SITE MANAGEMENT PLAN

TGRS Construction
Montrose Superfund Site
20201 S. Normandie Avenue
Los Angeles, California

December 2012

Prepared For:

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ACRONYMS AND ABBREVIATIONS

Abbreviation	Term
AECOM	AECOM Technical Services, Inc
AOC	Area of Contamination
BHC	Benzene Hexachloride
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
City	City of Los Angeles
County	County of Los Angeles
CQAP	Construction Quality Assurance Plan
DDT	Dichlorodiphenyltrichloroethane
DTSC	California Department of Toxic Substances Control
HASP	Health and Safety Plan
HDPE	High Density Polyethylene
HiPOx	High Pressure Oxidation (patented APT technology)
ISGSs	In-Situ Groundwater Standards
LGAC	Liquid-Phase Granular Activated Carbon
LADWP	Los Angeles Department of Water and Power
Montrose	Montrose Chemical Corporation of California
NPL	National Priority List
PID	Photo-ionization detector
PLC	Process logic controller
PPE	Personal protective equipment
ppmv	Parts per million per volume
ROD	Record of Decision
SCAQMD	South Coast Air Quality Management District
Site	Montrose Superfund Site
SMP	Site Management Plan
SOW	Statement of Work
TGRS	Torrance Groundwater Remediation System
TCLP	Toxicity Characteristic Leaching Procedure
UPRR	Union Pacific Railroad
USA	Underground Service Alert of Southern California
USEPA	United States Environmental Protection Agency
VGAC	Vapor-Phase Granular Activated Carbon
VOC	Volatile Organic Compound

1.0 INTRODUCTION

This Site Management Plan (SMP) was prepared for construction of the Torrance Groundwater Remediation System (TGRS) at the Montrose Superfund Site (Site) in Los Angeles, California (**Figure 1**). The Remedial Design of the TGRS was finalized in June 2012 (Geosyntec, 2012) and conditionally approved by the United States Environmental Protection Agency (USEPA) in September 2012 (USEPA, 2012b). *de maximis, inc.* (*de maximis*), on behalf of Montrose, submitted a letter to USEPA on December 11, 2012 that addresses the conditional approval requirements specified in the September 2012 letter (*de maximis*, 2012). A Partial Consent Decree for construction of the Dual Site Groundwater Operable Unit treatment system was executed by Montrose Chemical Corporation of California (Montrose), the USEPA, and the State of California in August 2012 (USEPA, 2012a). On behalf of Montrose, this SMP was prepared as required under Item 3.1(a) of the Statement of Work (SOW) included as Appendix B of the Partial Consent Decree.

This SMP describes how the project will be managed during construction of the TGRS and completion of the SOW. Specific aspects associated with the Site management were identified in the SOW and are described in this SMP. The roles and responsibilities of key project personnel are identified in Section 1.1, and the organization of the SMP is described in Section 1.2 below.

1.1 KEY PERSONNEL AND RESPONSIBILITIES

The key personnel and their responsibilities for managing the Site activities include the following:

USEPA and California Department of Toxic Substances Control (DTSC) – Responsible for regulatory oversight of TGRS construction activities and public participation program. USEPA is also expected to retain CH2M Hill as a technical consultant to oversee TGRS construction activities.

Montrose – Responsible party for the Montrose Superfund Site and responsible for implementation of TGRS construction activities required in the Partial Consent Decree.

de maximis, inc. – Is the Project Coordinator for Montrose during TGRS construction. Mr. Michael Palmer is the Project Coordinator and has been working on the Montrose Site since 1988. *de maximis*, as the client representative, will coordinate TGRS construction activities and facilitate communication on behalf of Montrose between the construction contractors and regulatory agencies. *de maximis* is also the Trustee for the Dual Site Trust (i.e., pre-funded construction budget).

AECOM Technical Services, Inc. (AECOM) – Will serve as the General or Prime Contractor for the TGRS construction. AECOM is one of the largest environmental engineering firms in the country and

have supported the Montrose Site activities since 1997. Mr. Brian Dean will serve as the Project Manager and has 24 years of experience in managing environmental construction and remediation projects. Mr. Kevin Thomas will serve as the Construction Manager and has 22 years of experience in supervising field operations and construction activities.

Subcontractors – Subcontractors have not yet been selected, but the names of subcontractors and their responsibilities for completing TGRS construction work will be provided upon selection, under separate cover. A number of subcontractors will be selected for the TGRS construction work including for earthwork, concrete/masonry, asphalting/resurfacing, fence, traffic control, surveying, inspections/certifications, mechanical, electrical, and process logic controller (PLC).

Geosyntec – Will serve as the Remedial Design Contractor and Engineer of Record and will review construction submittals and inspect certain completed tasks for conformance to design intent.

A project organization chart is provided in **Figure 5**. Additional information on the TGRS construction activities and responsibilities of key personnel can be found in the Construction Quality Assurance Plan (CQAP) and Health and Safety Plan (HASP) associated with this project.

1.2 ORGANIZATION OF THE SITE MANAGEMENT PLAN

This SMP is organized into the following 10 sections:

- Section 2: Site Information and Scope of Work
- Section 3: Access
- Section 4: Site Security
- Section 5: Ground Disturbance Protocols
- Section 6: Air Monitoring and Dust Controls
- Section 7: Noise Control
- Section 8: Contingency for Hazardous Materials
- Section 9: Waste Management
- Section 10: Reporting

Sections 2 through 4 describe the background, construction scope of work, access, and security for the Site. Section 5 addresses the process of clearing underground utilities and pipelines prior to commencing work. Sections 6 and 7 address the primary physical hazards associated with the construction SOW. Sections 8 and 9 describe contingency planning for hazardous material spills, if any, and waste management. Section 10 addresses construction data management and reporting requirements.

2.0 SITE INFORMATION AND SCOPE OF WORK

The Montrose Property is located at 20201 South Normandie Avenue in the City of Los Angeles, California (Figure 1). The Site is located within a portion of the City of Los Angeles identified as the Harbor Gateway, which extends from Western Avenue to Normandie Avenue. The City of Torrance is located west of the Harbor Gateway, and unincorporated Los Angeles County is located east of the Harbor Gateway.

The Montrose Property occupies approximately 13 acres and is bounded by the Union Pacific Railroad (UPRR) right-of-way and Normandie Avenue to the east, the Jones Chemical Inc. property and a right-of-way owned by the Los Angeles Department of Water and Power (LADWP) to the south, the GLJ Holdings property to the north, and Frito-Lay Sales, Inc. to the west. The Montrose Property and other surrounding properties are shown in **Figure 2**. The area east of the Property is occupied by manufacturing and commercial facilities. The area to the west is occupied by manufacturing and an oil refinery. Land uses south and southeast of the Property are mixed manufacturing, commercial, and residential zoning.

Currently, the Site is unoccupied, fenced, and covered with asphalt. Entrance to the Property is from Normandie Avenue through a locking gate located in the northeast corner of the Property. The on-Property features include three large, raised, asphalt building pads (constructed in 1985) and six temporary soil cells containing soil excavated from along the historical stormwater pathway in a portion of the residential neighborhood (i.e., Kenwood Avenue). Additionally, there is a storage container on-Site for storage of field equipment and supplies. Water service is available through a metered line located at the northeast corner of the Property at this time. Electrical and telephone services are not yet available at the Property. Surface water drainage is toward the southeast corner of the Montrose Property and the Normandie Avenue Ditch.

2.1 SITE BACKGROUND

Montrose manufactured technical grade dichlorodiphenyltrichloroethane (DDT) at the Property from 1947 until 1982. Montrose manufactured DDT by combining chlorobenzene and chloral in the presence of a powerful sulfuric acid catalyst (oleum). The Montrose plant produced as much as eighty million pounds of technical grade DDT annually. Montrose supplied technical grade DDT to, among others, the Department of Defense, United Nations, and the World Health Organization. In addition to the Montrose operations, Stauffer Chemical Company operated a small benzene hexachloride (BHC) plant on the

southeast corner of the Property from approximately 1954 until 1963 when the plant was dismantled and removed from the Site.

Montrose terminated its production process and completely ceased operating the plant in 1982. The plant was fully dismantled and demolished by early 1983. During 1984 and 1985, Montrose graded and covered the property with asphalt. The USEPA proposed the Site for the Superfund National Priorities List (NPL) in 1984, and the proposal was finalized in 1989.

Remedial investigations conducted at the Montrose Site have documented chemical impacts including chlorobenzene to the three upper water-bearing zones at the Site, which are the upper Bellflower Aquitard, the Bellflower Sand, and the Gage Aquifer (USEPA, 1998). A Record of Decision (ROD) for remediation of dissolved-phase chlorobenzene in groundwater was issued by USEPA in 1999 (USEPA, 1999). A number of groundwater pilot tests and studies were conducted over the last decade. Remedial design of the TGRS was completed in June 2012 and was subsequently approved by USEPA on September 20, 2012.

2.2 PROJECT SCOPE

The ROD specifies a remedial action that provides both contaminant and volume reduction of the chlorobenzene plume exceeding the In-Situ Groundwater Standards (ISGSs). The ROD also requires the prevention of adverse migration of contaminants laterally and vertically.

Containment of dissolved-phase volatile organic compounds (VOCs), including chlorobenzene, will be achieved by utilizing hydraulic extraction of groundwater from extraction wells to mitigate contaminant migration. The wellfield and relative pumping rates of the wells will be optimized to limit the lateral and vertical migration of contaminants and to maximize containment during remedial action. This optimization will be conducted in accordance with the requirements and provisions of the ROD.

