

Appendix K

Phase II Environmental Site Assessment





northgate

environmental management, inc.

PHASE II ENVIRONMENTAL SITE ASSESSMENT
CenterCal Property – 6400 East Pacific Coast Highway
and 6280 East Second Street
Long Beach, California

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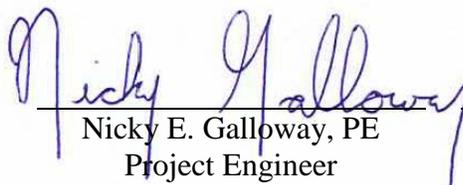
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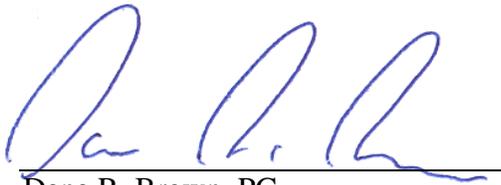
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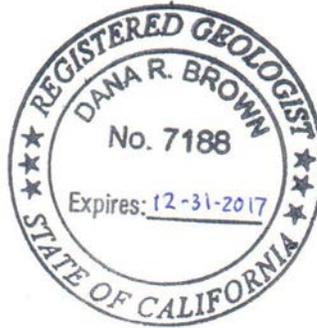


CERTIFICATION

All geologic information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by a Northgate California Professional Geologist.



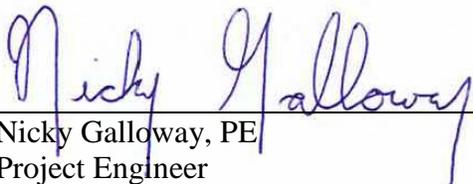
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1.0 INTRODUCTION

This report presents the results of a Phase II Environmental Site Assessment (ESA) performed by Northgate Environmental Management, Inc. (Northgate) for Wactor & Wick LLP at the property located at 6400 East Pacific Coast Highway and 6280 East Second Street in the City of Long Beach, Los Angeles County, California (the Site). The Site consists of approximately 11 acres of land developed with a two-story hotel surrounded by paved parking. A vacant area formerly occupied by a gasoline service station is present on the northeast corner of the Site. The Site is located southwest of the intersection of East Pacific Coast Highway and East Second Street and is identified as Assessor's Parcel Numbers (APNs) 7242-011-004 and -005. A Site Location Map is shown on Figure 1 and a Site Plan is shown on Figure 2.

1.1 Authorization

Wactor & Wick LLP requested that Northgate conduct a Phase II ESA to evaluate the potential presence of impacts related to issues of environmental concern identified in a Phase I ESA prepared for the Site by Northgate on March 8, 2016 (Northgate, 2016a). Issues of environmental concern identified in that report included a former gasoline station listed as a leaking underground storage tank (LUST) facility, abandoned oil/gas wells, a petroleum pipeline, and a release from an off-Site gasoline station. The objective and scope of work for this assessment were outlined in Northgate's proposal dated March 9, 2016 (Northgate, 2016b) and a change order prepared by Northgate dated March 16, 2016 (Northgate, 2016c).

1.2 Objectives

The primary objective of the Phase II ESA was to assess the potential presence of soil, soil vapor, and groundwater quality impacts related to the former on-Site gasoline service station, the abandoned oil/gas wells, and the petroleum pipeline located at the Site. The property is currently in escrow for purchase by CenterCal for redevelopment as a mixed-use commercial and residential facility. The proposed redevelopment includes the construction of subterranean parking on approximately the northern half of the Site and will require the excavation and removal of approximately the upper 15 feet of soil from this portion of the Site.

1.3 Scope of Work

The Phase II ESA was conducted in general accordance with our *Proposal for Phase II Environmental Site Assessment CenterCal Property – 6400 East Pacific Coast Highway and 6280 East Second Street, Long Beach, California* dated March 9, 2016 and approved by Wactor & Wick LLP on March 16, 2016, and our *Change Order for Phase II Environmental Site Assessment CenterCal Property – 6400 East Pacific Coast Highway and 6280 East Second Street, Long Beach,*



California dated March 16, 2016 and approved by Wactor & Wick LLP on March 17, 2016. The scope of work included the following:

- Site walk to mark the proposed boring locations, and notification to Underground Service Alert (USA) for underground utility clearance;
- Preparing a Site-specific Health and Safety Plan (HASP);
- Advancing 17 borings to depths of 10 to 15 feet below ground surface (bgs) for collecting soil and groundwater samples at the Site;
- Analyzing 62 soil samples collected from depths of 1, 5, 10, and 15 feet bgs for a variety of potential contaminants, including total petroleum hydrocarbons, carbon chain (TPH-cc), volatile organic compounds (VOCs), asbestos, semi-volatile organic compounds (SVOCs), organochlorine pesticides (OCPs), and polychlorinated biphenyls (PCBs);
- Analyzing six groundwater samples collected at the Site for VOCs and TPH-cc;
- Analyzing 10 soil vapor samples collected from depths of 4 to 4.5 feet bgs TPH-cc and VOCs; and
- Preparing this report.



2.0 BACKGROUND

2.1 Site Description

The Site consists of approximately 11 acres of improved land, currently developed with a two-story hotel surrounded by paved parking. A vacant lot, formerly occupied by a gasoline service station is present on the northeast corner of the Site. A small, temporary structure utilized as a fruit stand is currently present in this area. The Site is located in an area dominated by commercial and some residential development. The Site is located at 6400 East Pacific Coast Highway and 6280 East Second Street in Long Beach, California and is identified as APNs 7242-011-004 and -005 in Los Angeles County. A Site Location Map is shown on Figure 1 and a Site Plan is shown on Figure 2.

2.2 Site History

Northgate previously conducted a Phase I ESA at the Site (Northgate, 2016a). The assessment identified the following Recognized Environmental Conditions (RECs) in connection with the property:

- The northeastern corner of the Site was previously occupied by a gasoline service station listed by the Regional Water Quality Control Board (RWQCB) as an open LUST facility. The gasoline station, including USTs, product lines, and dispenser islands, was removed and demolished in 1998. Soil impacted with total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and xylenes (BTEX) were discovered during soil removal activities. Numerous subsurface investigations have been conducted since the closure of the gasoline station, and remedial actions, including soil excavation, groundwater removal, dual phase extraction, and air sparging, have occurred in this area. Remediation and monitoring activities are ongoing and under the oversight of the RWQCB.
- Six plugged and abandoned oil/gas wells owned by Chevron are located on the Site. These wells were installed between 1927 and 1929 for oil production and most were abandoned between 1956 and 1959, prior to the construction of the hotel, with the exception of one well that was abandoned in 1973.
- A gasoline service station with known leaks is located off-Site, to the northeast (upgradient) of the Site, directly across the intersection of East Pacific Coast Highway and East Second Street, at 6401 East Pacific Coast Highway. The station is listed on the LUST environmental database for a release of gasoline, benzene, and methyl-tert-butyl-ether (MTBE) to groundwater. The plume is shown to extend to the southwest, beneath East Pacific Coast Highway, towards the Site.



The Phase I ESA also revealed the following issue of potential environmental concern:

- An 8-inch petroleum pipeline for crude oil that was listed as "in-service" as of December 2011 extends along the eastern property line of the Site, directly adjacent to East Pacific Coast Highway.

2.3 Regional and Local Geology and Hydrology

Regionally, the Site is located within the Long Beach Plain near the southern boundary of the Los Angeles Basin in the Alamitos Gap Erosional Unconformity. The Long Beach Plain is primarily composed of Recent fine-grained alluvial deposits and Pleistocene marine deposits of clay, silt, sandy silt, sand, and gravel (URS, 2009). Previous drilling at the Site indicates that the Site is generally underlain by brown sandy clays, clayey sands and silts, and minor gravelly sands to a depth of approximately 5 to 10 feet bgs (BC, 1987). Below this depth, subsurface materials primarily consist of gray/green silty sands and clays (BC, 1987). Groundwater is encountered in the subsurface soils at depths of approximately 7 to 8 feet bgs (BC, 1987). The topography of the Site and Site vicinity is relatively flat, sloping gently down to the southwest.

Hydrologically, the Site is located within the southern portion of the West Coast Groundwater Basin, within the former San Gabriel River Delta Area. Alamitos Bay is located approximately 0.2 miles southwest of the Site and the Cerritos Channel is located about 0.4 miles to the north of the Site. On a regional basis, depth to first groundwater in the Long Beach area has generally been reported to be less than 50 feet bgs (URS, 2009).

Groundwater in the vicinity of the Site is generally reported to flow towards the southwest towards Alamitos and San Pedro Bay. Groundwater beneath the Site has been reported to generally flow towards the southeast, but local tides, both high and low, can cause high variance in the observed groundwater flow direction (URS, 2009).

Recent information available from the 2015 semi-annual groundwater monitoring event conducted at the former gasoline service station located on the northeastern portion of the Site (6280 East Pacific Coast Highway) indicates that the groundwater flow direction varied from southwest to northwest, with a hydraulic flow gradient of about 0.003 feet per foot. The measured depth to groundwater in the monitoring wells was reported at about 7 to 9 feet bgs, which is fairly consistent with the historically reported groundwater depths in these wells (AECOM, 2016). A geotechnical investigation performed on the Site on February 1 and 2, 2016, encountered groundwater at depths of 15 to 18.5 feet bgs. The report also indicated that due to the proximity of the Site to the coastal zone, the depth to groundwater is anticipated to be impacted by tidal fluctuations (Leighton, 2016).



3.0 INVESTIGATION METHODS

Northgate conducted soil, groundwater, and soil vapor sampling at the Site on March 22 through 25, 2016. A Boring Locations map is shown on Figure 3.

3.1 Pre-Field Activities

Before sampling activities began, Northgate coordinated Site access with Mr. Jon Wactor of Wactor & Wick LLP. Other pre-field activities included the specific tasks outlined below.

3.1.1 Health and Safety Plan

Northgate prepared a Site-specific Health and Safety Plan (HASP) for the Phase II ESA in accordance with applicable federal and state regulations. The HASP addressed the potential for exposure to hazardous constituents, and delineated the general safety procedures required for the safe operation of mechanical equipment used while conducting the field operations at the Site.

3.1.2 Clearance of Underground Utilities

Underground Service Alert (USA) was notified, as required by law, 48-hours prior to performing intrusive sampling activities in order to locate utilities in the vicinity of the borings.

3.2 Soil Sampling and Analysis

Seventeen soil borings (B-1/GW-1, B-2 through B-6, B-7/GW-7, and B-8 through B-17) were advanced across the Site, as shown on Figure 3, for collecting soil samples, as described below. Soil samples were collected for analysis from a boring located in the vicinity of each abandoned oil well to analyze the potential impacts from each of the six wells. Nine borings were advanced in the northern portion of the Site to evaluate potential impacts from the former gasoline service station and determine the soil quality for excavation and removal during construction activities of the proposed subterranean garage.

