER
BGS BELOW GROUND SURFACE
LNAPL LIGHT, NON-AQUEOUS PHASE LIQUID
MSL MEAN SEA LEVEL
2008 SOIL VAPOR PROBE LOCATION

SOURCES:
2022 GROUNDWATER MONITORING REPORT, AECOM
2008 SOIL VAPOR ASSESSMENT ACTIVITIES, EAST AND WEST HYNES PROPERTIES, ENSR

# ISOCONCENTRATION MAP, BENZENE IN GROUNDWATER, SEMI-PERCHED AQUIFER

5910 Cherry Avenue
Long Beach, California

# FIGURE 04

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

# APPENDIX A
# CONTACT INFORMATION FOR NOTIFICATION

## NOTIFICATION INFORMATION

| Name/Role | Contact Details |
|---|---|
| **Owner Representative**<br>Yemi Alade, Assistant Vice President, Development | O: (949) 344-2194<br>C: (949) 466-8979<br>YAlade@linklogistics.com |
| **General Contractor**<br>Oltmans Construction Company | TBD |
| **Ramboll (Environmental Professional)**<br>Alexis Hillman, PG, CHG<br>Owner's environmental consultant | O: (213) 943-6352<br>C: (310) 600-4483<br>ahillman@ramboll.com |
| Farshad Razmdjoo<br>Owner's environmental consultant | O: (949) 798-3609<br>C: (949) 697-1418<br>frazmdjoo@ramboll.com |

# APPENDIX B
# FIELD REPORTING FORM

| **Field Reporting Form – Potentially Contaminated Soil and/or Groundwater** | | |
|---|---|---|
| **Name:** | **Date:** | **Time:** |
| **General Site Information** | | |
| Weather Conditions, Description of Field Activities, and Location (mark a copy of the attached site map and return with this form): | | |
| Have photographs been taken: YES/NO<br><br>If so, please email to Environmental Professional | | |
| **Soil Information** | | |
| Describe the potentially-impacted material (e.g. discoloration/staining, odor, oily sheen, presence of free flowing or floating oil/petroleum, serpentine-containing fill material, etc.) | | |
| Estimated Extent of Potentially-Impacted Soil (ft) (horizontal and vertical):<br>• Estimated horizontal extent (in feet):<br>• Estimated depth below ground surface (in feet): | | |
| **Mitigation Actions Taken** | | |
| Describe any actions that were taken to clean-up the potentially-impacted material, to isolate the material, or to mark the area of potential impacts. | | |
| **Groundwater and Surface Water Information** | | |
| If impacts were discovered while excavating, was water encountered? YES/NO<br><br>If groundwater was encountered, was any sheen or oil visible on the surface of the water? YES/NO | | |
| **Refer to Appendix A of the Soil Management Plan, and submit this form to the appropriate General Contractor at the Main construction trailer and to the Environmental Professional (Alexis Hillman, 213-943-6352, ahillman@ramboll.com).** | | |

# APPENDIX C
# SPILL REPORTING FORM

| **Spill Reporting Form** | | |
|---|---|---|
| **Name:** | **Date:** | **Time:** |
| **General Site Information** | | |
| Location (mark a copy of the attached site map and return with this form): | | |
| Have photographs been taken: YES/NO<br><br>If so, please email to Environmental Professional | | |
| **Spill Information** | | |
| What kind of material was spilled? | | |
| What is the estimated volume of material spilled (in gallons)? | | |
| Was the material spilled on a paved (asphalt/concrete) surface or on bare ground? | | |
| Did any of the spilled material enter stormwater or sewer drains, enter drainage ditches, or leave the site? | | |
| Estimated Extent of the spill-affected area:<br>• Estimated horizontal extent (in feet):<br>• Estimated depth below ground surface (in feet): | | |
| **Mitigation Actions Taken** | | |
| Describe any actions that were taken to clean-up the potentially-impacted material, to isolate the material, or to mark the area of potential impacts. | | |
| **Refer to Appendix A of the Soil Management Plan, and submit this form to the appropriate General Contractor at the Main construction trailer and to the Environmental Professional (Alexis Hillman, 213-943-6352, ahillman@ramboll.com).** | | |

# APPENDIX D
# DTSC'S INFORMATION ADVISORY ON CLEAN IMPORTED FILL MATERIAL

# Information Advisory
# Clean Imported Fill Material

October 2001

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

***It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.***

*State of California*

*California Environmental Protection Agency*

## Executive Summary

*This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed. It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.*

## Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

## Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contamination and/or appropriate for the proposed use, the use of that material as fill should be avoided.

## Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

## Potential Contaminants Based on the Fill Source Area

| Fill Source: | Target Compounds |
|---|---|
| Land near to an existing freeway | Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310) |
| Land near a mining area or rock quarry | Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH |
| Agricultural land | Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A) |
| Residential/acceptable commercial land | VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191) |

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

## Recommended Fill Material Sampling Schedule

| Area of Individual Borrow Area | Sampling Requirements |
|---|---|
| 2 acres or less | Minimum of 4 samples |
| 2 to 4 acres | Minimum of 1 sample every 1/2 acre |
| 4 to 10 acres | Minimum of 8 samples |
| Greater than 10 acres | Minimum of 8 locations with 4 subsamples per location |
| **Volume of Borrow Area Stockpile** | **Samples per Volume** |
| Up to 1,000 cubic yards | 1 sample per 250 cubic yards |
| 1,000 to 5,000 cubic yards | 4 samples for first 1000 cubic yards +1 sample per each additional 500 cubic yards |
| Greater than 5,000 cubic yards | 12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards |

terials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

### Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

## Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all compounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

*For further information, call Richard Coffman, Ph.D., R.G., at (818) 551-2175.*

# APPENDIX E
# SCAQMD RULE 403

(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

**RULE 403. FUGITIVE DUST**

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) $PM_{10}$ means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two $PM_{10}$ samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow $PM_{10}$ levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for $PM_{10}$ monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for $PM_{10}$.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for $PM_{10}$ pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | Guidance |
|---|---|---|
| Backfilling | 01-1 Stabilize backfill material when not actively handling; and<br>01-2 Stabilize backfill material during handling; and<br>01-3 Stabilize soil at completion of activity. | ✓ Mix backfill soil with water prior to moving<br>✓ Dedicate water truck or high capacity hose to backfilling equipment<br>✓ Empty loader bucket slowly so that no dust plumes are generated<br>✓ Minimize drop height from loader bucket |
| Clearing and grubbing | 02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and<br>02-2 Stabilize soil during clearing and grubbing activities; and<br>02-3 Stabilize soil immediately after clearing and grubbing activities. | ✓ Maintain live perennial vegetation where possible<br>✓ Apply water in sufficient quantity to prevent generation of dust plumes |
| Clearing forms | 03-1 Use water spray to clear forms; or<br>03-2 Use sweeping and water spray to clear forms; or<br>03-3 Use vacuum system to clear forms. | ✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements |
| Crushing | 04-1 Stabilize surface soils prior to operation of support equipment; and<br>04-2 Stabilize material after crushing. | ✓ Follow permit conditions for crushing equipment<br>✓ Pre-water material prior to loading into crusher<br>✓ Monitor crusher emissions opacity<br>✓ Apply water to crushed material to prevent dust plumes |

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | Guidance |
|---|---|---|
| Cut and fill | 05-1 Pre-water soils prior to cut and fill activities; and<br>05-2 Stabilize soil during and after cut and fill activities. | ✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration<br>✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts |
| Demolition – mechanical/manual | 06-1 Stabilize wind erodible surfaces to reduce dust; and<br>06-2 Stabilize surface soil where support equipment and vehicles will operate; and<br>06-3 Stabilize loose soil and demolition debris; and<br>06-4 Comply with AQMD Rule 1403. | ✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes |
| Disturbed soil | 07-1 Stabilize disturbed soil throughout the construction site; and<br>07-2 Stabilize disturbed soil between structures | ✓ Limit vehicular traffic and disturbances on soils where possible<br>✓ If interior block walls are planned, install as early as possible<br>✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes |
| Earth-moving activities | 08-1 Pre-apply water to depth of proposed cuts; and<br>08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and<br>08-3 Stabilize soils once earth-moving activities are complete. | ✓ Grade each project phase separately, timed to coincide with construction phase<br>✓ Upwind fencing can prevent material movement on site<br>✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes |

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | Guidance |
|---|---|---|
| Importing/exporting of bulk materials | 09-1 Stabilize material while loading to reduce fugitive dust emissions; and<br>09-2 Maintain at least six inches of freeboard on haul vehicles; and<br>09-3 Stabilize material while transporting to reduce fugitive dust emissions; and<br>09-4 Stabilize material while unloading to reduce fugitive dust emissions; and<br>09-5 Comply with Vehicle Code Section 23114. | ✓ Use tarps or other suitable enclosures on haul trucks<br>✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage<br>✓ Comply with track-out prevention/mitigation requirements<br>✓ Provide water while loading and unloading to reduce visible dust plumes |
| Landscaping | 10-1 Stabilize soils, materials, slopes | ✓ Apply water to materials to stabilize<br>✓ Maintain materials in a crusted condition<br>✓ Maintain effective cover over materials<br>✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes<br>✓ Hydroseed prior to rain season |
| Road shoulder maintenance | 11-1 Apply water to unpaved shoulders prior to clearing; and<br>11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance. | ✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs<br>✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs |

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | Guidance |
|---|---|---|
| Screening | 12-1 Pre-water material prior to screening; and<br>12-2 Limit fugitive dust emissions to opacity and plume length standards; and<br>12-3 Stabilize material immediately after screening. | ✓ Dedicate water truck or high capacity hose to screening operation<br>✓ Drop material through the screen slowly and minimize drop height<br>✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point |
| Staging areas | 13-1 Stabilize staging areas during use; and<br>13-2 Stabilize staging area soils at project completion. | ✓ Limit size of staging area<br>✓ Limit vehicle speeds to 15 miles per hour<br>✓ Limit number and size of staging area entrances/exists |
| Stockpiles/<br>Bulk Material<br>Handling | 14-1 Stabilize stockpiled materials.<br>14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage. | ✓ Add or remove material from the downwind portion of the storage pile<br>✓ Maintain storage piles to avoid steep sides or faces |

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | Guidance |
|---|---|---|
| Traffic areas for construction activities | 15-1 Stabilize all off-road traffic and parking areas; and<br>15-2 Stabilize all haul routes; and<br>15-3 Direct construction traffic over established haul routes. | ✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas<br>✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes |
| Trenching | 16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and<br>16-2 Stabilize soils at the completion of trenching activities. | ✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching<br>✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment |
| Truck loading | 17-1 Pre-water material prior to loading; and<br>17-2 Ensure that freeboard exceeds six inches (CVC 23114) | ✓ Empty loader bucket such that no visible dust plumes are created<br>✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading |
| Turf Overseeding | 18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and<br>18-2 Cover haul vehicles prior to exiting the site. | ✓ Haul waste material immediately off-site |

**TABLE 1**
**BEST AVAILABLE CONTROL MEASURES**
**(Applicable to All Construction Activity Sources)**

| Source Category | Control Measure | | Guidance |
|---|---|---|---|
| Unpaved roads/parking lots | 19-1 | Stabilize soils to meet the applicable performance standards; and | ✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements |
| | 19-2 | Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots. | |
| Vacant land | 20-1 | In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures. | |

## Table 2
## DUST CONTROL MEASURES FOR LARGE OPERATIONS

| FUGITIVE DUST SOURCE CATEGORY | | CONTROL ACTIONS |
|---|---|---|
| **Earth-moving (except construction cutting and filling areas, and mining operations)** | (1a) | Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR |
| | (1a-1) | For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction. |
| **Earth-moving: Construction fill areas:** | (1b) | Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations. |

**Table 2 (Continued)**

| FUGITIVE DUST SOURCE CATEGORY | CONTROL ACTIONS | |
|---|---|---|
| **Earth-moving: Construction cut areas and mining operations:** | (1c) | Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors. |
| **Disturbed surface areas (except completed grading areas)** | (2a/b) | Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area. |
| **Disturbed surface areas: Completed grading areas** | (2c) | Apply chemical stabilizers within five working days of grading completion; OR |
| | (2d) | Take actions (3a) or (3c) specified for inactive disturbed surface areas. |
| **Inactive disturbed surface areas** | (3a) | Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR |
| | (3b) | Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR |
| | (3c) | Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR |
| | (3d) | Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas. |

**Table 2 (Continued)**

| FUGITIVE DUST SOURCE CATEGORY | CONTROL ACTIONS | |
|---|---|---|
| **Unpaved Roads** | (4a) | Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR |
| | (4b) | Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR |
| | (4c) | Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface. |
| **Open storage piles** | (5a) | Apply chemical stabilizers; OR |
| | (5b) | Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR |
| | (5c) | Install temporary coverings; OR |
| | (5d) | Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities. |
| **All Categories** | (6a) | Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used. |

**TABLE 3**
**CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS**

| FUGITIVE DUST SOURCE CATEGORY | CONTROL MEASURES |
|---|---|
| **Earth-moving** | (1A) Cease all active operations; OR<br>(2A) Apply water to soil not more than 15 minutes prior to moving such soil. |
| **Disturbed surface areas** | (0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR<br>(1B) Apply chemical stabilizers prior to wind event; OR<br>(2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR<br>(3B) Take the actions specified in Table 2, Item (3c); OR<br>(4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas. |
| **Unpaved roads** | (1C) Apply chemical stabilizers prior to wind event; OR<br>(2C) Apply water twice per hour during active operation; OR<br>(3C) Stop all vehicular traffic. |
| **Open storage piles** | (1D) Apply water twice per hour; OR<br>(2D) Install temporary coverings. |
| **Paved road track-out** | (1E) Cover all haul vehicles; OR<br>(2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads. |
| **All Categories** | (1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used. |

## Table 4
## (Conservation Management Practices for Confined Animal Facilities)

| SOURCE CATEGORY | CONSERVATION MANAGEMENT PRACTICES |
|---|---|
| **Manure Handling**<br><br>**(Only applicable to Commercial Poultry Ranches)** | (1a) Cover manure prior to removing material off-site; AND<br>(1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND<br>(1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d).<br>(1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material. |
| **Feedstock Handling** | (2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins. |
| **Disturbed Surfaces** | (3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR<br>(3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR<br>(3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface. |
| **Unpaved Roads** | (4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR<br>(4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR<br>(4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface. |
| **Equipment Parking Areas** | (5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR<br>(5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches). |