Groundwater will be extracted from a series of wells, located primarily down the center of the dissolved-phase plumes, and conveyed to the Montrose Property for aboveground treatment using a combination of advanced oxidation, air stripping, and carbon adsorption. Treated groundwater will be conveyed from the Montrose Property to a series of wells, located primarily along the perimeter of the dissolved-phase plumes, for reinjection. Some of the extraction and injection wells were previously installed as part of field pilot testing activities. The remaining wells, underground conveyance pipelines, certain aboveground infrastructure, and groundwater treatment plant will be constructed under this SMP. The layout of the extraction and injection wells and pipelines is shown in **Figure 3**.

The TGRS construction SOW was provided in Appendix B of the Partial Consent Decree. A brief description of the six primary construction work tasks is provided in the following sections.

2.2.1 EXTRACTION WELL INSTALLATION

A series of extraction wells will be installed to extract groundwater from the dissolved chlorobenzene plumes in each of the three upper water-bearing zones. A total of 14 extraction wells are planned as shown in Figure 3. Previous construction activities completed during the investigation stage of the program involved the installation of six extraction wells. Therefore, the remaining eight extraction wells will be installed under this SMP and pursuant to the SOW including: two wells in the Upper Bellflower Aquitard, four wells in the Bellflower C Sand Aquifer, and two wells in the Gage Aquifer.

The installation phase will include drilling to the appropriate depth, disposing of the removed soils, placing the well casing, installing the filter pack and annular seal, placing the well cap, and developing and testing the extraction well. Following this installation and testing phase, drop pipes and submersible well pumps will be placed in the well casing. A concrete vault will be placed around the well head to provide protection and controlled access. Each well vault will be equipped with a float switch for level detection, a manual isolation valve and an automated flow control valve, and a leak detection sensor and valve to isolate the well from the rest of the extraction pipeline conveyance system, and electrical equipment for controlling the extraction pumps and monitoring pumping performance. The electrical equipment will be connected to instrumentation and controls, a meter, and a connection to a power supply.

2.2.2 INJECTION WELL INSTALLATION

A series of injection wells will be installed to inject the treated groundwater back into the aquifer systems. A total of eight injection wells are currently planned as shown in Figure 3. Previous construction activities completed during the investigation stage of the program resulted in the installation of five injection wells. Therefore, the remaining three injection wells will be installed under this SMP and pursuant to the SOW including: one well in the Bellflower C Sand Aquifer and two wells in the Gage Aquifer.

The installation phase will include drilling to the appropriate depth, disposing of the removed soils, placing the well casing, installing the filter pack and annular seal, placing the well cap, and developing and testing the injection well. Following this installation and testing phase, drop pipes will be placed in the well casing. A concrete vault will be placed around the well head to provide protection and controlled access. Each well vault will be equipped with a float switch for level detection, a manual isolation valve and an automated flow control valve, and a leak detection sensor and valve to isolate the well from the

rest of the injection pipeline conveyance system, and electrical equipment for controlling the extraction pumps and monitoring pumping performance. The electrical equipment will be connected to instrumentation and controls, a meter, and a connection to a power supply.

2.2.3 EXTRACTION PIPELINE INSTALLATION

The extraction pipelines will convey contaminated groundwater from the extraction wells to the treatment facility. Due to the highly developed land use of the area, a combination of trenching, directional drilling (if required), and a crossing under a pedestrian bridge will be used to route the pipes and electrical conduits between the wells and the treatment facility. Double-walled high density polyethylene (HDPE) pipes will be used for the extraction system as a leak prevention measure.

Installation of the extraction pipelines will involve trenching, directional drilling (if required), installing bridge crossings, assembling and installing the pipes, and installing the associated electrical wires, fiber optic cable, and conduits. Including separate piping for wells with high arsenic concentrations, approximately 13,000 linear feet of double-walled pipe will be installed under this SMP. The majority of the piping will be installed within approximately 10,000 linear feet of trenches located in City of Los Angeles and Los Angeles County streets. The existing asphalt and concrete overlying the trench area will be sawcut and removed. The excavated soil will be transported off-Site for disposal, placed back into the pipeline trench or pipe-jack trench, or re-compacted and used as fill material on the Montrose Property for construction of the main treatment facility. Sand will be placed in the trench as pipe bedding, and following installation of the piping and conduit, the trenched area will be repaved.

One section of the pipeline, including pipes and conduits, will cross under the Javelin Street pedestrian bridge. This element of the construction will involve installing brackets on the undersides of the bridges, placing steel casing, installing a valve vault on each side of the bridge, and placing the piping and conduits.

2.2.4 INJECTION PIPELINE INSTALLATION

The injection pipelines will convey treated water from the treatment facility on the Montrose Property to the injection wells. The treatment system effluent will be treated water, and therefore, single-walled HDPE pipes will be sufficient for the injection system piping. Due to the highly developed land use of the area, a combination of trenching, directional drilling (if required), and pipe crossings under a bridge will be used to route the pipes and electrical conduits between the wells and the treatment facility. The injection wells are expected to require periodic redevelopment to maintain injection capacities. In addition to the injection piping, development return piping will be installed adjacent to the injection water lines to convey redevelopment water back to the treatment plant.

Installation of the injection pipelines will involve trenching, directional drilling (if required), installing bridge crossings, assembling and installing the pipes, and installing the associated electrical wires and conduits. Including injection well redevelopment return piping, a total of approximately 24,000 linear feet of injection piping will be installed under this SMP. The majority of the piping will be installed within approximately 8,500 linear feet of trenches beneath the City of Los Angeles and Los Angeles County streets. The existing asphalt and concrete overlying the trench area will be sawcut and removed. The excavated soil and pavement will be transported off-Site for disposal, placed back into the pipeline trench or pipe-jack trench, or re-compacted and used as fill material on the Montrose Property for construction of the main treatment facility. Sand and gravel will be placed in the trench as pipe bedding, and following installation of the piping and conduit, the trenched area will be repaved.

One section of the pipeline will cross the Torrance Lateral Bridge at the intersection of Torrance Boulevard and Vermont Boulevard. This element of the construction will involve installing brackets on the undersides of the bridges, placing steel casing, installing a valve vault on each side of the bridge, and placing the piping.

The original TGRS design included an injection pipeline running through the 204th Street alley historically under the jurisdiction of the County of Los Angeles (the "County"). In March 2012, Montrose learned that the County had vacated the alley several years beforehand, and that residents adjacent to the alley had built patios, fences, and other encroachments into the alley. Rather than disturb the residents, Montrose evaluated alternative routes and is pursuing an easement agreement with Triton Diagnostics (a Shell subsidiary) to route the pipeline further to the north, parallel to the alley, through a large parcel of vacant land owned by Triton Diagnostics. Montrose and Triton Diagnostics are still negotiating the terms of an agreement, and at this time access appears promising. Montrose expects to soon finalize negotiations with Triton Diagnostics, and an executed easement agreement is anticipated sometime in the January 2013. Montrose has elected to proceed with the redesign of this portion of the treatment system. Montrose will submit a set of revised design drawings when this activity is complete.

2.2.5 PIPE JACKING

Pipe jacking will be used to place pipes under the UPRR railroad tracks in two locations, one on Normandie Avenue near Del Amo Boulevard and another near the treatment facility. This will involve excavating a thrust pit and a reception pit, constructing a thrust wall in the thrust pit, driving pipes through the soil with a hydraulic jack, connecting the pipes on each end, backfilling the pits, and compacting and repaving the disturbed area. The total length of pipe jacking will be approximately 300 feet.

2.2.6 TREATMENT FACILITY CONSTRUCTION

The purpose of the treatment facility is to remove groundwater contaminants from the Chlorobenzene Plume at or around the Montrose and Del Amo Superfund Sites, to the levels specified in the ROD. The treatment facility will be located on the Montrose Property. A Site Plan from the Remedial Design showing the treatment facility is provided as **Figure 4**.

Prior to any construction, the existing asphalt in the area of the treatment system will be removed from the Montrose Property and the foundation will be excavated. The plant Site will be surveyed and treatment facility bedding materials will be installed. The ground floor slab and truck ramp will then be constructed. A control building and fence will be installed at the plant Site. Treatment facility Site lighting, power drops, electrical conduits, and electrical wires will then be connected.

Treatment components will be installed on the floor slab. Currently, the major treatment components include the following:

- An advanced oxidation system ("HiPOx");
- An air stripper system consisting of three air strippers;
- A liquid-phase granular activated carbon ("LGAC") adsorber system;
- A vapor-phase granular activated carbon ("VGAC") adsorber system; and
- A post-treatment filtration system.

Several pumps, storage tanks, and other appurtenances required for operation of the TGRS will also be installed.

3.0 ACCESS

Construction of the TGRS requires access to several off-Property locations owned by private entities as well as public rights-of-way under the control of the City of Los Angeles ("City") and Los Angeles County. Montrose has already secured access to several off-Property locations, and is continuing efforts to secure access to the public rights-of-way and two remaining private property owners. Before starting construction, Montrose will make access agreements or other arrangements with all off-Property owners or public entities where TGRS infrastructure will be located. Montrose is currently preparing an update to USEPA that outlines the status and remaining access issues, which will be transmitted to USEPA under a separate cover on December 20, 2012.

Both on-Property and off-Property access to work areas will be required for the work completed under this SMP. Access to off-Property locations will require advance notification in accordance with the access agreement, permit, easement, or other arrangement associated with the property. Additional information on Site access is provided in the HASP, in Section 8.3 – Site Access Documentation.

3.1 CONSTRUCTION ACCESS

A mobile construction office trailer will be established at the Montrose Property as headquarters for TGRS construction activities. The Construction Manager will control access to the Property. Signs will be posted at the main gate directing all parties accessing the Property to the construction trailer. All employees and contractors will be required to sign in daily at the construction trailer. The daily sign in logs will be maintained as discussed in the Data Management section of this plan. All employees and contractors will be required to wear proper personal protective equipment (PPE), and will be required to read and sign the HASP. Before leaving the Site, all employees and contractors must sign out on the construction sign-in logs.