- Borings B-1 and B-3 were advanced to 15 feet to evaluate the potential; impacts from the former “pond” feature (potential mud pit) identified in the 1928 aerial photograph in the northern portion of the Site and the former gasoline service station.
- Boring B-2 and B-4 through B-8 were advanced to evaluate potential impacts to soil quality from the abandoned oil wells. In addition boring B-2 was also located within the former gasoline service station property. Borings B-2 and B-4 were advanced to 10 and 9 feet bgs, respectively, due to the presence of groundwater. Borings, B-5 through B-8 were advance to 15 feet bgs.



- Borings B-9 and B-16 were advanced to 15 feet in the northern portion of the property to provide information on soil quality as this portion of the Site is planned for subterranean parking and will require the excavation and removal of the upper 15 feet of soil.
- Boring B-17 was a shallow boring with a sample collected at 1 foot bgs in the parking area surrounded by hotel rooms in the central portion of the Site.

All borings were advanced by Interphase Environmental, Inc. of Commerce, California, using a direct-push GeoProbe sampling rig. During sampling, continuous soil cores were collected in clear, acetate liners. Soil cores were screened with a photoionization detector and visual observation during drilling. Soil samples were collected for selected chemical analysis at 5-foot intervals by sealing selected core intervals with Teflon-lined end caps or placed in laboratory-supplied glass jars. Samples collected for VOC analysis were collected using Lock[®]Load[™] samplers and placed in volatile organic analysis (VOA) vials preserved with ethanol and sodium bisulfate in compliance with Environmental Protection Agency (EPA) Method 5035. After the soil sampling was completed, the borings were backfilled with hydrated bentonite and a concrete or asphalt plug was placed at the surface to match existing conditions. Soil sampling methodology is further described in Appendix A.

Soil samples collected for chemical analysis were labeled, stored on ice in a cooler, and transported to SunStar Laboratories, Inc. (SunStar), a California certified laboratory in Lake Forest, California, under proper chain-of-custody control for analysis. Soil samples were analyzed for VOCs using EPA Method 8260, TPH-cc using EPA Method 8015M, SVOCs using EPA Method 8270C, OCPs using EPA Method 8081A, PCBs using EPA Method 8082, and Title 21 metals using EPA Method 6010B and 7470/7471. In addition, soil samples collected at the surface, to depths of approximately 1 foot bgs, were submitted to Patriot Environmental Laboratory Services, Inc., a California certified laboratory in Fullerton, California, for analysis for asbestos using polarized light microscopy.

3.3 Groundwater Sampling

Six groundwater samples were collected across the Site at the approximate locations shown on Figure 3. Groundwater was encountered at shallow depths ranging from 6.25 to 12.5 feet bgs across the Site. Groundwater samples were collected from temporary wells installed in borings and from an existing groundwater monitoring well, as described below. Groundwater samples were collected from three temporary wells, GW-1 through GW-3, to evaluate the lateral extent of the existing groundwater plume in the vicinity of the former gasoline service station.

Groundwater samples were collected from two temporary wells, GW-7 and GW-8, to evaluate the groundwater quality associated with the abandoned oil wells. One groundwater sample was



collected from existing groundwater monitoring well MW-6 to evaluate whether this well results from the pipeline or gasoline service station. A duplicate sample collected from boring GW-3 for quality assurance/quality control (QA/QC) measures was submitted to the laboratory identified as sample GW-4;

Grab-groundwater samples were collected from borings by lowering a disposable microbailer through a temporary well screen installed at the bottom of the boring through the Geoprobe drive rods. Samples collected from GW-1 through GW-3 were analyzed in an on-Site mobile laboratory. Samples collected from borings GW-7, GW-8, and well MW-6 were analyzed at SunStar. All samples were analyzed for TPH-cc using EPA Method 8015M and VOCs using 8260B. Groundwater sampling methodology is further described in Appendix A.

3.4 Soil Vapor Survey

Temporary soil vapor probes (SVPs) were advanced at 12 locations across the Site as shown on Figure 3. The SVP locations, depths, and rationale are described below.

- SV-1, SV-2, and SV-3 through SV-9 were installed at depths of 4 to 4.5 feet bgs in the parking lot along the eastern side of the Site to assess potential environmental concerns associated with the pipeline right-of-way located on the northeastern side of the Site and along the eastern side of the Site parallel to East Pacific Coast Highway; and
- SV-10 through SV-12 were installed at a depth of 4.5 feet in the vacant lot on the northeastern corner of the Site to assess potential environmental concerns associated with the former gasoline service station.

The probe consisted of a 3/8" x 1" Stone PolyPro vapor probe implant with 1/4-inch Speed Fit installed through the 2-inch inside diameter hollow drill rods, at varying depths from 3 to 4.5 feet bgs. Nylaflow tubing (1/4 inch diameter) was connected from the implant to the ground surface. The borehole annulus around the implant and tubing was filled through the drill rods with sand, 6-inches above and below the implant followed by 12-inches of dry bentonite placed 1 foot above the sand, and hydrated bentonite chips from above the sand to the ground surface.

After installation, each temporary probe was allowed to stabilize for two hours. Prior to sampling, each probe was purged of approximately three well-volumes of air. A vapor sample was then collected from each probe using a summa canister and flow regulator that maintained a flow rate of 150 milliliters per minute. Each sample was analyzed for VOCs using EPA Method 8260B by gas chromatography/mass spectrometry (GC/MS) and TPH-cc using EPA Method 8015M in an on-Site mobile laboratory. Soil vapor samples could not be extracted from probes SV-3 and SV-4 due to interference from groundwater.



After the soil vapor survey was conducted, the SVPs were removed and the borings backfilled with hydrated bentonite to just below the ground surface. Soil vapor sampling methodology is further described in Appendix A.



4.0 INVESTIGATION RESULTS

4.1 Subsurface Conditions

All drilling locations were covered with approximately 1 inch of concrete or asphalt underlain by approximately 6 inches of miscellaneous base fill material. The subsurface materials encountered during drilling generally consisted of interbedded silt, sandy silt, and silty sand with thin clay lenses, to approximately 15 feet bgs. Groundwater was variously encountered in the borings at depths of 6.25 to 12.5 feet bgs. A boring location map is shown on Figure 3. A copy of the investigation field notes is presented in Appendix B and the boring logs are attached in Appendix C.

4.2 Analytical Results

4.2.1 Soil Sample Analytical Results

TPH as gasoline, diesel, and motor oil (TPH-g, TPH-d, and TPH-mo) were reported in nine of the 43 soil samples collected at the Site, as shown in Table 1. TPH was primarily encountered in samples collected in the vicinity of the former gasoline service station located on the northeastern corner of the Site. Test results for VOCs are shown in Table 2. The results generally indicate the presence of petroleum-related VOCs in soil in the area formerly occupied by the gasoline service station.

TPH-g, ranging from 0.700 to 500 milligrams per kilogram (mg/kg), TPH-d ranging between 14 and 6,600 mg/kg, and TPH-mo ranging from 24 to 27,000 mg/kg were primarily reported from borings B-1, B-3, B-10, B-14, and B-15. Borings B-3, B-14, and B-15 were all located within the area of the former gasoline service station. Low concentrations of VOCs, including BTEX, naphthalene, and several other gasoline-related VOCs were also reported in samples from these borings. Samples collected at 5 feet bgs in the former service station area contained benzene up to 1,900 micrograms per kilogram ($\mu\text{g}/\text{kg}$) and ethylbenzene up to 15,000 $\mu\text{g}/\text{kg}$, which exceeded their respective residential soil regional screening levels (RSLs) of 1,200 and 5,800 $\mu\text{g}/\text{kg}$, respectively.

TPH-g, TPH-d, and TPH-mo were reported in soil samples collected from boring B-1, located southwest of the former gasoline station, at concentrations of up to 480, 6,600, and 27,000 mg/kg, respectively. Low concentrations of VOCs, including BTEX were also reported in soil samples collected from this location. TPH-g was reported at 190 mg/kg in soil samples collected from boring B-10, located along the western perimeter of the property, to the southwest and downgradient of the former gasoline station. This concentration exceeds the residential soil RSL



and the RWQCB soil screening level (SSL) of 100 mg/kg. Low levels of TPH-d, TPH-mo, benzene, and ethylbenzene were also reported in soil at this location.

As shown in Table 3, a number of SVOCs were reported at low concentrations in several soil samples. However, with the exception of naphthalene, none of the reported concentrations exceeded their respective residential or industrial soil RSLs. Naphthalene was reported at a concentration of 7,800 µg/kg in the sample collected at 5 feet bgs from boring B-15, which exceeds the residential RSL of 3,800 µg/kg. PCB-1254 was detected slightly above the laboratory method reporting limit (MRL) in two soil samples. However, the reported concentrations were below the residential and industrial RSLs. No other PCBs were measured. As shown in Table 3, asbestos and OCPs were not reported above their respective laboratory MRLs in any of the samples analyzed.

Metals were reported at low concentrations that were generally consistent with typical background concentrations in every sample analyzed as shown in Table 4. Arsenic was measured in 12 soil samples at concentrations ranging from 5.0 to 22 mg/kg, which exceed the residential and industrial soil RSLs of 0.68 and 3.0 mg/kg as well as the Department of Toxic Substance Control (DTSC) residential and industrial screening levels of 0.67 and 2.50 mg/kg, respectively. However, with the exception of the sample collected at B11 at 15 feet bgs, (arsenic concentration of 22 mg/kg), the reported concentrations are consistent with background concentrations of arsenic commonly encountered in California.

Analytical results for the soil samples were also compared against California and Federally-defined hazardous material criteria defined in California Code of Regulations, Title 22.66261.24. Results of the evaluation indicated that the soil samples would not be defined as California or Federal hazardous waste. A detail map depicting the analytical data reported in the soil samples is shown on Figure 4. Copies of the laboratory analytical reports are presented in Appendix D.

4.2.2 Groundwater Sample Analytical Results

As shown in Table 5, TPH-g was reported at concentrations ranging between 19.7 and 2,650 milligrams per liter (mg/L) in four of the seven groundwater samples collected at the Site. TPH-d and TPH-mo were reported at low concentrations from the sample collected from GW-1. Gasoline related VOCs were also detected in several groundwater samples as shown in Table 5. Benzene was reported in sample GW-1 at 21.3 micrograms per liter (µg/L). Toluene, ethylbenzene, and xylenes were also reported in sample GW-1 at concentrations of 2.1, 46.3, and 49.0 µg/L. MTBE was detected in samples collected from GW-2 through GW-3 and MW-6 at concentrations ranging from 12 to 94.3 µg/L. MTBE was reported at concentrations of 94.3 and 78.5 µg/L from samples collected from GW-2 and GW-3, respectively. Tert-butylalcohol was



reported at concentrations of 60.5 and 12,000 µg/L from samples collected at GW-2 and MW-6, respectively. There was no recoverable free-product in MW-6; however, there was a thin, dry, tar-like crust on top of the water in the well that had to be broken through with the interface probe to sample the water.