USEPA, DTSC, *de maximis*, City and County Inspectors, and Geosyntec will need to sign in at the construction trailer. Visitors must have prior approval from the Project Manager to enter the Site. USEPA, DTSC, *de maximis*, City and County Inspectors, Geosyntec, and any visitors shall not be permitted to enter the Site without first receiving Site-specific health and safety information from the Construction Manager. All visitors must be escorted at all times by an AECOM employee. Before leaving the Site, USEPA, DTSC, *de maximis*, City and County Inspectors, Geosyntec, and any visitors must sign out in the visitor's sign in log. Additional information on access to the Site can be found in Section 8.3.1 of the HASP.

While the TGRS construction activities are in progress, the Construction Manager and project staff will monitor the work areas for the presence of unauthorized persons. If unauthorized persons are observed by the field staff, staff will attempt to ascertain the reason the person(s) entered the work area, attempt to respond to questions the individual(s) may have, and recommend that the individual(s) leave the work area. If individuals refuse to leave the work area and insist upon entering areas where they may be injured, the Construction Manager will suspend affected construction activities and notify the Project Manager. If necessary, the Construction Manager will contact the local police to obtain assistance in clearing the work area.

3.1.1 TRAFFIC THROUGH MAIN ENTRANCE GATE

During TGRS construction, access will be directed through the only entrance to the Property. A steady flow of construction-related traffic at the Property entrance is expected. Traffic control measures will be employed to allow large equipment and support vehicles to ingress and egress safely at the Property entrance. For slow-moving or large construction equipment, flaggers and spotters will be used to control the flow of traffic along Normandie Avenue. Trucks and construction equipment will not be allowed to line up along Normandie Avenue at any time during the project. Vehicles entering the Property will have first priority over vehicles exiting the Property. There is also an active UPRR spur located across the Property entrance. There is no turn lane into the Montrose Property, and therefore, construction traffic will not be allowed to wait in Normandie Avenue for trains to pass.

3.1.2 CONSTRUCTION SIGNAGE

The Montrose Superfund Site has existing signage at the only entrance for the Property located next to the locking gate in the northeast corner of the Property. The main gate sign provides the name of the Site and a phone number to call for any questions or concerns about Site activities. However, additional construction-related signage will be posted at the Property and at any other off-Property locations as appropriate, including a sign with a toll free phone number for questions, inquiries, or complaints from the public. AECOM will provide the toll free phone number.

3.2 OFF-PROPERTY ACCESS

A portion of the groundwater treatment system construction will occur in off-Property areas, including well installation, trenching, and pipeline installation. Access to off-Property areas will require advance planning and notification in accordance with the associated agreements or other access arrangements. Each private property owners will be notified in writing (i.e., e-mail, fax, mailed letter) of the intent to access their property at least seven days in advance of field mobilization. Each private property owner

will also be contacted by telephone to verify that they have received written notification and to discuss any logistical or scheduling concerns.

The notification process for the City and County rights-of-way will be determined once access to these areas has been finalized (in progress). The AECOM Project Manager will advise *de maximis* of any access-related issues that arise during TGRS construction. *de maximis* will communicate any such issues to Montrose, USEPA, and the State of California. Similarly, USEPA and the State of California will be notified if Montrose is unable to secure access from the City of Los Angeles, Los Angeles County, and any private property owners who control land necessary to implement the TGRS.

Additionally, USEPA is expected to notify the surrounding residential community and commercial businesses through distribution of a mailer or Fact Sheet. USEPA is also expected to host a public meeting in advance of TGRS construction. Montrose will support USEPA with their public relations program and provide additional community notifications as required.

3.3 OTHER ACTIVITIES

Montrose prepared and submitted a letter to USEPA regarding the occurrence of arsenic in the vicinity of the Site. This letter was submitted to USEPA on November 12, 2012 (L&W, 2012b). Montrose will need concurrence on this letter by February 1, 2013.

Montrose prepared and submitted a letter to USEPA regarding the applicability of the Area of Contamination (AOC) policy. This letter was submitted to USEPA on March 6, 2012 (L&W, 2012a). A USEPA response to this letter is expected shortly. This plan assumes that the AOC policy as described in above-referenced letter to USEPA is acceptable.

Budget Management: *de maximis* as Trustee is responsible for processing all claim certificates in accordance with the requirements specified in the Trust Agreement as well as tracking the Trust budget. An annual valuation of the Trust will be conducted in accordance with the Trust Agreement.

Data Management: Any laboratory data collected as part of the implementation of the TGRS Construction, except that data collected as part of waste characterization, will be addressed in accordance with the Project Data Management Plan prepared by Hargis + Associates, Inc. in 2004 (H+A, 2004).

4.0 SITE SECURITY

Site security will be maintained at both on-Property and off-Property locations. Additional information on Site security is included as Section 8.4 – Site Security of the HASP. Prior to beginning the TGRS construction, the local office for the Los Angeles Police Department and the Los Angeles Fire Department will be notified of the construction activities. These departments will be supplied with the proposed start date, project duration, and emergency contact information for the Site.

4.1 ON-PROPERTY SECURITY

The Montrose Property is currently secured by a fence with a minimum height of eight feet around the entire Property perimeter. The fence is constructed of wrought-iron along the eastern property boundary adjacent to Normandie Avenue, brick wall along the western property boundary adjacent to neighboring Frito-Lay property, and chain-link along the remaining northern and southern property boundaries. The point of access for entry to, and exit from, the Property is a locked swing-gate adjacent to South Normandie Avenue located at the northeast corner of the Property. At the end of each work day, the swing-gate will be closed and locked to secure work areas and construction equipment within the Property perimeter.

As discussed in the previous section, all employees, contractors and visitors will be required to sign in at the construction trailer. While TGRS construction activities are in progress, the Construction Manager and project staff will monitor on-Property work areas for the presence of unauthorized personnel. No unauthorized personnel will be allowed on-Property, and all visitors will be accompanied by an AECOM employee.

4.1.1 SECURING ON-PROPERTY SOIL HANDLING/EXCAVATION AREAS

TGRS construction activities are expected to result in handling of both hazardous and non-hazardous soils. Non-hazardous soils are anticipated to be generated by off-Property trenching activities and will be transported to the Montrose Property for screening prior to backfilling. Hazardous DDT-impacted soils are anticipated to be generated during on-Property trenching and grading activities associated with the groundwater treatment plant and will be handled in accordance with the AOC policy. If both non-hazardous and hazardous soils are simultaneously handled at the Montrose Property, it will be important to effectively segregate and secure the two distinct work areas. Handling of DDT-impacted soils will require more rigorous engineering controls, dust control, and air monitoring. The work in the DDT-impacted soil exclusion zone will be completed in accordance with the HASP, specifically Sections 5.0 – Chemical Hazard Assessment, 7.0 – Personal Protective Equipment, and 8.0 – Site Control. The Property

will also be segregated to prevent soil handling activities from interfering with other construction activities. Additional information on waste handling is discussed in Section 10.0 – Waste Management of this SMP.

4.2 OFF-PROPERTY SECURITY

Off-Property work areas will be secured to prevent unauthorized entry and exposure to construction-related hazards. After each property owner or entity is notified of proposed work at these off-Property locations, the off-Property area will be assessed for any potential concerns with the SOW, including but not limited to non-construction vehicle traffic, and pedestrian traffic. Property owners will be contacted to discuss any potential security concerns regarding the property. At a minimum, delineation of work areas will utilize delineators, caution tape, barricades and/or fencing.

Each off-Property location in the public rights-of-way will have a traffic control plan generated to meet the specific needs of the location. The traffic control plans will be submitted for approval by the municipal agencies prior to the start of construction. The traffic control plans will provide work procedures for safely and effectively redirecting traffic around the TGRS construction activities. Efforts will be made to minimize disruptions to traffic, particularly during high traffic time. In addition to the traffic control plan, additional measures may be taken to control pedestrian traffic. These additional measures may include but are not limited to enclosing the work area within a fence or barricading.

For the drilling activities, traffic control will be maintained continuously since some of the large equipment (i.e., drill rig) will not be able to be moved back to the Montrose Property at the end of each day. For the wells proposed in the right-of-way areas or other properties where all sides of the work area are not controlled for access, the work area will be enclosed by a sound dampening barrier and/or a fence with windscreen. Private security guards may be contracted to further secure these remote work areas as needed. Smaller and readily portable equipment will be locked in a construction trailer or properly secured otherwise to deter theft or vandalism.

For trenching activities, any open trenches will be barricaded or fenced off during working hours. During non-working hours, the trenches will be secured using trench plates and asphalt each night. Any smaller, easily portable equipment will be locked in a construction trailer or properly secured to deter theft or vandalism.

5.0 GROUND DISTURBANCE PROTOCOLS

Ground disturbance protocols will be used during TGRS construction activities to prevent unexpected contact with or damage to underground utilities. The Construction Manager will verify that the proposed dig or drill zones are adequately marked or staked prior to contacting Underground Service Alert of Southern California (USA). USA will be notified a minimum of 48 business hours in advance of ground disturbing activities, likely one to two weeks in advance to afford member companies the opportunity to mark their utility lines. However, due to the scope of this project, it will not be possible to clear underground utilities throughout the construction area during a single notification. Therefore, USA will be notified multiple times, as needed, to clear the entire TGRS construction project as well installation and trenching activities occur throughout the work area. USA will also be notified a minimum of 48 business hours in advance of Service Alert ticket expiration (i.e., each notification is valid over a limited duration). For any non-responding utility companies, USA will be contacted to request contact information for the non-responding utility company. AECOM will contact the non-responding utility company directly to obtain concurrence of no conflict with their line for the proposed SOW.