TPH-g was reported in boring GW-1 above the California RWQCB residential environmental screening level (ESL) of 100 mg/L. With the exception of benzene measured in boring GW-1 and MTBE measured in borings GW-2, GW-3, and MW-6, none of the reported concentrations of VOCs exceeded their respective California EPA maximum contaminant levels (MCLs). TPH-g, benzene, and ethylbenzene were measured in boring GW-1 at concentrations exceeding their respective California RWQCB resident ESLs of 100 mg/L, 1.1 µg/L, and 13 µg/L, indicating a vapor intrusion risk for residential development. The reported concentration of benzene also exceeded its California RWQCB industrial ESL of 9.7 µg/L from this boring. A detail map depicting the analytical data reported in the groundwater samples is shown on Figure 5. Copies of the laboratory analytical reports are presented in Appendix D.

4.2.3 Soil Vapor Sample Analytical Results

Soil vapor sample test results are shown in Table 6. As shown in the table, TPH-g was measured in all 11 soil vapor samples collected, at concentrations ranging from 4.03 to 9,690 µg/L. A non-site specific, conservative attenuation factor of 0.002 was applied to both the residential and industrial EPA Region 9 RSLs for indoor air to determine calculated RSLs for soil vapor as well as the DTSC residential and industrial screening levels (SLs) for indoor air to determine calculated SLs for soil vapor (DTSC, 2011). Using this attenuation factor, none of the reported concentrations of TPH-g exceeded the calculated residential or industrial soil vapor RSLs of 15,500 and 65,000 µg/L, respectively.

As shown in Table 6, benzene was reported in seven of the 11 soil vapor samples collected, at concentrations between 0.009 and 432 µg/L. Both the primary and duplicate sample collected at SVP-12 exceeded the calculated residential RSL as well as the calculated residential and industrial SLs determined using an attenuation factor of 0.002. Ethylbenzene was detected in five samples, at concentrations between 0.034 and 980 µg/L. Reported concentrations of ethylbenzene in both the primary and duplicate sample collected from SVP-12 exceeded the calculated residential soil vapor RSL.

With the exception of the benzene and ethylbenzene concentrations measured in SVP-12, none of the other detected concentrations of VOCs exceeded their respective, calculated soil vapor RSLs or calculated DTSC residential and industrial soil vapor SLs.



A number of other gasoline-related VOCs were variously detected in the soil vapor samples, including n-butylbenzene, sec-butylbenzene, chloroform, isopropylbenzene, 4-isopropyltoluene, naphthalene, n-propylbenzene, styrene, tetrachloroethylene, toluene, 1,1,1-trichloroethane, trichloroethylene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and xylenes. A detail map depicting the analytical data reported in the soil vapor samples is shown in Figure 6. A copy of the laboratory analytical report is shown in Appendix D.

4.2.4 Quality Assurance and Quality Control

In order to ensure proper QA/QC measures were implemented through the analysis process, Northgate collected duplicate samples of soil, groundwater, and soil vapor. These duplicate samples were submitted to the analytical laboratories as blind samples. The relative percent different (RPD) was calculated for each primary and duplicate sample, with a 20% RPD identified as the threshold for acceptance. None of the measured concentrations exceeded this 20% RPD threshold, which indicates the precision of the analytical testing methods is acceptable



5.0 CONCLUSIONS AND RECOMMENDATIONS

This investigation consisted of the analysis of 62 soil samples, six groundwater samples, and 10 soil vapor samples, collected from across the Site where Northgate's Phase I ESA indicated the potential for environmental impacts at the Site. Areas of investigation included the former gasoline service station and former ponds (possible mud pits), the oil and gas wells, and the petroleum pipeline. In general, the only area where contamination concentrations of concern were found in soil, vapor or groundwater was the former gasoline service station area. Details are provided below.

5.1 Soil

5.1.1 Former Gasoline Service Station Area and Former Ponds (Possible Mud Pits)

The portion of the Site formerly occupied by a gasoline service station has historically reported elevated concentrations of TPH-g, TPH-mo, benzene, MTBE and tert-butylalcohol in the Site soil. Elevated concentrations of petroleum hydrocarbons, benzene, and ethylbenzene are still present at this portion of the Site. The Site is listed as an open LUST facility under the regulatory oversight of the Los Angeles RWQCB that has not yet received closure.

TPH-g, TPH-d, TPH-mo, benzene, and ethylbenzene were detected in several soil samples at concentrations that exceeded their respective screening criteria.

- TPH-g was reported above the residential soil RSL and the RWQCB maximum SSL in one sample collected within the former gasoline service station area from boring B-15 at 5 feet bgs as well as three samples collected downgradient of this area from borings B-1 and B-10.
- TPH-d was reported above the RWQCB maximum SSL in three samples collected immediately downgradient of the former gasoline service station area at borings B-1 and B-3 and above the residential soil RSL in one of those samples.
- TPH-mo was reported to exceed the RWQCB maximum SSL in two samples collected immediately downgradient of the former gasoline service station at 10 feet bgs from borings B-1 and B-3.
- Benzene was measured in two samples in this area above the DTSC residential SL and in one sample above the residential soil RSL as well as the DTSC industrial SL.
- Ethylbenzene was reported in one sample in this area at a concentration that exceeds the residential soil RSL.



- As shown in Figure 4, these exceedances primarily occurred at, and downgradient of the area of the Site formerly occupied by a gasoline service station. Other VOCs, title 22 metals, SVOCs, and PCBs were reported at low concentrations; however, none of the reported concentrations of these constituents exceeded their respective regulatory screening criteria. Asbestos and OCPs were not measured above the laboratory reporting limits in any of the soil samples analyzed.

5.1.2 Oil and Gas Well Areas

Results from soil samples advanced in the vicinity of each of the six oil and gas wells reported TPH-g, TPH-d, and TPH-mo below their respective laboratory MRLs. Several metals were reported at low concentrations that were below their respective residential and industrial regulatory screening criteria or within typical background concentrations. No impacts to the subsurface soils as a result of these abandoned oil and gas wells were observed.

5.2 Groundwater

5.2.1 Former Gasoline Service Station Area and Former Ponds (Possible Mud Pits)

Groundwater contamination was found only in the borings installed and sampled in the former gasoline station area; the other borings didn't contain concentrations of concern. The results indicated that benzene and MTBE, which are gasoline hydrocarbons and gasoline-related VOCs, are present in groundwater in the former gasoline service station area beneath the northern portion of the Site at concentrations exceeding the State primary drinking water standards. This portion of the Site, which was formerly occupied by a gasoline service station at 6280 East Second Street, is under regulatory oversight by the Los Angeles RWQCB. Chevron Environmental Management Company's affiliate, Union Oil Company of California, has been named as the responsible party and is actively conducting on-going groundwater monitoring.

- GW-1: TPH-g, TPH-d, and TPH-mo were detected in the sample collected from boring GW-1, located in the northeastern portion of the Site, at concentrations of 2,650, 90.2, and 86.0 mg/L, respectively. TPH-g was measured above the California RWQCB Tier 1 environmental screening level (ESL) of 100 mg/L. BTEX were also reported in the sample from GW-1 at concentrations of 21.3, 2.1, 46.3, and 49.0 µg/L, respectively. Concentrations of benzene and ethylbenzene were reported to exceed their California RWQCB residential ESLs of 1.1 and 13 µg/L, respectively. Benzene was also measured to exceed the California EPA MCL of 1.0 µg/L and the California RWQCB industrial ESL of 9.7 µg/L.
- GW-2: TPH-g was reported in the sample collected from GW-2, located in the northeastern portion of the Site, at a concentration of 32.9 mg/L. MTBE was measured in



the sample at a concentration of 94.3 µg/L, which exceeds the California EPA MCL of 13 µg/L. tert-butylalcohol was reported in the sample at a concentration of 60.5 µg/L.

- GW-3: TPH-g was measured in both the primary (GW-3) and the duplicate (GW-4) samples collected from boring GW-3 at a concentration of 19.7 mg/L in each. MTBE was reported in the primary sample at a concentration of 78.5 µg/L and in the duplicate sample at a concentration of 74.7 µg/L, which exceed the California EPA MCL of 13 µg/L.
- MW-6: MTBE was reported in the sample collected from MW-6 at a concentration of 12 µg/L. No other VOCs were detected in the groundwater sample.

5.2.2 Oil and Gas Well Areas

Groundwater samples collected from GW-7 and GW-8, located adjacent to former oil wells, did not report concentrations of TPH or VOCs above their respective laboratory reporting limits indicating no impacts to the groundwater as a result of these abandoned oil and gas wells.

5.2.3 Petroleum Pipeline

The groundwater sample collected from the existing monitoring well, MW-6 contained reported concentrations of MTBE (a fuel oxygenate) and tert-butylalcohol (a degradation product of MTBE) at 12 and 12,000 µg/L, respectively. These substances are likely associated with gasoline and not crude oil. No LNAPL was found or recovered from MW-6; however, the thin crust on top of the water would be indicative of a heavier hydrocarbon compound potentially associated with a petroleum pipeline.

5.3 Soil Vapor

5.3.1 Former Gasoline Service Station Area and Former Ponds (Possible Mud Pits)

Benzene, ethylbenzene, and other gasoline-related VOCs were detected at elevated concentrations in soil vapor samples from borings SV-10 through SV-12 collected from the area of the former gasoline service station located in the northeast corner of the Site. Benzene and ethylbenzene were measured at concentrations that exceed calculated residential soil vapor RSLs in the primary and duplicate samples collected from SVP-12, indicating a potential vapor intrusion risk for future residential development.

Soil vapor samples collected at this portion of the Site also contained low concentrations of n-butylbenzene, sec-butylbenzene, isopropylbenzene, 4-isopropyltoluene, naphthalene, n-propylbenzene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and xylenes. However,



as these compounds were either not detected in groundwater, or were detected, but at very low concentrations that did not exceed their respective calculated industrial soil vapor RSLs or SLs. Their presence does not appear to represent a significant environmental concern for vapor intrusion or construction worker safety at the Site.

5.3.2 Petroleum Pipeline

Soil vapor samples were collected along the length of the petroleum pipeline from borings SV1, SV-2, SV-5 through SV-9, and SV-11 (also located within the former gasoline service station area). TPH-g was reported in all of the samples collected from these borings at a concentration of 3,370 mg/L from boring SV11, collocated within the former gasoline service station area, and at concentrations ranging from 4.03 to 46.1 mg/L in the remaining borings. Soil vapor samples collected at this portion of the Site also contained low concentrations of sec-butylbenzene, chloroform, isopropylbenzene, 4-isopropyltoluene, naphthalene, n-propylbenzene, styrene, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and xylenes. TPH-g and the aromatic compounds (including benzenes, toluenes, and xylenes) are related to the former gasoline service station. Naphthalene and the other compounds detected may be related to the petroleum pipeline. Based on the results of the soil vapor sampling, there is potential for impacted soil in the pipeline right-of-way.



6.0 LIMITATIONS

The purpose of a geologic/hydrogeologic study is to reasonably characterize existing site conditions based on the geology/hydrogeology of the area. In performing such a study, it is understood that a balance must be struck between a reasonable inquiry into the site conditions and an exhaustive analysis of each conceivable environmental characteristic. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to describe all geologic/hydrogeologic conditions of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.

Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by visual observation. Where subsurface exploratory work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.



7.0 REFERENCES

- AECOM, 2016. *Third Quarter 2015 Semiannual Groundwater Monitoring Report, Former 76 Station No. 5379 (351712), 6280 East Second Street, Long Beach, California, CRWQC-LAR Case No. 908030052A.* January 15.
- Brown and Caldwell (BC), 1987. *Site Assessment Report, Unocal Service Station No. 5379, Long Beach, California,* November 19.
- Department of Toxic Substance Control-California Environmental Protection Agency (DTSC-Cal EPA), 2011. *Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance),* October 11. Leighton Consulting Group (Leighton), 2016. *Geotechnical Exploration Report, Proposed 2nd and PCH Retail and Mixed-Use Development, City of Long Beach, California.* February 25.
- Northgate Environmental Management, Inc. (Northgate) 2016a. *Phase I Environmental Site Assessment, CenterCal Property – 6400 East Pacific Coast Highway and 6280 East Second Street, Long Beach, California.* March 8.
- _____. 2016b. *Proposal for Phase II Environmental Site Assessment, CenterCal Property – 6400 East Pacific Coast Highway and 6280 East Second Street, Long Beach, California.* March 9, 2016.
- _____. 2016c. *Change Order for Phase II Environmental Site Assessment, CenterCal Property – 6400 East Pacific Coast Highway and 6280 East Second Street, Long Beach, California.* March 16, 2016.
- URS, 2009. *Interim Remedial Action Plan, 76 Station #5379, 6280 East Second Street, Long Beach, California.* October 21.



TABLES



TABLE 1
Soil Sample Analytical Results - Total Petroleum Hydrocarbons

Sample Identification	Sample Depth (feet bgs)	Sample Date	EPA Method 8015M		
			Total Petroleum Hydrocarbons		
			Gasoline Range Organics (GRO) C4-C12 mg/kg	Diesel Range Organics (DRO) C13-C22 mg/kg	Motor Oil Range Organics (MORO) C23-C32
B-1-5.0	5	3/24/2016	<0.330	<10	<10
B-1-10.0	10	3/24/2016	480	6,600	27,000
B-1-15.0	15	3/24/2016	130	300	94
B-2-5.0	5	3/23/2016	<0.380	<10	<10
B-3-5.0	5	3/24/2016	<0.410	<10	<10
B-3-10.0	10	3/24/2016	66	640	3,200
B-3-15.0	15	3/24/2016	<0.360	<10	<10
B-4-5.0	5	3/23/2016	<0.350	<10	<10
B-4-9.0	9	3/23/2016	<0.360	<10	<10
B-5-5.0	5	3/25/2016	<0.370	<10	<10
B-5-10.0	10	3/25/2016	<0.500	<10	<10
B-5-15.0	15	3/25/2016	<0.410	<10	<10
B-6-5.0	5	3/25/2016	<0.360	<10	<10
B-6-10.0	10	3/25/2016	<0.500	<10	<10
B-6-15.0	15	3/25/2016	<0.360	<10	<10
B-7-5.0	5	3/25/2016	<0.390	<10	<10
B-7-10.0	10	3/25/2016	<0.420	<10	<10
B-8-5.0	5	3/23/2016	<0.390	<10	<10
B-8-10.0	10	3/23/2016	<0.370	<10	<10
B-9-5.0	5	3/23/2016	<0.350	<10	<10
B-9-10.0	10	3/23/2016	<0.440	<10	<10
B-9-15.0	15	3/23/2016	<0.360	<10	<10
B-10-5.0	5	3/25/2016	<0.500	<10	<10
B-10-10.0	10	3/25/2016	190	91	39
B-10-15.0	15	3/25/2016	<0.340	<10	<10
B-11-5.0	5	3/25/2016	<0.450	<10	<10
B-11-10.0	10	3/25/2016	<0.420	<10	<10
B-11-15.0	15	3/25/2016	<0.380	<10	24
B-12-5.0	5	3/25/2016	<0.350	41	350
B-12-10.0	10	3/25/2016	<0.350	<10	40
B-12-15.0	15	3/25/2016	<0.350	<10	<10
B-13-5.0	5	3/24/2016	<0.390	<10	<10
B-13-10.0	10	3/24/2016	<0.400	<10	<10
B-13-15.0	15	3/24/2016	<0.360	<10	<10
B-14-5.0	5	3/25/2016	17	20	<10
B-14-10.0	10	3/25/2016	<0.390	<10	75
B-14-15.0	15	3/25/2016	<0.420	14	81
B-15-5.0	5	3/24/2016	500	36	370
B-15-10.0	10	3/24/2016	<0.390	<10	<10
B-15-15.0	15	3/24/2016	0.700	<10	<10
B-16-5.0	5	3/24/2016	<0.450	<10	<10
B-16-10.0	10	3/24/2016	<0.430	<10	<10
B-16-15.0	15	3/24/2016	<0.360	<10	<10
Residential Soil RSL			110	2,500	NA
Industrial Soil RSL			600	33,000	NA
RWQCB Maximum SSL			100	100	1,000

Notes:

--: Not analyzed
 <: Not detected at or above the indicated laboratory method reporting limit
bold: Detected above the screening level
 bgs: Below ground surface
 DRO: Diesel range organics
 EPA: Environmental Protection Agency
 GRO: Gasoline range organics
 mg/kg: Milligrams per kilogram
 MORO: Motor oil range organics

NA: Not available
 ND: Not detected, reporting limits vary for each compound
 RSL: EPA Region 9 Regional Screening Level, updated November 2012
 RWQCB: Regional Water Quality Control Board
 SSL: Soil Screening Levels, updated May 1996

TABLE 2
Soil Sample Analytical Results - Volatile Organic Compounds

Sample Identification	Sample Depth (feet bgs)	Sample Date	EPA Method 8260B														Other VOCs	
			Benzene µg/kg	Toluene µg/kg	Ethylbenzene µg/kg	m,p-Xylenes µg/kg	o-Xylene µg/kg	sec-Butylbenzene µg/kg	Isopropylbenzene µg/kg	Naphthalene µg/kg	p-Propylbenzene µg/kg	p-Isopropyltoluene µg/kg	n-Propylbenzene µg/kg	Tert-butyl-alcohol µg/kg	1,3,5-Trimethylbenzene µg/kg	1,2,4-Trimethylbenzene µg/kg		MTBE µg/kg
B-1-5.0	5	3/24/2016	<4.2	<4.2	<4.2	<8.5	<4.2	--	--	--	--	--	<42	--	--	<17	ND	
B-1-10.0	10	3/24/2016	29	11	54	<10	<5.0	--	--	--	--	--	<50	--	--	<20	ND	
B-1-15.0	15	3/24/2016	19	<5.0	290	<10	<5.0	--	--	--	--	--	<50	--	--	<20	ND	
B-2-5.0	5.0	3/23/2016	<4.3	<4.3	<4.3	<8.6	<4.3	--	--	--	--	--	<43	--	--	<17	ND	
B-3-5.0	5.0	3/24/2016	<5.0	<5.0	<5.0	<5.0	<10	--	--	--	--	--	<50	--	--	<20	ND	
B-3-10.0	10.0	3/24/2016	5.9	<5.7	110	<5.7	<11	--	--	--	--	--	<57	--	--	<23	ND	
B-3-15.0	15.0	3/24/2016	<5.0	<5.0	<5.0	<10	<5.0	--	--	--	--	--	690	--	--	<20	ND	
B-4-5.0	5.0	3/23/2016	<4.1	<4.1	<4.1	<8.2	<4.1	--	--	--	--	--	--	--	--	--	ND	
B-4-9.0	9.0	3/23/2016	<4.3	<4.3	<4.3	<8.6	<4.3	--	--	--	--	--	--	--	--	--	ND	
B-9-5.0	5.0	3/23/2016	<4.5	<4.5	<4.5	<9.0	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	--	<4.5	<4.5	--	ND	
B-9-10.0	10.0	3/23/2016	<6.7	<6.7	<6.7	<13	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	--	<6.7	<6.7	--	ND	
B-9-15.0	15.0	3/23/2016	<4.5	<4.5	<4.5	<9.0	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	--	<4.5	<4.5	--	ND	
B-10-5.0	5.0	3/25/2016	<5.6	<5.6	<5.6	<11	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6	--	<5.6	<5.6	--	ND	
B-10-10.0	10.0	3/25/2016	21	<5.0	75	<5.0	<5.0	5.0	21	<5.0	<5.0	6.8	18	--	12	27	--	ND
B-10-15.0	15.0	3/25/2016	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0	<5.0	--	ND
B-11-5.0	5.0	3/25/2016	<6.1	<6.1	<6.1	<12	<6.1	<6.1	<6.1	<6.1	<6.1	<6.1	<6.1	--	<6.1	<6.1	--	ND
B-11-10.0	10.0	3/25/2016	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0	<5.0	--	ND
B-11-15.0	15.0	3/25/2016	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0	<5.0	--	ND
B-12-5.0	5.0	3/25/2016	<4.4	<4.4	<4.4	<8.8	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	--	<4.4	<4.4	--	ND
B-12-10.0	10.0	3/25/2016	<4.5	<4.5	<4.5	<9.0	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	--	<4.5	<4.5	--	ND
B-12-15.0	15.0	3/25/2016	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0	<5.0	--	ND
B-13-5.0	5.0	3/24/2016	<5.0	<5.0	<5.0	<5.0	<10	--	--	--	--	--	<50	--	--	<20	ND	
B-13-10.0	10.0	3/24/2016	<5.0	<5.0	<5.0	<5.0	<10	--	--	--	--	--	<50	--	--	<20	ND	
B-13-15.0	15.0	3/24/2016	<5.0	<5.0	<5.0	<5.0	<10	--	--	--	--	--	<50	--	--	<20	ND	
B-14-5.0	5.0	3/25/2016	480	130	1,800	2,100	210	<4.4	54	55	<4.4	<4.4	130	--	100	420	--	ND
B-14-10.0	10.0	3/25/2016	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0	<5.0	--	ND
B-14-15.0	15.0	3/25/2016	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0	<5.0	--	ND
B-15-5.0	5.0	3/24/2016	1,900	35,000	15,000	56,000	23,000	--	--	--	--	--	<50	--	--	<20	ND	
B-15-10.0	10.0	3/24/2016	<4.5	<4.5	<4.5	<9.0	<4.5	--	--	--	--	--	92	--	--	92	ND	
B-15-15.0	15.0	3/24/2016	<5.0	5.3	<5.0	13	<5.0	--	--	--	--	--	5,400	--	--	190	ND	
B-16-5.0	5.0	3/24/2016	<5.6	<5.6	<5.6	<11	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6	--	<5.6	<5.6	--	ND	
B-16-10.0	10.0	3/24/2016	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0	<5.0	--	ND	
B-16-15.0	15.0	3/24/2016	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0	<5.0	--	ND	
Residential Soil RSL			1,200	4,900,000	5,800	1,110,000	650,000	7,800,000	NE	NE	NE	NE	NE	NE	780,000	58,000	NE	NA
Industrial Soil RSL			5,100	47,000,000	25,000	4,800,000	2,800,000	120,000,000	NE	NE	NE	NE	NE	NE	1,200,000	240,000	NE	NA
TSC Residential SLs (cancer endpoint)			330	1,100,000*	NE	NE	NE	NE	2,200,000*	NE	NE	NE	NE	NE	210,000*	NE	NE	NA
DTSC Industrial SLs (cancer endpoint)			1,400	5,400,000*	NE	NE	NE	NE	12,000,000*	NE	NE	NE	NE	NE	1,100,000*	NE	NE	NA