Prior to mobilizing to any off-Property location, AECOM will additionally perform an assessment of the specific areas to clear for drilling and trenching activities. Available records and/or maps of the area will be reviewed to determine the location and existence of underground pipelines and utilities in the vicinity, including the Remedial Design drawings. The majority of underground utilities, pipe sizes, and depths were identified during Remedial Design activities. The presence or absence of many underground utilities was verified through potholing. Private property owners will also be contacted to discuss how underground pipelines and utilities have been situated on their property, to the best of their knowledge and records.

AECOM will assess the area after contacting the USA contacts to verify that all visible company markers and surface features have been accounted for and delineated. If these surface features have not been delineated, then a private utility or pipeline locator company will be contracted to ensure that all surface features have been accounted for to the extent possible. Copies of the USA information and assessments for clearing the well installation and trenching locations will be kept on file in the construction trailer and at the AECOM office.

5.1 DRILLING

Prior to commencing installation of the injection and extraction wells, the location will be cleared by hand augering after the USA contacts have confirmed no conflict with their underground utilities. Due to the limitations of depth for ground penetrating radar, hand augur boreholes will be completed to depths

between 5 and 15 feet below ground surface. The hand auger locations will be situated along the outer edge of the extent of the largest borehole to be drilled for that location, and in a configuration that will encounter any buried pipe in that location. Typically for hollow stem auger wells, three hand auger locations will be required. For the wells completed using mud rotary drilling techniques, a minimum of five hand auger locations will be required. Once a visual inspection is completed of each hand auger location and no evidence of buried pipelines and utilities (i.e., edge of metallic pipes, tracing wire, pipe bedding sand, concrete encasements, any colored concrete, etc.) is found, drilling will commence.

5.2 TRENCHING

For trenching activities, various buried pipelines and utilities will be encountered and exposed while the pipeline installation is completed. A backhoe will be used to excavate the trenches. However, excavating will be completed by shoveling (or other non-mechanized tools) by hand within 18-inches of any known buried pipeline or utility. All buried lines are to be protected and supported (if needed) while the excavation is exposed. Similarly, hand compaction equipment will be used during backfilling around underground utilities.

During trenching activities, there will be locations that exceed a depth where excavation and pipeline installation will not be completed without a shoring system in place. Specific details on a shoring system place are described in Section 4.2 – Site Specific Safety Training and Attachment A of the HASP.

In addition to the precautions taken for encountering lines, some utility and pipeline companies require that there representative be on-Site while their company's buried line is exposed. Generally, these companies want to verify that the line is not damaged in any manner during trenching and backfilling activities. The topic of exposing buried lines will be discussed with the utility and pipeline companies at the initial USA meeting, and as each section of the proposed trench is cleared for excavation.

5.3 CONTINGENCY PLANNING FOR DAMAGED LINES

In the event that a utility or pipeline is damaged or suspected of being damaged by construction activities, the appropriate authorities will be contacted in the following order:

- If the damage results in an immediate or potentially dangerous condition, 9-1-1 will be called, prompting the City or County of Los Angeles Fire Department and/or Police Department to respond. This includes damage to high pressure water lines, electrical lines, natural gas lines, and petroleum product lines;
- The agency or company responsible for the line will be contacted;

- The AECOM Construction Manager will notify the AECOM Project Manager;
- The AECOM Project Manager will notify additional parties in accordance with Section 10 of the HASP, including AECOM Safety Professionals, *de maximis*, and Montrose; and
- USEPA and DTSC will additionally be notified, either by AECOM, *de maximis*, or Montrose.

6.0 AIR MONITORING AND DUST CONTROL

TGRS construction activities have the potential to generate fugitive dust emissions. The South Coast Air Quality Management District (SCAQMD) Rule 403 addresses the prevention, reduction, and mitigation of fugitive dust emissions entrained in the ambient air as a result of man-made sources (i.e., excavation, grading, loading, soil screening, backfilling, and transportation of soils). Several elements of SCAQMD Rule 403, such as protocols for mitigation of potential fugitive dust emissions, have been incorporated into the HASP (specifically Section 5.5.2 – Air Monitoring Action Levels). The best available control measures will be used to control dust concentrations to below action levels during the TGRS construction.

However, notification of SCAQMD is required only for large operations (disturbing more than 100 acres or moving more than 10,000 cubic yards per day). Therefore, no notification or filing of a Fugitive Dust Emission Control Plan is required due to project size.

6.1 ON-PROPERTY DUST CONTROL

Several activities will take place at the Montrose Property that could potentially generate dust. These activities include excavation, grading, loading/unloading, soil screening, backfilling, well installation, and transportation of soils. Before any soil handling procedures begin on-Property, a windscreen will be placed along the eastern property boundary fence to minimize the airborne dusts leaving the Property in the typical downwind direction. If needed, additional windscreen will be installed on other portions of the property fence boundary fence.

Shallow on-Property soils are expected to be impacted with varying levels of DDT (but not VOCs). Extensive dust control procedures will be used to prevent uncontrolled migration of DDT-impacted dust during TGRS construction activities. Dust control procedures will include, but will not be limited to, the following:

- Water as a dust suppressant. The water will be available via a water truck or a metered discharge from a hydrant on Site. Dust generation will be controlled by spraying water on the soil prior to beginning activities each day, as need throughout the day, and at the end of the day.
- Only handle soils during low wind conditions. No loading during high wind conditions.
- Keep the soil piles covered at all times when not in use and limiting the amount of soil uncovered during loading.
- Manage soil piles to avoid steep sides or faces and minimize number of soil movements.
- Limit size of work area.
- Limit vehicular traffic and disturbances within work area.
- Load soil from the upwind side of the soil pile (i.e. west side if wind direction is easterly) or side farthest from the property line.

- Inspect loaded trucks for the presence of loose soil on truck bodies or on undercarriage. Decontaminate trucks prior to transport using dry methods (i.e. broom or brush).
- Maintain a minimum track out distance of 25 feet from the main work areas.
- Ensure a minimum 6-inch freeboard above the soil level in a truck trailer or roll off bin.
- Cover truck trailers containing soil with tarps or other appropriate covers prior to transporting soils.
- Limit vehicle speeds to 5 miles per hour (mph) or less on Site.
- Limit loader bucket speed so that no visible dust plumes are observed.
- Limit loader bucket drop height when loading truck trailers or bins.

The above procedures have been used in the past to successfully control dust levels during soil handling activities associated with the Montrose Site. However, if the above additional and contingent procedures are still not effective in reducing dust concentrations below action levels (which is highly unlikely) as discussed in Section 6.3 – Dust Monitoring (and Section 5.5.2 of the HASP), then soil handling activities will be temporarily suspended pending evaluation of alternate dust control methods.

6.2 OFF-PROPERTY DUST CONTROL

The construction activities at the off-Property locations that could potentially generate dust include trenching, soil loading/unloading, backfilling, and soil transportation. However, the off-Property soils are not expected to be impacted with DDT or VOCs. Consequently, the off-Property soils will pose significantly fewer hazards, limited primarily to nuisance particulates. Nonetheless, dust control procedures will be used to similarly prevent exposure to nuisance dust levels in the off-Property areas, particularly the public rights-of-way. The dust control procedures used in the off-Property areas will be identical to those listed in Section 6.1 above, except that soil will not be stockpiled off-Property. All soil excavated off-Property will be loaded directly into dump trucks for transportation to the Montrose Property for soil screening. Eliminating soil stockpiles substantially reduces the potential for dust generation in the off-Property areas. Temporary fence with windscreen will also be used as needed to control dust levels in the off-Property areas. Consistent with Section 6.1 above, soil handling activities will be temporarily suspended if dust control measures fail to limit concentrations below the project action levels as discussed in Section 6.3 below.

6.3 DUST MONITORING

Measurement of airborne dust action levels at locations is described in the HASP in Section 5.5.2 – Air Monitoring Action Levels. Handheld dust meters will be used in the work area to monitor particulate concentrations during soil handling activities. Dust levels will be measured in the exclusion zone/work area every 15 minutes at a minimum. Dust control procedures will be implemented if dust concentrations

exceed 5 mg/m^3. Soil handling activities will be suspended if dust concentrations in the exclusion zone/work area exceed 20 mg/m^3.

In addition to dust monitoring within the exclusion zone/work areas, dust levels will be monitored at the downwind extent of the exclusion zone/work areas to ensure that contaminated dust is not migrating outside of the controlled work area. In accordance with SCAQMD requirements (Rule 403), dust levels on the downwind side of the work area must not exceed 0.05 mg/m^3 of the upwind or background dust levels. Stationary dust meters will be located on both the upwind and downwind side of the exclusion zone/work areas in order to monitor dust levels in compliance with this requirement. The wind direction at the Site can be determined using a wind sock or portable wind meter. Wind speed and direction readings can additionally be downloaded from the meteorology station on top of the Honda Motor Company building located less than one mile from the Site. Based on past AECOM experience, controlling downwind dust levels can be problematic at wind speeds above 15 miles per hour. It may be necessary to suspend handling of pesticide-impacted soils when wind speeds exceed 15 miles per hour. If downwind dust levels exceed 0.05 mg/m^3 of the upwind dust levels despite dust control measures, soil handling activities will be suspended in order to prevent exposure to downwind receptors.

Dust monitoring data, both in the exclusion zone/work area and upwind/downwind areas, will be recorded and kept on file at the construction trailer and in the AECOM office. Dust monitoring data will be made available to oversight contractors, regulatory agencies, and inspectors upon request.

6.4 AIR MONITORING FOR VOCS

Soils generated during well installation and trenching activities could potentially be impacted by VOCs. Soil cuttings generated during well installation activities are expected to contain low and non-hazardous levels of VOCs. Because TGRS construction activities include trenching across multiple petroleum pipelines, some fuel hydrocarbons may be encountered during off-Property trenching activities. Shallow on-Property soils are not expected to contain VOCs.

During soil handling, breathing zones will be monitored with a photoionization detector (PID) to verify that concentrations of VOCs, most likely chlorobenzene, remain below 10 parts per million per volume (ppmv). If VOC concentrations are sustained ranging from 10 to 75 ppmv, Level C respiratory protection will be required. The TGRS construction activities are not expected to produce breathing zone concentrations of this magnitude. Work activities producing VOCs in the breathing zone should be controlled to limit chlorobenzene concentrations at the edge of the exclusion zone to less than 10 ppmv at all times. All air sampling equipment will be properly calibrated each morning prior to work beginning and at mid-day. All air sampling equipment will be in good working condition. In the event PID

readings exceed 75 ppmv, soil handling activities will be suspended and appropriate mitigation measures will be implemented for VOCs. Additional details associated with air monitoring for VOCs in the breathing zone are provided in Section 5.5.2 of the HASP.

SCAQMD Rule 1166 addresses the excavation of soils containing VOCs, which includes a 50 ppmv screening level concentration for soil management. Several elements of SCAQMD Rule 1166, such as protocols for mitigation of potential VOC emissions, have been incorporated into the HASP (specifically Section 5.5.2 – Air Monitoring Action Levels). The best available control measures will be used to control VOC concentrations, nuisance odors, or fumes to below action levels during the TGRS construction. In the event that VOCs, nuisance odors, or fumes are generated by construction activities, they will be controlled by the implementation of appropriate procedures during soil handling activities including, but will not be limited to, the following:

- Water as a dust suppressant. The water will be available via a water truck or a metered discharge from a hydrant on Site. VOCs, odors, and fumes will be controlled by spraying water on the soil prior to beginning activities each day, as need throughout the day, and at the end of the day;
- Keep the soil piles covered at all times when not in use and limiting the amount of soil uncovered during loading;
- Limit size of work area.

VOC air monitoring data will be recorded and kept on file at the construction trailer and AECOM office. VOC air monitoring results will be made available to oversight personnel, regulatory agencies, and inspectors upon request.

7.0 NOISE EXPOSURE

During the TGRS construction, several construction activities, specifically the operation of heavy equipment, have the potential to generate elevated noise levels. Noise abatement controls and personal protection will be utilized during the TGRS construction. Additionally, TGRS construction activities will comply with City of Los Angeles Noise Ordinance No. 161,574 including subsequent amendments. Typical construction work hours will be between 7am and 5pm on standard business days. Construction activities are not planned for weekends, holidays, or nighttime work. Construction activities in the public rights-of-way may be further limited to non-peak traffic hours as required by the City or County of Los Angeles. Construction equipment will be shutdown at the close of each business day and secured (as previously discussed in Section 4.0 – Site Security).

For personnel working within exclusion zones/work areas, AECOM has compiled noise monitoring data that indicate that work locations within 25 feet of operating heavy equipment (e.g., air compressors, earth-working equipment, drill rig) can result in exposure to hazardous levels of noise (levels greater than 90 decibels). Accordingly, all personnel must use hearing protection (earplugs or earmuffs) within 25 feet of any operating piece of heavy equipment. Specific details on AECOM's Hearing Conservation Program are described in Section 6.6 – Noise Exposure and Attachment A of the HASP.

Noise exposure will be checked with a noise dosimeter and/or sound level meters. Noise levels will be checked periodically, such as at the beginning of the TGRS construction, as construction moves into different phases of work, and anytime there is a potential activity that may exceed the action levels imposed by the HASP or the City of Los Angeles Noise Ordinance No. 161,574. All noise monitoring data will be recorded in writing, kept on file at the construction trailer, and submitted to the Project Manager for inclusion as part of the formal construction record. The noise monitoring data will be made available to regulatory agencies and inspectors upon request.

7.1 NOISE CONTROL

Several construction activities will take place that could potentially generate noise levels greater than 85 decibels in the work area. These activities include heavy equipment for excavation, grading, soil screening, soil loading/unloading, backfilling, well installation, and transportation of soils. The City of Los Angeles Noise Ordinance No. 161,574 requires that noise levels within a residential area be below 75 decibels within 50 feet of the work area. One extraction well (G-EW-3) and a portion of the extraction pipeline is located within a City of Los Angeles residential area as shown in Figure 3. Compliance with the City noise ordinance will be required within this area. A substantial portion of the extraction and injection pipelines is located in Los Angeles County residential areas and adjacent to active commercial

businesses, and noise control will additionally be implemented in these areas to minimize disruption to residents and associated businesses.

For on-Property construction activities, the public will not be within 50 feet of the work areas and construction personnel can use noise suppressing PPE to protect against elevated noise levels. For off-Property construction activities, the public will be within 50 feet of work areas and noise control measures may be required to minimize noise levels. Potential noise control measures will include, but will not be limited to, the following:

- Verify heavy equipment is well maintained and in proper working order;
- Stagger on-Site operations, if elevated noise generated is due to multiple pieces of heavy equipment operating at one time;
- Use noise abatement screens to enclose the work area, particularly in public rights-of-way (e.g., during well drilling operations);
- No equipment will be left on when not in use; and
- Extending traffic control to redirect pedestrian traffic further away from work locations, if there is less than 50 feet between work area and pedestrian traffic.

One or more noise control measures will be used as needed to control noise and comply with the City noise ordinance. Noise control measures may additionally be used during on-Property construction activities to reduce the need for noise suppressing PPE. The effectiveness of noise control measures will be determined using noise meters (i.e., pre- and post-noise control measurements) and documented in writing as part of the construction record. If noise control measures are not effective in reducing noise levels within an acceptable range, particularly in the off-Property areas, construction activities will be temporarily suspended until more effective noise control measures can be employed.

8.0 CONTINGENCY FOR HAZARDOUS MATERIALS

Only limited hazardous materials will be used during TGRS construction activities. The potential hazardous materials to be used during this project include:

- Methanol may be used in small quantities (less than 500 pounds) to decontaminate construction equipment contaminated with pesticides. The Comprehensive, Environmental Response, Compensation, and Liability Act (CERCLA) reportable quantity is 5,000 pounds. This chemical will be stored in a cool dry secured location at the Montrose Property.
- Small quantities of muriatic acid (less than 1,000 pounds) may be used to condition water and control pH prior to groundwater injection during well testing. The CERCLA reportable quantity is 5,000 pounds. If used during construction activities, the muriatic acid will be stored in a secure area with secondary containment.
- Releases of fuel or motor oil (i.e., equipment leak) are exempt under CERCLA and do not have a reportable quantity. Small quantities of these fuels may be used to re-fuel and maintain equipment. Chemicals will be stored in appropriate containers in secure locations away from ignition sources as needed.
- Hydrogen peroxide is a raw material used as part of the advanced oxidation system selected for groundwater treatment. Hydrogen peroxide is not required during TGRS construction but may be used during testing of the advanced oxidation system. There is no CERCLA reportable quantity for hydrogen peroxide.

If used, the above hazardous materials would be located at the Montrose Property where access is restricted. There is no risk that the public or surrounding community would be exposed to these chemicals during TGRS construction activities. Secondary containment will be used to contain these materials during use. If a small spill were to occur at the Montrose Property, spill kits will be provided to contain and/or neutralize the release. If a large spill were to occur, the AECOM Construction Manager will call 9-1-1 in accordance with the Emergency Response Planning procedures described in Section 10.1.5 – Spill Containment Procedure and Attachment A of the HASP.

9.0 WASTE MANAGEMENT

For the TGRS construction, waste will be generated from construction activities. These activities include well installation, trenching, and grading. Wastes will consist of soil cuttings and drilling mud from well installation, soil from trenching, used PPE, decontamination water from all activities, purged groundwater from well installation, and general trash.

9.1 WASTE HANDLING

Waste will be temporarily stored at the Montrose Property, with the exception of the drilling mud and purge water from well installation activities, which will be handled in accordance with Section 9.1.1. All waste will be properly contained and labeled with pending characterization and off-Site transport. All waste generated during TGRS construction activities will be transported off-Site within 90 days of generation. General trash and recycling bins will be cleared at a minimum of once a week during the TGRS construction.

For the TGRS project, all waste, with the exception of work completed related to grading, is expected to be non-hazardous waste. If any waste generated shows evidence of contamination (i.e., odor, staining, etc.) or is from a suspected impacted area, the waste will be segregated from the primary staging area and characterized by laboratory analysis.

9.1.1 WELL INSTALLATION WASTE

Well installation activities will generate soil cuttings, drilling mud, decontamination water, purge water, and general trash (including recyclables). The soil cuttings and general trash will be stored at the Montrose Property pending characterization disposal and/or off-Site disposal. Wastes generated during well installation activities are expected to be non-hazardous.

Drilling mud and purge water will be stored in 6,300 gallon or 21,000 gallon storage tanks (space permitting) near the work area. This bulk liquid waste will remain near the work area pending characterization and off-Site disposal but will pose no risk for human exposure. Characterization, transportation, and disposal of wastes temporarily accumulated in the off-Property areas will be accelerated (i.e., less than 30 days from the date of generation).

All soil cuttings generated during the TGRS construction will be placed in 20-cubic yard closed-top roll-off bins, each lined with plastic sheeting. The soil cuttings will be loaded into the bins as the cuttings are generated, using a hopper. At the completion of each well, the soil bins will be staged at the Montrose Property. All roll-off bins will be closed and properly secured at the end of each workday. Each bin will

be labeled with the following information using indelible ink: generator name and address, waste type and source, well identification, and accumulation date. Before off-Site transportation, the bins will be labeled with appropriate DOT identification and classification information.