Notes:

--: Not analyzed
 <: Not detected at or above the indicated laboratory method reporting limit
 *: Noncancer endpoint value used as cancer endpoint value not established
bold: Detected above the screening level
 bgs: Below ground surface

EPA: Environmental Protection Agency
 ESL: Environmental Screening Level
 MTBE: Methyl tert butyl ether
 NA: Not available
 ND: Not detected, reporting limits vary for each compound

NE: Not established
 PLM: Polar light microscopy
 RSL: EPA Region 9 Regional Screening Level, updated November 2012
 SL: Screening Levels, updated January 2016
 µg/kg: Micrograms per kilogram

TABLE 3
Soil Sample Analytical Results - Semi-Volatile Organic Compounds, Organochlorine Pesticides,
Polychlorinated Biphenyls, and Asbestos

Sample Identification	Sample Depth (feet bgs)	Sample Date	PLM	EPA 8270C						EPA 8081A	EPA 8082	
			Asbestos	2-Methylnaphthalene	1-Methylnaphthalene	Hexachloroethane	Naphthalene	Bis(2-ethoxy)phthalate	Other SVOCs	OCPs	PCB-1254	PCBs
			Percent (%)	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
B-9-1.0	1.0	3/23/2016	ND	--	--	--	--	--	--	ND	--	--
B-9-5.0	5.0	3/23/2016	--	<300	<300	<300	<300	<300	ND	ND	13	ND
B-9-10.0	10.0	3/23/2016	--	<300	<300	<300	<300	<300	ND	ND	11	ND
B-9-15.0	15.0	3/23/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-10-1.0	1.0	3/25/2016	ND	--	--	--	--	--	--	ND	--	--
B-10-5.0	5.0	3/25/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-10-10.0	10.0	3/25/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-10-15.0	15.0	3/25/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-11-1.0	1.0	3/25/2016	ND	--	--	--	--	--	--	ND	--	--
B-11-5.0	5.0	3/25/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-11-10.0	10.0	3/25/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-11-15.0	15.0	3/25/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-12-1.0	1.0	3/25/2016	ND	--	--	--	--	--	--	ND	--	--
B-12-5.0	5.0	3/25/2016	--	<300	<300	<300	<300	6,400	ND	ND	--	--
B-12-10.0	10.0	3/25/2016	--	<300	<300	<300	<300	<300	ND	ND	--	--
B-12-15.0	15.0	3/25/2016	--	<300	<300	<300	<300	<300	ND	ND	--	--
B-13-1.0	1.0	3/24/2016	ND	--	--	--	--	--	--	--	--	--
B-13-5.0	5.0	3/24/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-13-10.0	10.0	3/24/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-13-15.0	15.0	3/24/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-14-1.0	1.0	3/25/2016	ND	--	--	--	--	--	--	ND	--	--
B-14-5.0	5.0	3/25/2016	--	730	420	400	650	<300	ND	ND	--	--
B-14-10.0	10.0	3/25/2016	--	<1,500	<1,500	<1,500	<1,500	<1,500	ND	ND	--	--

TABLE 3
Soil Sample Analytical Results - Semi-Volatile Organic Compounds, Organochlorine Pesticides, Polychlorinated Biphenyls, and Asbestos

Sample Identification	Sample Depth (feet bgs)	Sample Date	PLM	EPA 8270C						EPA 8081A	EPA 8082	
			Asbestos	2-Methylnaphthalene	1-Methylnaphthalene	Hexachloroethane	Naphthalene	Bis(2-ethoxyethyl)phthalate	Other SVOCs	OCPs	PCB-1254	PCBs
				Percent (%)	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg			
B-14-15.0	15.0	3/25/2016	--	<300	<300	<300	<300	<300	ND	ND	--	--
B-15-1.0	1.0	3/24/2016	ND	--	--	--	--	--	--	--	--	--
B-15-5.0	5.0	3/24/2016	--	6,600	3,700	<300	7,800	<300	ND	ND	<10	ND
B-15-10.0	10.0	3/24/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-15-15.0	15.0	3/24/2016	--	<300	<300	<300	<300	<300	ND	ND	<10	ND
B-16-1.0	1.0	3/24/2016	ND	--	--	--	--	--	--	ND	--	--
B-16-5.0	5.0	3/24/2016	--	<300	<300	<300	<300	<300	ND	ND	ND	ND
B-16-10.0	10.0	3/24/2016	--	<300	<300	<300	<300	<300	ND	ND	ND	ND
B-16-15.0	15.0	3/24/2016	--	<300	<300	<300	<300	<300	ND	ND	ND	ND
B-17-1.0	1.0	3/25/2016	ND	--	--	--	--	--	--	--	--	--

Residential Soil RSL	NE	240,000	18,000	NE	3,800	NE	NA	NA	NA	240	NA
Industrial Soil RSL	NE	3,000,000	73,000	NE	17,000	NE	NA	NA	NA	970	NA

Notes:

--: Not analyzed

<: Not detected at or above the indicated laboratory method reporting limit

bold: Detected above the screening level

bgs: Below ground surface

EPA: Environmental Protection Agency

NA: Not available

ND: Not detected, reporting limits vary for each compound

NE: Not established

OCPs: Organochlorine pesticides

PCBs: Polychlorinated biphenyls

PLM: Polar light microscopy

RSL: EPA Region 9 Regional Screening Level, updated November 2012

µg/kg: Micrograms per kilogram

TABLE 4
Soil Sample Analytical Results - Title 22 Metals

Sample Identification	Sample Depth (feet bgs)	Sample Date	CCR Title 22 Metals																
			EPA Method 6010B and 7470/7471																
			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
mg/kg																			
B-1-5.0	5	3/24/2016	<3.0	<5.0	88	<1.0	<2.0	12	7.4	14	<3.0	<5.0	<0.10	9.7	<5.0	<2.0	<2.0	25	13
B-1-10.0	10	3/24/2016	<3.0	<5.0	340	<1.0	<2.0	11	7.5	22	23	<5.0	<0.10	13	<5.0	<2.0	<2.0	25	13
B-1-15.0	15	3/24/2016	<3.0	<5.0	180	<1.0	<2.0	13	8.0	12	<3.0	<5.0	<0.10	12	<5.0	<2.0	<2.0	26	14
B-2-5.0	5.0	3/23/2016	<3.0	<5.0	89	<1.0	<2.0	17	12	14	<3.0	<5.0	<0.10	14	<5.0	<2.0	<2.0	37	19
B-3-5.0	5.0	3/24/2016	<3.0	<5.0	31	<1.0	<2.0	7.0	4.0	3.9	<3.0	<5.0	<0.10	5.0	<5.0	<2.0	<2.0	12	7.4
B-3-10.0	10.0	3/24/2016	<3.0	<5.0	360	<1.0	<2.0	13	7.6	13	<3.0	<5.0	<0.10	12	<5.0	<2.0	<2.0	25	14
B-3-15.0	15.0	3/24/2016	<3.0	<5.0	84	<1.0	<2.0	16	9.7	10	<3.0	<5.0	<0.10	13.0	<5.0	<2.0	<2.0	28	17
B-4-5.0	5.0	3/23/2016	<3.0	<5.0	99	<1.0	<2.0	14	8.4	14	<3.0	<5.0	<0.10	11	<5.0	<2.0	<2.0	28	15
B-4-9.0	9.0	3/23/2016	<3.0	<5.0	100	<1.0	<2.0	9.6	6.8	9.2	<3.0	<5.0	<0.10	9.6	<5.0	<2.0	<2.0	21	11
B-5-5.0	5.0	3/25/2016	<3.0	<5.0	97	<1.0	<2.0	10	7.2	6.5	<3.0	<5.0	<0.10	8.4	<5.0	<2.0	<2.0	24	11
B-5-10.0	10.0	3/25/2016	<3.0	<5.0	68	<1.0	<2.0	16	9.3	15	<3.0	<5.0	<0.10	11	<5.0	<2.0	<2.0	37	18
B-5-15.0	15.0	3/25/2016	<3.0	6.1	94	<1.0	<2.0	20	8.9	22	<3.0	<5.0	<0.10	13	<5.0	<2.0	<2.0	37	22
B-6-5.0	5.0	3/25/2016	<3.0	<5.0	46	<1.0	<2.0	11	7.1	10	<3.0	<5.0	<0.10	11	<5.0	<2.0	<2.0	21	12
B-6-10.0	10.0	3/25/2016	<3.0	<5.0	28	<1.0	<2.0	7.5	3.4	3.7	<3.0	<5.0	<0.10	4.3	<5.0	<2.0	<2.0	16	8.1
B-6-15.0	15.0	3/25/2016	<3.0	12	78	<1.0	<2.0	11	9.2	10	<3.0	<5.0	<0.10	8.3	<5.0	<2.0	<2.0	24	13
B-7-5.0	5.0	3/25/2016	<3.0	<5.0	66	<1.0	<2.0	12	7.3	9.0	<3.0	<5.0	<0.10	10	<5.0	<2.0	<2.0	22	14
B-7-10.0	10.0	3/25/2016	<3.0	5.5	150	<1.0	<2.0	23	13	26	<3.0	<5.0	<0.10	19	<5.0	<2.0	<2.0	45	25
B-8-5.0	5.0	3/23/2016	<3.0	<5.0	77	<1.0	<2.0	14	8.6	12	<3.0	<5.0	<0.10	11	<5.0	<2.0	<2.0	28	15
B-8-10.0	10.0	3/23/2016	<3.0	8.0	70	<1.0	<2.0	11	7.2	7.4	<3.0	<5.0	<0.10	9.6	<5.0	<2.0	<2.0	21	13
B-9-5.0	5.0	3/23/2016	<3.0	<5.0	43	<1.0	<2.0	9.2	5.6	5.6	<3.0	<5.0	<0.10	6.8	<5.0	<2.0	<2.0	16	9.9
B-9-10.0	10.0	3/23/2016	<3.0	5.0	99	<1.0	<2.0	17	10	20	<3.0	<5.0	<0.10	14	<5.0	<2.0	<2.0	34	19
B-9-15.0	15.0	3/23/2016	<3.0	<5.0	89	<1.0	<2.0	14	7.4	15	<3.0	<5.0	<0.10	11	<5.0	<2.0	<2.0	27	15
B-10-5.0	5.0	3/25/2016	<3.0	<5.0	26	<1.0	<2.0	5.8	3.7	3.3	<3.0	<5.0	<0.10	4.1	<5.0	<2.0	<2.0	10	6.3
B-10-10.0	10.0	3/25/2016	<3.0	9.5	88	<1.0	<2.0	16	9.9	19	<3.0	6.3	<0.10	13	<5.0	<2.0	<2.0	40	18
B-10-15.0	15.0	3/25/2016	<3.0	<5.0	96	<1.0	<2.0	12	7.2	9.2	<3.0	<5.0	<0.10	8.9	<5.0	<2.0	<2.0	21	13
B-11-5.0	5.0	3/25/2016	<3.0	<5.0	45	<1.0	<2.0	8.2	5.4	4.8	<3.0	<5.0	<0.10	6.5	<5.0	<2.0	<2.0	17	9.0
B-11-10.0	10.0	3/25/2016	<3.0	8.1	43	<1.0	<2.0	18	9.2	16	<3.0	5.8	<0.10	13	<5.0	<2.0	<2.0	32	20
B-11-15.0	15.0	3/25/2016	<3.0	22	100	<1.0	<2.0	19	11	12	17	<5.0	<0.10	15	<5.0	<2.0	<2.0	33	20
B-12-5.0	5.0	3/25/2016	<3.0	<5.0	63	<1.0	<2.0	12	7.4	9.2	<3.0	<5.0	<0.10	8.9	<5.0	<2.0	<2.0	23	13
B-12-10.0	10.0	3/25/2016	<3.0	<5.0	110	<1.0	<2.0	9.4	6.0	6.4	<3.0	<5.0	<0.10	7.5	<5.0	<2.0	<2.0	18	10
B-12-15.0	15.0	3/25/2016	<3.0	8.3	59	<1.0	<2.0	15	8.7	14	<3.0	<5.0	<0.10	12	<5.0	<2.0	<2.0	29	16
B-13-5.0	5.0	3/24/2016	<3.0	<5.0	58	<1.0	<2.0	10	6.0	9.0	<3.0	<5.0	<0.10	8.0	<5.0	<2.0	<2.0	21	11
B-13-10.0	10.0	3/24/2016	<3.0	8.3	180	<1.0	<2.0	25	15	29	<3.0	<5.0	<0.10	21	<5.0	<2.0	<2.0	47	29
B-13-15.0	15.0	3/24/2016	<3.0	<5.0	71	<1.0	<2.0	8.8	5.5	5.0	<3.0	<5.0	<0.10	7.2	<5.0	<2.0	<2.0	18	9.8
B-14-5.0	5.0	3/25/2016	<3.0	<5.0	57	<1.0	<2.0	10	6.7	6.7	<3.0	<5.0	<0.10	7.8	<5.0	<2.0	<2.0	19	11
B-14-10.0	10.0	3/25/2016	<3.0	<5.0	93	<1.0	<2.0	12	7.3	9.6	<3.0	<5.0	<0.10	9.6	<5.0	<2.0	<2.0	23	13
B-14-15.0	15.0	3/25/2016	<3.0	8.3	140	<1.0	<2.0	16	8.9	16	<3.0	<5.0	<0.10	12	<5.0	<2.0	<2.0	29	18
B-15-5.0	5.0	3/24/2016	<3.0	<5.0	62	<1.0	<2.0	11	6.3	7.6	<3.0	<5.0	<0.10	7.9	<5.0	<2.0	<2.0	22	12
B-15-10.0	10.0	3/24/2016	<3.0	<5.0	56	<1.0	<2.0	9.3	5.7	5.7	<3.0	<5.0	<0.10	7.2	<5.0	<2.0	<2.0	18	11
B-15-15.0	15.0	3/24/2016	<3.0	<5.0	35	<1.0	<2.0	6.4	4.5	4.9	<3.0	<5.0	<0.10	5.3	<5.0	<2.0	<2.0	15	7.0
B-16-5.0	5.0	3/24/2016	<3.0	<5.0	70	<1.0	<2.0	11	7.2	7.1	<3.0	<5.0	<0.10	9.2	<5.0	<2.0	<2.0	22	12
B-16-10.0	10.0	3/24/2016	<3.0	5.0	76	<1.0	<2.0	19	11	22	<3.0	<5.0	<0.10	15	<5.0	<2.0	<2.0	45	22
B-16-15.0	15.0	3/24/2016	<3.0	<5.0	110	<1.0	<2.0	17	9.0	16	<3.0	<5.0	<0.10	13	<5.0	<2.0	<2.0	33	19
Residential Soil RSL			31	0.68	15,000	160	71	120,000,000	23	3,100	400	390	11	1,500	390	390	0.78	390	23,000
Industrial Soil RSL			470	3.0	220,000	2,300	980	1,800,000,000	350	47,000	800	5,800	46	22,000	5,800	5,800	12	5,800	350,000
SC Residential SLs (cancer endpoint)			NE	0.67	NE	1,600	2,100	36,000*	NE	NE	80*	NE	1.0*	490*	NE	390*	NE	390*	NE
TSC Industrial SLs (cancer endpoint)			NE	0.25	NE	6,900	9,300	170,000*	NE	NE	320*	NE	4.5*	3,100*	NE	1,500*	NE	1,000*	NE

Notes:

- : Not analyzed
- <: Not detected at or above the indicated laboratory method reporting limit
- *: Noncancer endpoint value used as cancer endpoint value not established
- bold**: Detected above the screening level
- bgs: Below ground surface
- DTSC: Department of Toxic Substance Control
- EPA: Environmental Protection Agency
- mg/kg: milligrams per kilogram
- NA: Not available
- ND: Not detected, reporting limits vary for each compound
- NE: Not established
- RSL = EPA Region 9 Regional Screening Level, updated November 2012

TABLE 5

Groundwater Sample Analytical Results - Total Petroleum Hydrocarbons and Volatile Organic Compounds

Sample Identification	Sample Date	EPA Method 8015M Total Petroleum Hydrocarbons			EPA Method 8260B Volatile Organic Compounds						
		Gasoline Range Organics (GRO) C4-C12	Diesel Range Organics (DRO) C13-C22	Motor Oil Range Organics (MORO) C23-C32	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	tert-Butyl Alcohol	Other VOCs
		mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
GW-1	3/24/2016	2,650	90.2	86.0	21.3	2.1	46.3	49.0	<2.5	<25.0	ND
GW-2	3/24/2016	32.9	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	94.3	60.5	ND
GW-3	3/24/2016	19.7	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	78.5	<25.0	ND
GW-4	3/24/2016	19.7	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	74.7	<25.0	ND
GW-7	3/25/2016	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.50	<1.0	<10	ND
GW-8	3/25/2016	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.50	<1.0	<10	ND
MW-6	3/22/2014	<0.05	<0.50	<0.50	<0.50	<0.50	<0.50	<1.50	12	12,000	ND

California EPA MCL	NE	NE	NE	1.0	150	300	1,750	13	NE	NA
CA RWQCB Residential ESLs	100 ¹	100 ¹	NE	1.1	3,600	13	1,300	1,200	NE	NA
CA RWQCB Industrial ESLs	NE	NE	NE	9.7	30,000	110	11,000	11,000	NE	NA

Notes:

--: Not analyzed

<: Not detected at or above the indicated laboratory method reporting limit

¹: Tier 1 ESL utilized as no vapor intrusion ESL has been developed

bold: Detected above the screening level

CA: California

EPA: Environmental Protection Agency

ESL: Environmental Screening Level for vapor intrusion, shallow groundwater

MCL: Maximum Contaminant Level

mg/L: Milligrams per liter

MTBE: Methyl tert butyl ether

NA: Not available

ND: Not detected

NE: Not established

RWQCB: Regional Water Quality Control Board

µg/L: Micrograms per liter

VOCs: Volatile organic compounds

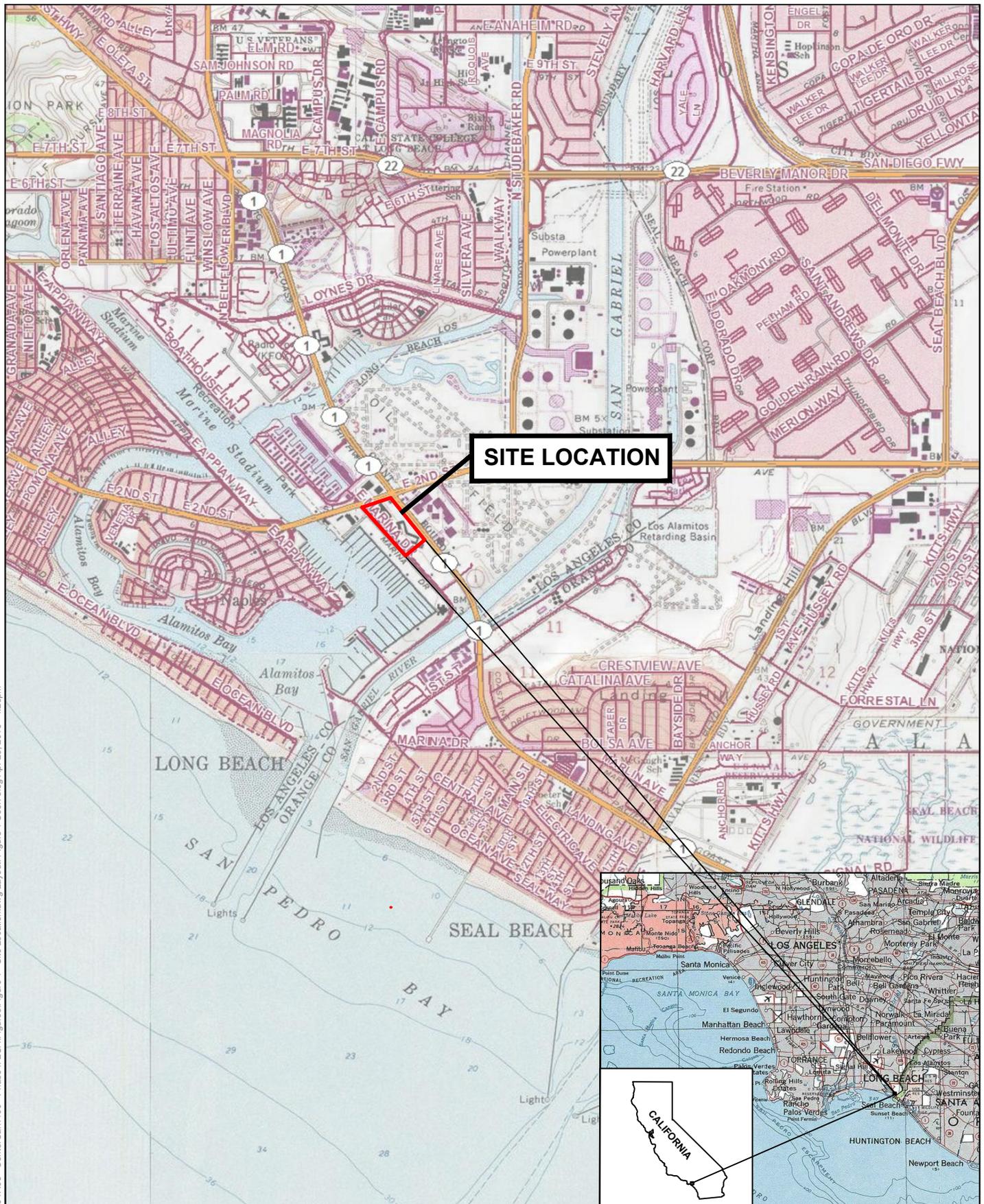
TABLE 6
Soil Vapor Sample Analytical Results - Gasoline Range Organics and Volatile Organic Compounds

Sample Identification	Sample Depth (feet bgs)	Sample Date	Volatile Organics by GC/MS + Oxygenates/Gasoline Range Organics EPA Method 8260B																		
			Gasoline Range Organics (GRO) C4-C12	Benzene	Toluene	Ethylbenzene	Xylenes	n-Butylbenzene	sec-Butylbenzene	Chloroform	Isopropylbenzene	4-Isopropyltoluene	Naphthalene	n-Propylbenzene	Styrene	Tetrachloroethylene	1,1,1-Trichloroethane	Trichloroethylene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Other VOCs
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SV1-4	4.0	3/24/2016	7.58	0.067	0.345	<0.008	0.058	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.025	0.128	0.031	0.028	<0.008	<0.008	ND	
SV2-4.5	4.5	3/24/2016	46.1	0.054	0.316	0.034	0.240	<0.008	<0.008	0.013	0.155	<0.008	0.017	0.025	<0.008	<0.008	0.024	0.022	0.037	0.016	ND
SV5-4	4.0	3/24/2016	6.28	0.009	0.073	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.024	0.025	0.026	<0.008	<0.008	<0.008	ND	
SV6-4.5	4.5	3/24/2016	4.03	<0.008	0.020	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.126	<0.008	0.016	<0.008	<0.008	ND	
SV7-4.5	4.5	3/24/2016	8.51	0.013	0.098	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.051	0.019	0.013	<0.008	<0.008	ND	
SV8-4.5	4.5	3/24/2016	13.2	<0.008	0.462	0.241	2.16	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.128	<0.008	<0.008	0.436	0.025	ND	
SV9-4.5	4.5	3/24/2016	8.20	<0.008	0.093	0.073	0.434	<0.008	<0.008	<0.008	0.012	<0.008	0.018	0.013	0.028	0.032	<0.008	0.012	0.050	<0.008	ND
SV10-4.5	4.5	3/24/2016	28.3	0.129	1.32	1.34	9.24	0.028	<0.008	<0.008	0.077	<0.008	0.184	0.403	<0.008	<0.008	<0.008	<0.008	2.34	0.739	ND
SV11-4.5	4.5	3/24/2016	3,370	13.0	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	ND
SV12-4.5	4.5	3/24/2016	9,190	432	1,480	980	3,930	62.2	13.8	<0.008	88.7	27.1	27.4	233	<0.008	<0.008	<0.008	<0.008	803	335	ND
SV12-4.5 REP	4.5	3/24/2016	9,690	426	1,460	946	3,820	63.2	12.6	<0.008	85.8	24.9	29.6	217	<0.008	<0.008	<0.008	<0.008	762	314	ND
Residential Air RSLs			31	0.36	5.2	1.1	100	NE	NE	0.12	NE	NE	NE	NE	1,000	11	5.2	0.48	7.3	NE	NA
Attenuation Factor			0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	NA
Calculated Residential Soil Vapor RSLs			15,500	180	2,600	550	50,000	NE	NE	60	NE	NE	NE	NE	5,500	2,600	240	3,650	NE	NA	
Industrial Air RSLs			130	1.6	22	4.9	440	NE	NE	0.53	NE	NE	NE	NE	4,400	47	22	3.0	31	NE	NA
Attenuation Factor			0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	NA
Calculated Industrial Soil Vapor RSLs			65,000	800	11,000	2450	220,000	NE	NE	265	NE	NE	NE	NE	2,200,000	23,500	11,000	1,500	15,500	NE	NA
DTSC Residential SLs (cancer endpoint)			NE	0.097	310*	NE	NE	210*	420*	NE	NE	NE	NE	NE	940*	0.48	1,000*	NE	NE	42*	NA
Attenuation Factor			0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	NA
Calculated DTSC Residential Soil Vapor SLs			NE	48.5	155,000	NE	NE	105,000	210,000	NE	NE	NE	NE	NE	470,000	240	500,000	NE	NE	21,000	NA
DTSC Industrial SLs (cancer endpoint)			NE	0.42	1,300*	NE	NE	880*	1,800*	NE	NE	NE	NE	NE	3,900*	2.1	4,400*	NE	NE	180*	NA
Attenuation Factor			0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	NA
Calculated DTSC Industrial Soil Vapor SLs			NE	210	650,000	NE	NE	440,000	900,000	NE	NE	NE	NE	NE	1,950,000	1,050	2,200,000	NE	NE	90,000	NA

Notes:
 †: Value provided is for air, not soil vapor
 -: Not analyzed
 <: Not detected at or above the indicated laboratory method reporting limit
 *: Noncancer endpoint value used as cancer endpoint value not established
bold: Calculated screening criteria for soil vapor based on quotient of screening criteria for air and attenuation factor
bold: Detected above the screening level
 bgs: Below ground surface
 CHHSLs: California Human Health Screening Levels
 EPA: Environmental Protection Agency
 NA: Not available
 ND: Not detected
 NE: Not established
 µg/L: Micrograms per liter
 VOCs: Volatile organic compounds

FIGURES





SITE LOCATION

FIGURE 1
Site Location Map

Phase II Environmental Site Assessment
6400 East Pacific Coast Highway
and 6280 East 2nd Street
Long Beach, California



Project No. 2047.06

Source: USGS Long Beach, Los Alamitos, Seal Beach,
and Long Beach OA S 7.5 minute quadrangles.

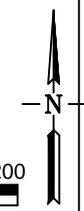
G:\Projects\Temp\2047 - Wactor & Wick\2047.06 - CenterCall\4100 - Phase II ESA\Figures\Figure 1 - Site Location.dwg Layout: Figure 1 User: oleg Apr 26, 2016 - 4:26pm

G:\Projects\Temp\2047 - Vector & Wks\2047.06 - CenterCal\4100 - Phase II ESA\Figures\Figure 2 - Site Plan.dwg, Layout: Figure 2 Site Plan User: oleg, Apr 26, 2016 - 2:55pm



Legend

— Site Boundary

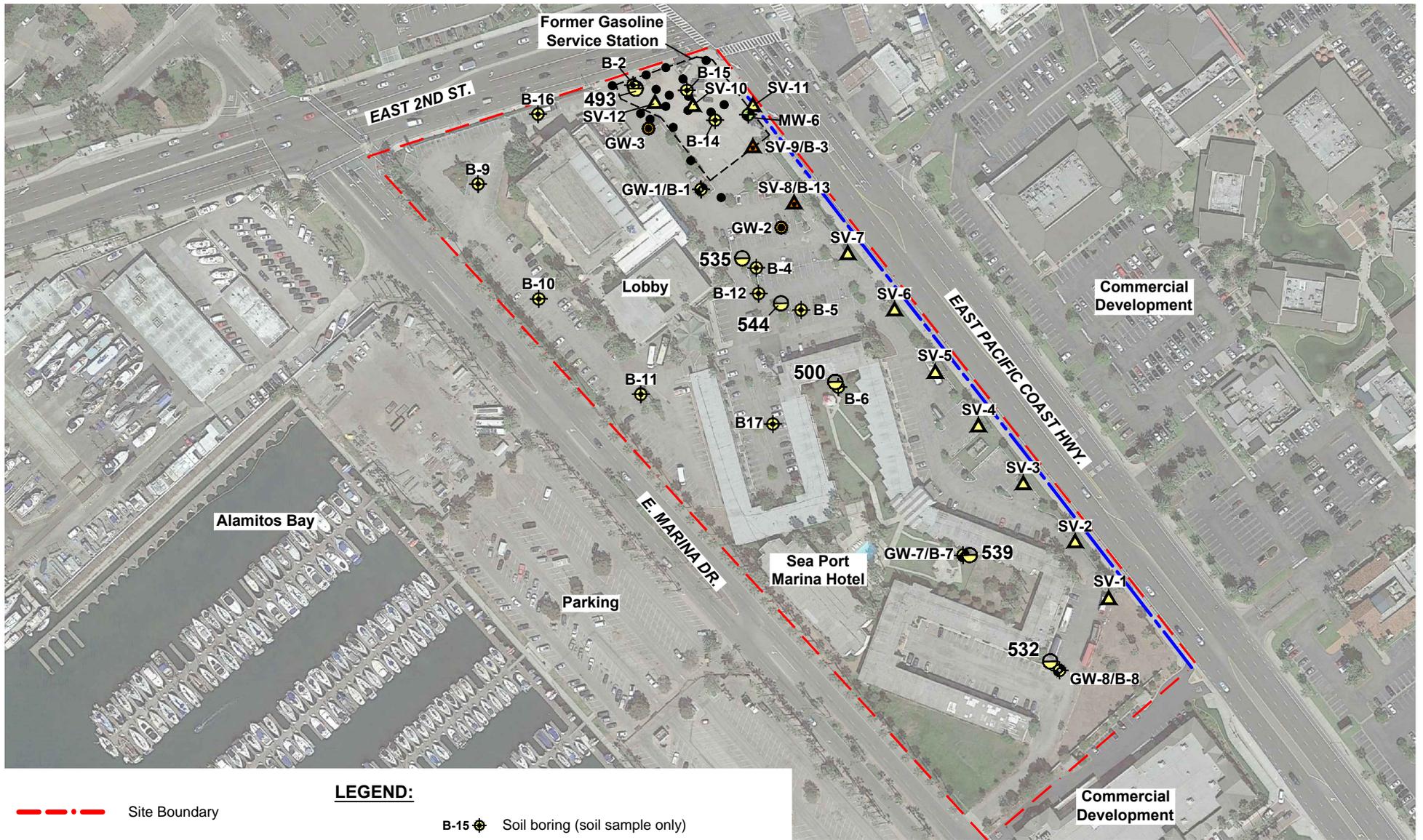


**FIGURE 2
Site Plan**

Phase II Environmental Site Assessment
6400 East Pacific Coast Highway
and 6280 East 2nd Street
Long Beach, California