9.1.2 TRENCHING WASTE

For the TGRS construction, the trenches will be excavated, and soil will be transported to the Montrose Property for soil screening prior to backfilling the trench. It will be necessary to temporarily store the excavated soil on-Property pending backfilling. The screened trench soils will be staged in a manner to minimize dust generation as indicated in Section 6 of the SMP. At the staging areas, excavated soil will be placed on an impermeable barrier base (i.e., plastic sheeting) and covered with plastic sheeting or other proper materials to prevent any dust generation. If significant rainfall is anticipated, the staging areas will be bermed to contain any run-off.

During non-excavation hours, excavated soil stockpiles will be covered with plastic sheeting. Additional field applications may involve installation of other physical barriers that minimizes movement of materials from the Site by wind, water, or any other mechanism.

Any excess soil from trenching that will not be used for backfilling will be characterized for off-Site disposal. Decontamination water and used PPE resulting from trenching activities will also need to be characterized for off-Site disposal. Soils excavated during pipeline trenching are expected to be non-hazardous. However, if evidence of soil contamination is detected during trenching, the soils will be segregated for characterization using laboratory analysis.

9.1.3 GRADING WASTE

On-Property soils at and surrounding the groundwater treatment plant will be re-graded during TGRS construction. Shallow on-Property soils are expected to contain DDT, will be handled in accordance with the AOC policy, and will not be transported for off-Site disposal. The DDT-impacted soils will be used for re-grading and will remain at the Montrose Property. However, decontamination water and used PPE will be generated during re-grading activities and will be stored on-Property in bulk containers or DOT-rated 55-gallon steel drums. The containers will be sealed and labeled pending characterization and off-Site transportation. The re-grading area will be bermed with sand bags to contain runoff in the event of rainfall. Stormwater pollution will be prevented during TGRS construction activities in accordance with Federal and State technical requirements.

9.2 WASTE CHARACTERIZATION

For the TGRS construction, representative composite samples will be collected from each type of waste that requires off-Site disposal. Each sample will be collected in laboratory-supplied containers, sealed, labeled, and placed on ice pending delivery to a California State certified analytical laboratory. The waste characterization samples will be analyzed by the following methods:

- VOCs by USEPA Method 8260B
- Pesticides by USEPA Method 8081A
- CAM Metals by USEPA Method 6010B/7400 series

For soils and drilling mud, the waste samples will additionally be analyzed by:

- Toxicity Characteristic Leaching Procedure (TCLP) Volatiles (USEPA Method 8260B)
- TCLP Pesticides by USEPA Method 8081A

The waste characterization samples will be placed on ice and submitted to the analytical laboratory under proper chain of custody procedures. All sample shipments will be picked up by the laboratory courier and delivered to the laboratory that same day.

9.3 WASTE TRANSPORT AND DISPOSAL

After reviewing the results of the waste characterization, *de maximis* will conduct a waste determination. Once completed, a waste profile sheet will be completed for each characterized waste stream for submittal to the appropriate disposal facility. The profile sheet will be signed by *de maximis* acting on behalf of Montrose. Following approval of the waste profile by the disposal facility, waste manifests will be prepared for signature by *de maximis* for all waste streams to be transported for off-Site disposal.

In accordance with the Partial Consent Decree and prior to transporting any waste materials for off-Site disposal, a determination will be obtained from USEPA that the receiving facility is operating in compliance with 42 USC § 9621(d)(3) and 40 CFR §300.440. For receiving facilities located outside of California, the appropriate state environmental official and USEPA Project Coordinator will be notified in writing in advance of shipment. The aforementioned written notification applies to waste volumes exceeding 10 cubic yards and will include at a minimum: (1) the name and location of the receiving facility, (2) the type and quantity of waste material, and (3) the shipping schedule, and (4) the method of transportation. The above notification will be made for each disposal facility located outside of California.

10.0 REPORTING

Construction progress and related data will be communicated to USEPA and the State of California on a monthly basis in accordance with the requirements of the Partial Consent Decree. The monthly progress reports will be submitted by *de maximis*. AECOM will provide routine progress reports during TGRS construction activities for use by *de maximis* in preparing the monthly reports. The progress reports will contain all relevant construction progress and associated data including results of quality assurance inspections and soil compaction testing. Photographs will additionally be provided in the progress reports.

A series of additional reports will be generated during and after the TGRS construction activities in accordance with the Partial Consent Decree, including the following:

- Periodic Inspection Reports
- Pre-Final Construction Inspection Report
- Final Construction Inspection Report
- Construction Completion Report including As-Built Engineering Drawings
- Certification Completion Report

Periodic inspections will be conducted at the discretion of USEPA and the State of California. The inspection reports will be submitted within 14 days following the field inspection in accordance with the requirements of the Partial Consent Decree. The Construction and Certification Completion Reports will be submitted within 60 and 90 days respectively following approval of the Final Construction Inspection Report.

11.0 REFERENCES

AECOM, 2012 — Health and Safety Plan, TGRS Construction, Montrose Superfund Site, 20201 Normandie Avenue, Los Angeles, California, April 23.

de maximis, 2012 — Letter to Mr. Kevin Mayer, U.S. EPA Region 9, Response to EPA's Final Design Comments dated August 7, 2012 Dual Site Groundwater Operable Unit Unilateral Administrative Order No. 2008-04A, Los Angeles, California, December 11.

Geosyntec, 2012 — Final Design Drawings and Specifications, Dual Site Groundwater Operable Unit, Unilateral Administrative Order No. 2008-04A, Los Angeles, California, June 5.

H+A, 2004 — Data Management Plan, Montrose Superfund Site, 20201 Normandie Avenue, Los Angeles, California, March 4.

L&W, 2012a — Letter to Taly L. Jolish, Assistant Regional Counsel, U.S. EPA Region 9, Area of Contamination Policy for the Montrose Chemical Corporation of California Superfund Site, February 17.

L&W, 2012b — Letter to Mr. Richard Hiett, U.S. EPA Region 9, Treatment of Arsenic in the Montrose Torrance Groundwater Treatment System, November 12.

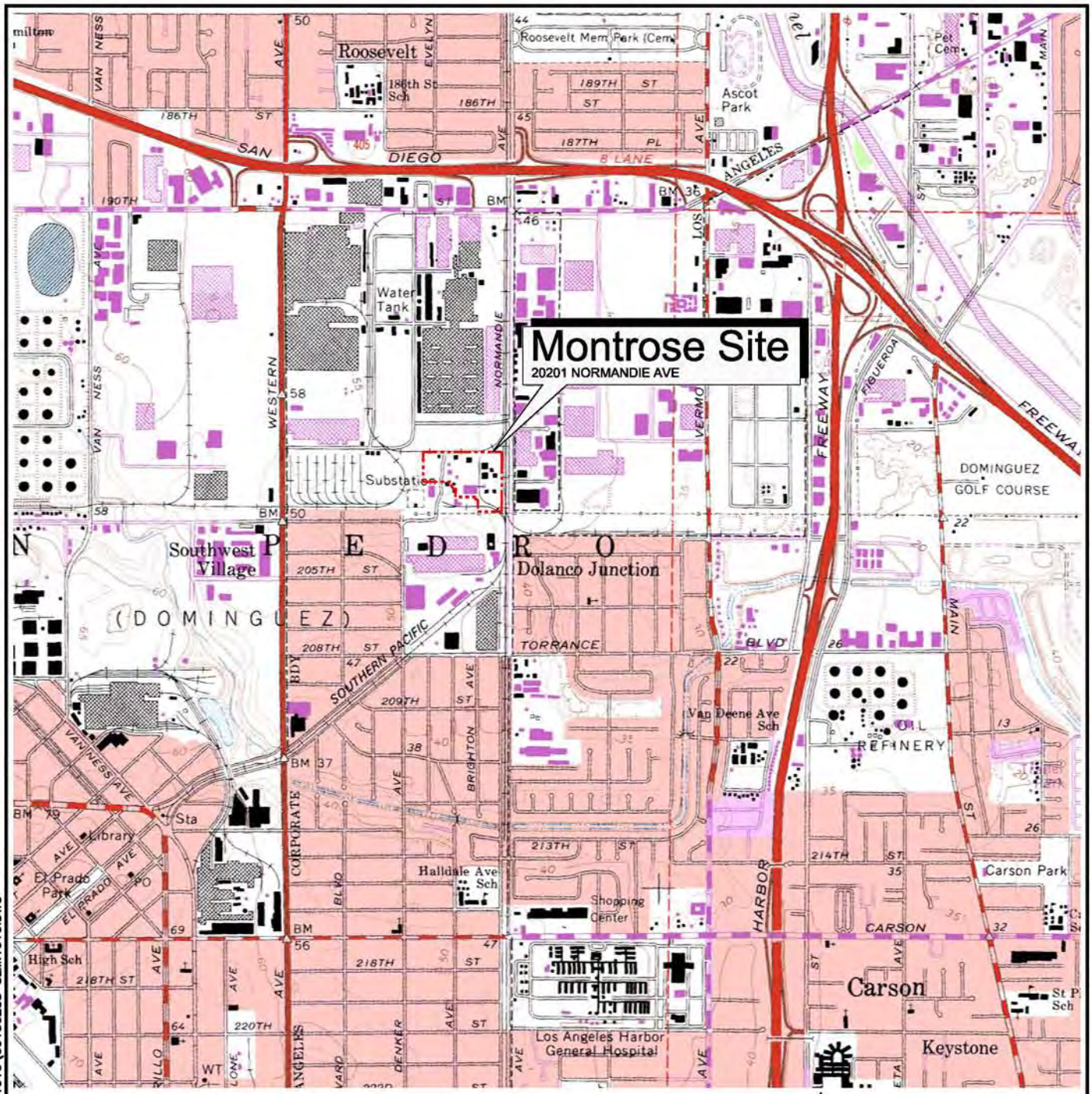
USEPA, 1998 — Final Remedial Investigation Report for the Montrose Superfund Site, Los Angeles, California, May 18.

USEPA, 1999 — Record of Decision for Dual Site Groundwater Operable Unit, Montrose Chemical and Del Amo Superfund Sites, Volume I: Declaration and Decision Summary, March.

USEPA, 2012a — Partial Consent Decree, Construction of the Dual Site Groundwater Operable Unit Treatment System, August 22.

USEPA, 2012b — Letter to Mr. Joe Kelly, President, Montrose Chemical Corporation of California, Approval of Final Dual Site Groundwater Operable Unit Remedial Design Report, Unilateral Order No. 2008-04A, Dual Site Groundwater Operable Unit, Montrose Chemical and Del Amo Superfund Sites, Los Angeles, California, September 19.

FIGURES



Reference:

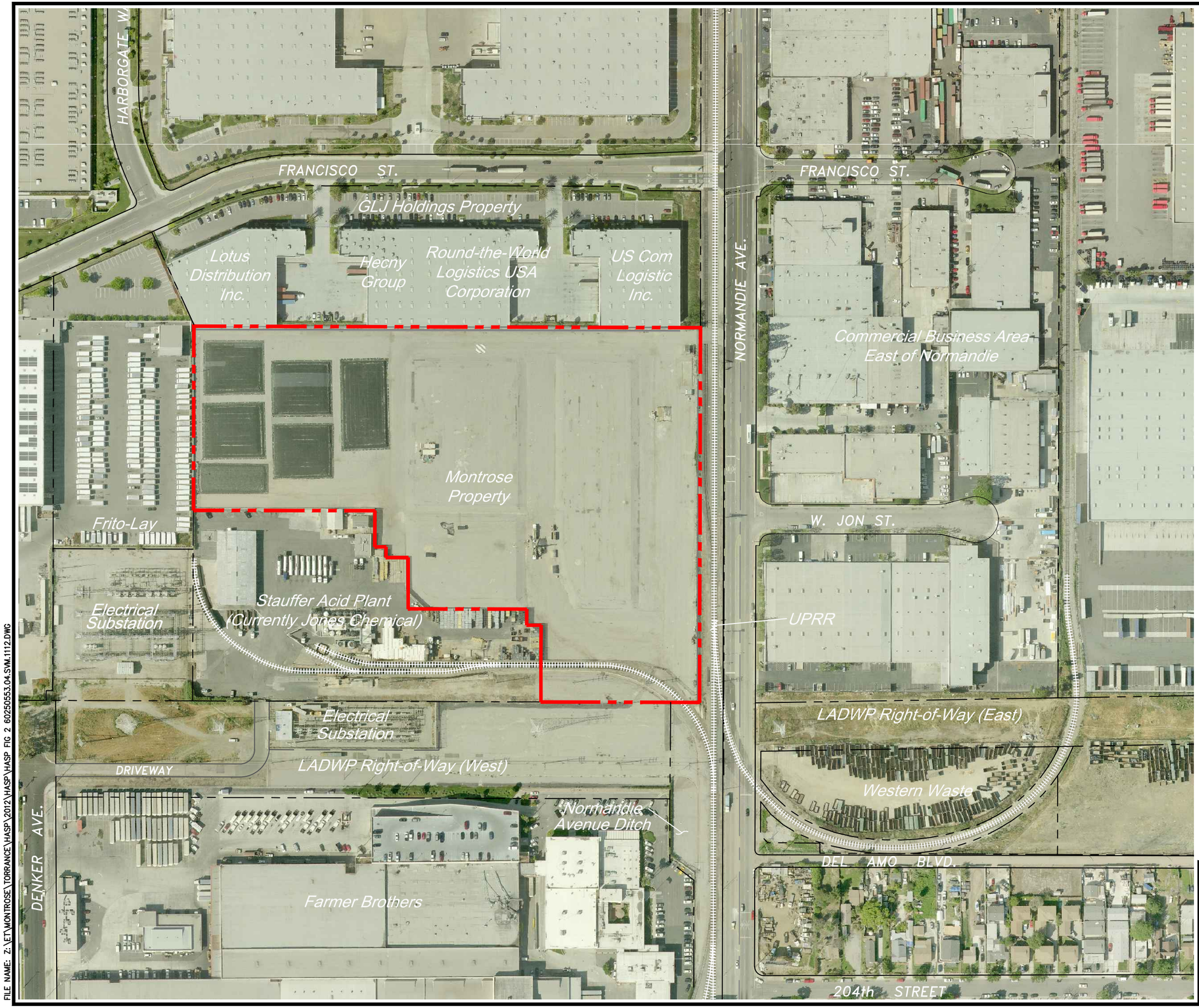
1. U.S.G.S. Topographic Map, Torrance, California 7.5 Minute Quadrangle. Georeferenced using the State of California's CASIL On-line GIS Database, Copyright 2010.

Montrose Chemical Corporation

Site Location Map

Date: 10-10	Montrose Superfund Site	Figure
Project No. 60150255	AECOM	1

FILE NAME: Z:\ET\MONTROSE\TORRANCE\SLM\2010\SLM.1010\60150255 SLM.1010.DWG



Legend:

- Location of Current Montrose Property Boundary
- Parcel Boundary / Right-of-Way
- LADWP — Los Angeles Department of Water and Power
- Existing Railroad Tracks

References:

1. Parcel Boundary Information from Los Angeles, CA, Department of Public Works, Online GIS data set, ©2009. Montrose Chemical Corporation Boundary Survey conducted August 13, 2001 by Dulin & Boynton Land Surveyors.
2. Satellite/Aerial Photos Reference: U.S.G.S Orthorectified Image, Dated July 29, 2009.

NORTH

0 100 200 FEET

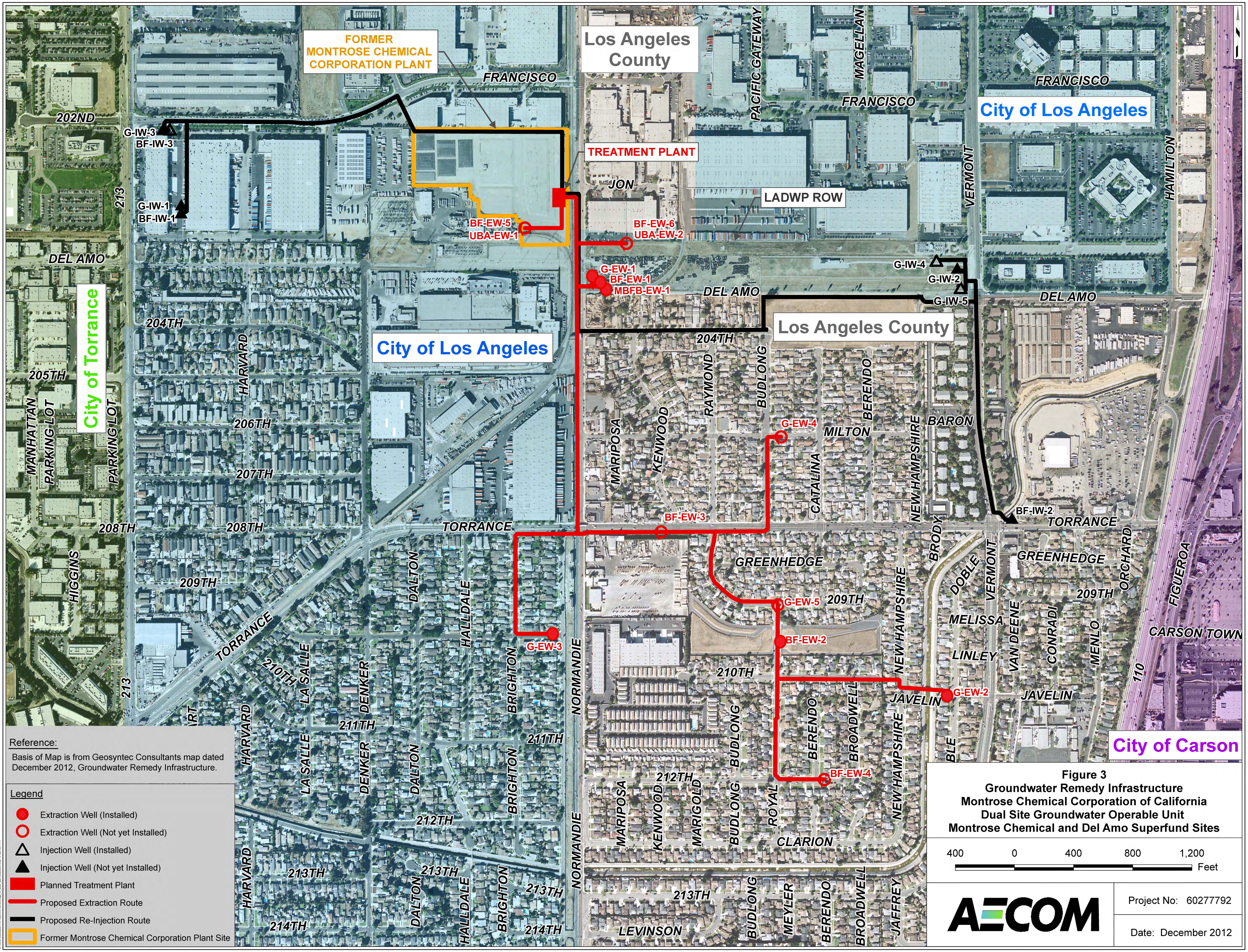
SCALE: 1"= 200'

Montrose Chemical Corporation

Site Vicinity Map

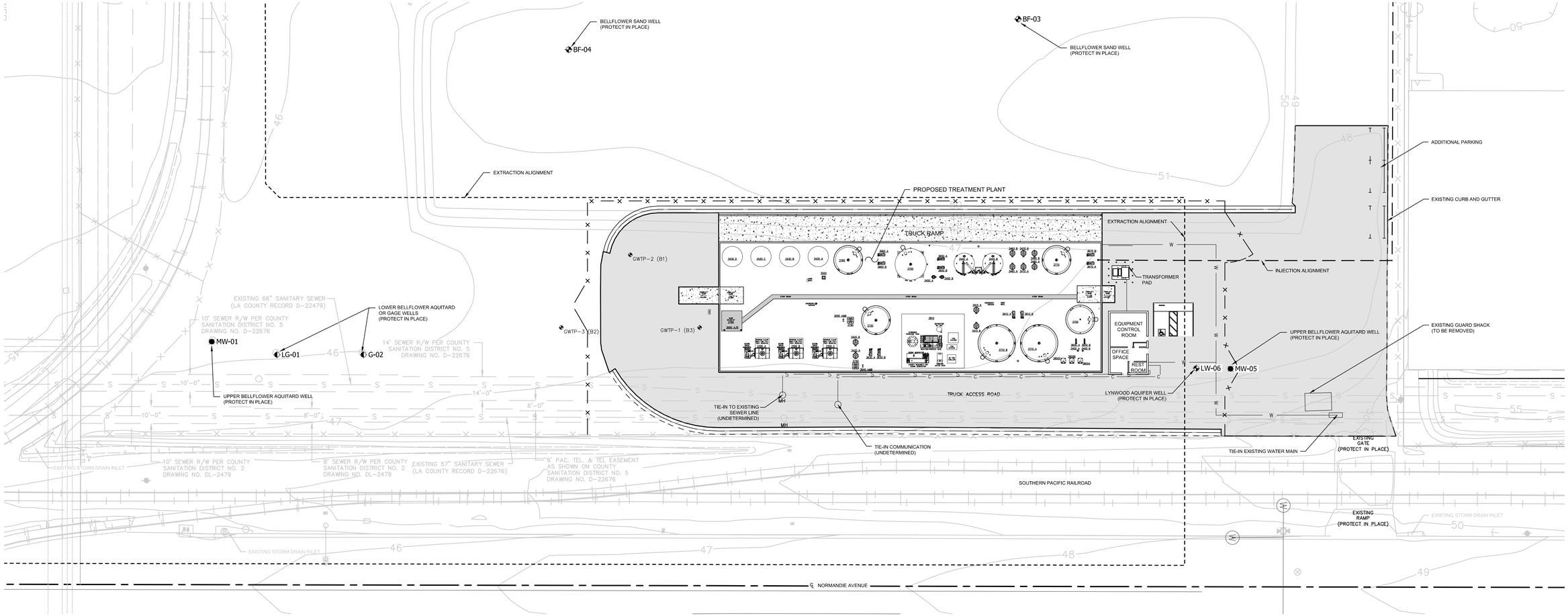
Date: 11-12	Montrose Superfund Site	Figure 2
Project No. 60250553	AECOM	

FILE NAME: Z:\ET\MONTROSE\TORRANCE\HASP\2012\HASP\HASP FIG 2 60250553.04.SVM.1112.DWG



Reference:
Basis of Map is from Geosyntec Consultants map dated December 2012, Groundwater Remedy Infrastructure.

Figure 3
Groundwater Remedy Infrastructure
Montrose Chemical Corporation of California
Dual Site Groundwater Operable Unit
Montrose Chemical and Del Amo Superfund Sites



EXISTING SURVEY CONTROL POINTS

POINT ID	NORTHING	EASTING	ELEVATION
HV-32	1768032.180	6470070.390	56.85
HV-31	1767805.510	6469204.260	57.54
HV-33	1766030.050	6469316.510	42.31
HV-26	1766962.120	6471324.250	43.81
HV-23	1767897.950	6472617.380	36.32
HV-22	1765836.520	6472448.670	33.70

NOTE: POINTS MAY BE USED AS LOCAL DATUM FOR CONSTRUCTION.

LEGEND

- AECOM GEOTECHNICAL BORINGS
- INJECTION ALIGNMENT
- EXTRACTION ALIGNMENT
- PROPOSED CONCRETE
- PROPOSED A.C.
- PROPOSED TELECOMMUNICATION
- PROPOSED SEWER LINE
- PROPOSED ELECTRICAL LINE
- EXISTING SOUTHERN PACIFIC RAILROAD
- EXISTING FENCE LINE
- PROPOSED FENCE LINE
- EXISTING SEWER LINE
- TRAFFIC SIGNAL
- TRAFFIC CONTROL
- FIRE HYDRANT
- UTILITIES EXISTING WATER
- ELECT VAULT
- MANHOLE UNIDENT
- WATER VALVE

30 0 30 60
SCALE IN FEET

REV	DATE	DESCRIPTION	DRN	APP
A	06.01.12	FINAL COMPLETE SET SUBMITTAL	YBZ	BLP

Geosyntec consultants
2100 MAIN STREET, SUITE 150
HUNTINGTON BEACH, CALIFORNIA USA
PHONE: 714.969.0800

TITLE: SITE PLAN

PROJECT: TREATMENT PLANT
MONTROSE CHEMICAL CORPORATION OF CALIFORNIA

SITE: DUAL SITE GROUNDWATER OPERABLE UNIT
MONTROSE CHEMICAL AND DEL AMO SUPERFUND SITES

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.

Mark Schultheis
SIGNATURE
6/03/12
DATE

REGISTERED PROFESSIONAL ENGINEER MARK D SCHULTHEIS No. C 30857 Exp: 3/31/14 CIVIL STATE OF CALIFORNIA

DESIGN BY:	CSC	DATE:	JUNE 1, 2012
DRAWN BY:	SLB	PROJECT NO.:	HM0450
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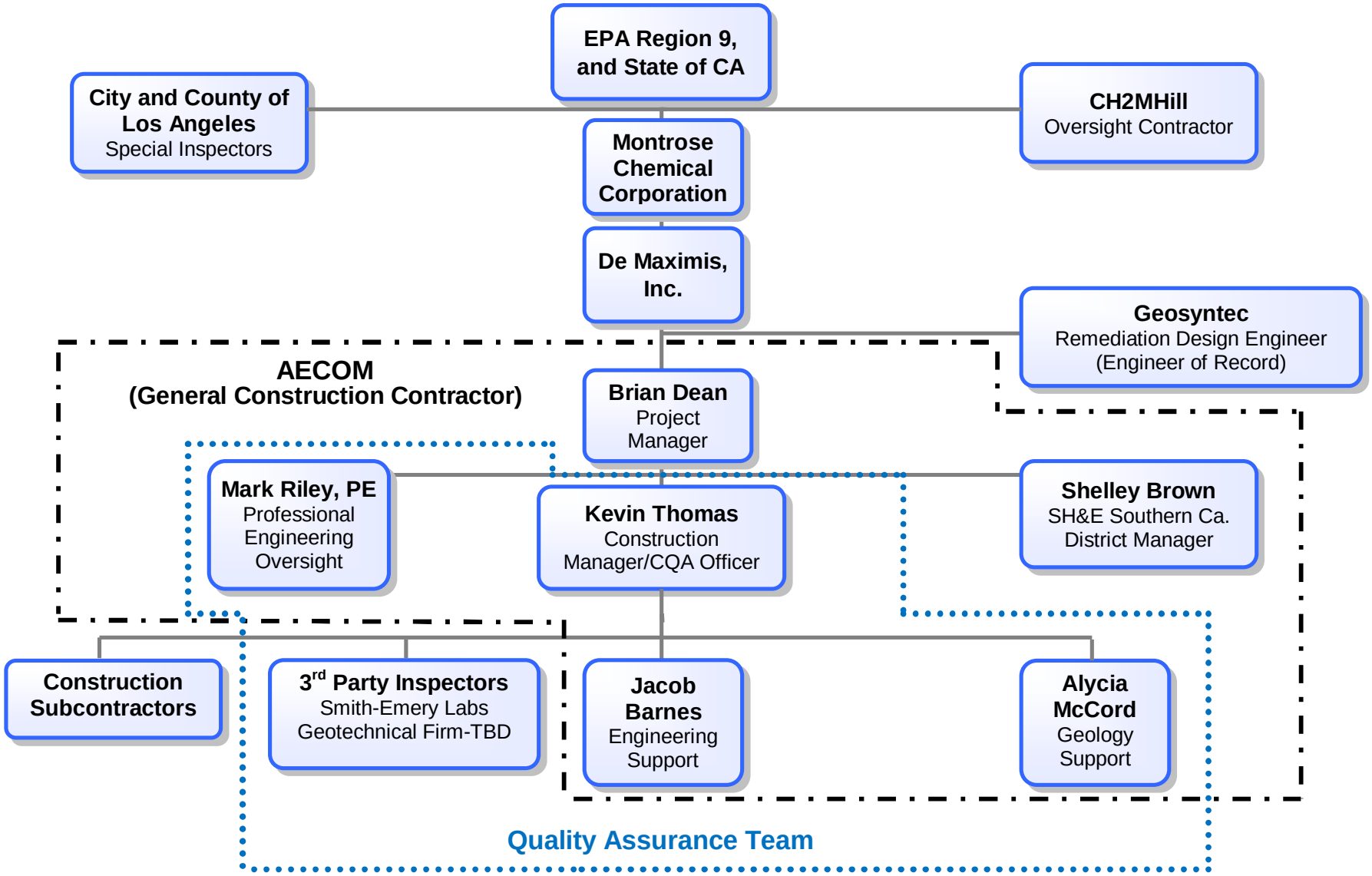
TGRS Construction
Montrose Superfund Site
Figure 5 Project Organization Chart



Notes:
CQA = Construction quality assurance