Project No. 2047.06



LEGEND:

- - - Site Boundary
- - - Petroleum Pipeline (Assumed)
- - - Petroleum Pipeline (Marked)
- 532** ⊕ Approximate location of plugged oil/gas well & well number (DOGGR)
- Approximate location of groundwater monitoring wells
- B-15 ⊕ Soil boring (soil sample only)
- GW-1/B-1 ⊕ Soil borings with grab-groundwater sample
- SV-9/B-3 ▲ Soil borings completed as a soil vapor probe
- GW-3 ● Grab-groundwater only boring
- SV-7 ▲ Temporary soil vapor probe
- MW-6 ⊕ Existing monitoring well

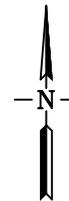
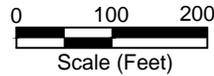


FIGURE 3
Boring Locations

Phase II Environmental Site Assessment
6400 East Pacific Coast Highway
and 6280 East 2nd Street
Long Beach, California



Project No. 2047.06

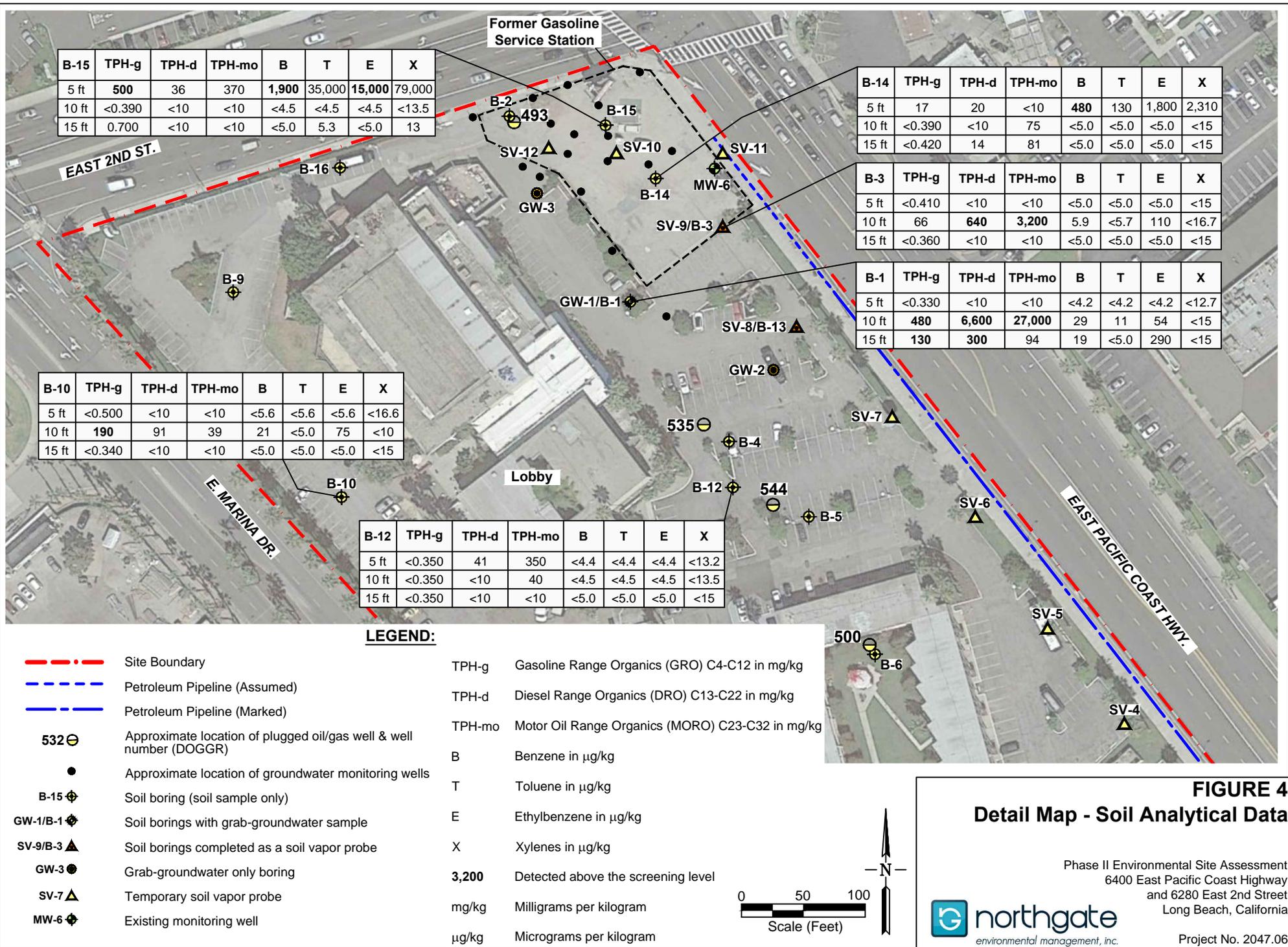


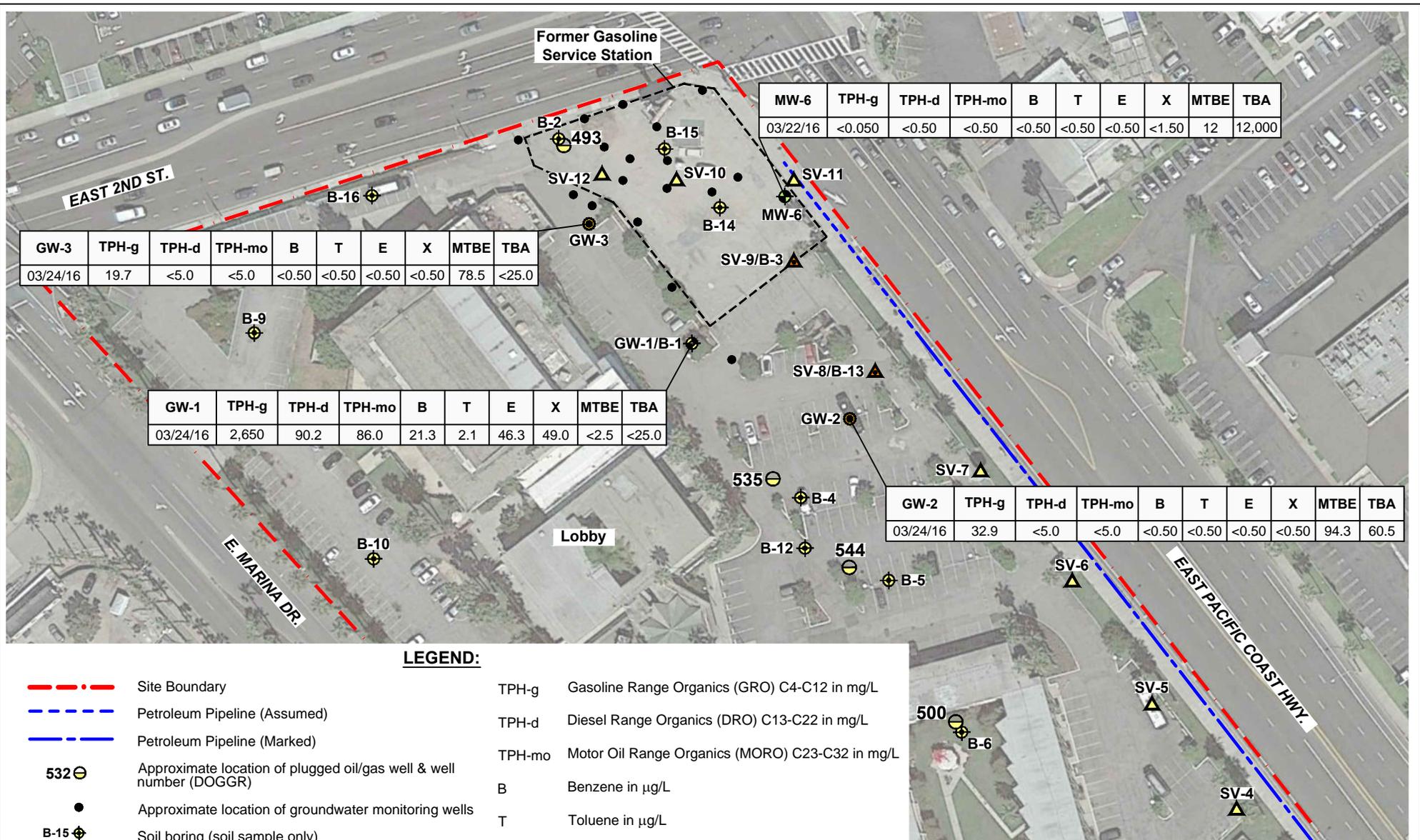
FIGURE 4
Detail Map - Soil Analytical Data

Phase II Environmental Site Assessment
6400 East Pacific Coast Highway
and 6280 East 2nd Street
Long Beach, California



Project No. 2047.06

G:\Projects\Temp\2047 - Wactor & Wick\2047.06 - Center\CalM100 - Phase II ESA\Figures\Figure 4-6 - Detail Map-Analytical Data.dwg Layout: F5 - GW Analytical Data User: oter Apr 26, 2016 - 4:27pm



LEGEND:

- - - Site Boundary
- - - Petroleum Pipeline (Assumed)
- - - Petroleum Pipeline (Marked)
- 532 ⊖ Approximate location of plugged oil/gas well & well number (DOGGR)
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- SV-9/B-3 ▲ Soil borings completed as a soil vapor probe
- GW-3 ● Grab-groundwater only boring
- SV-7 ▲ Temporary soil vapor probe
- MW-6 ⊕ Existing monitoring well

- TPH-g Gasoline Range Organics (GRO) C4-C12 in mg/L
- TPH-d Diesel Range Organics (DRO) C13-C22 in mg/L
- TPH-mo Motor Oil Range Organics (MORO) C23-C32 in mg/L
- B Benzene in µg/L
- T Toluene in µg/L
- E Ethylbenzene in µg/L
- X Xylenes in µg/kg
- MTBE Methyl Tert-Butyl Ether in µg/L
- TBA Tert-Butyl Alcohol in µg/L
- mg/L Milligrams per Liter
- µg/L Micrograms per Liter

Note: GW-7 and GW-8 not included as results were non-detect

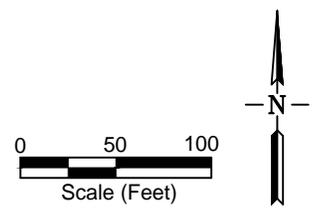
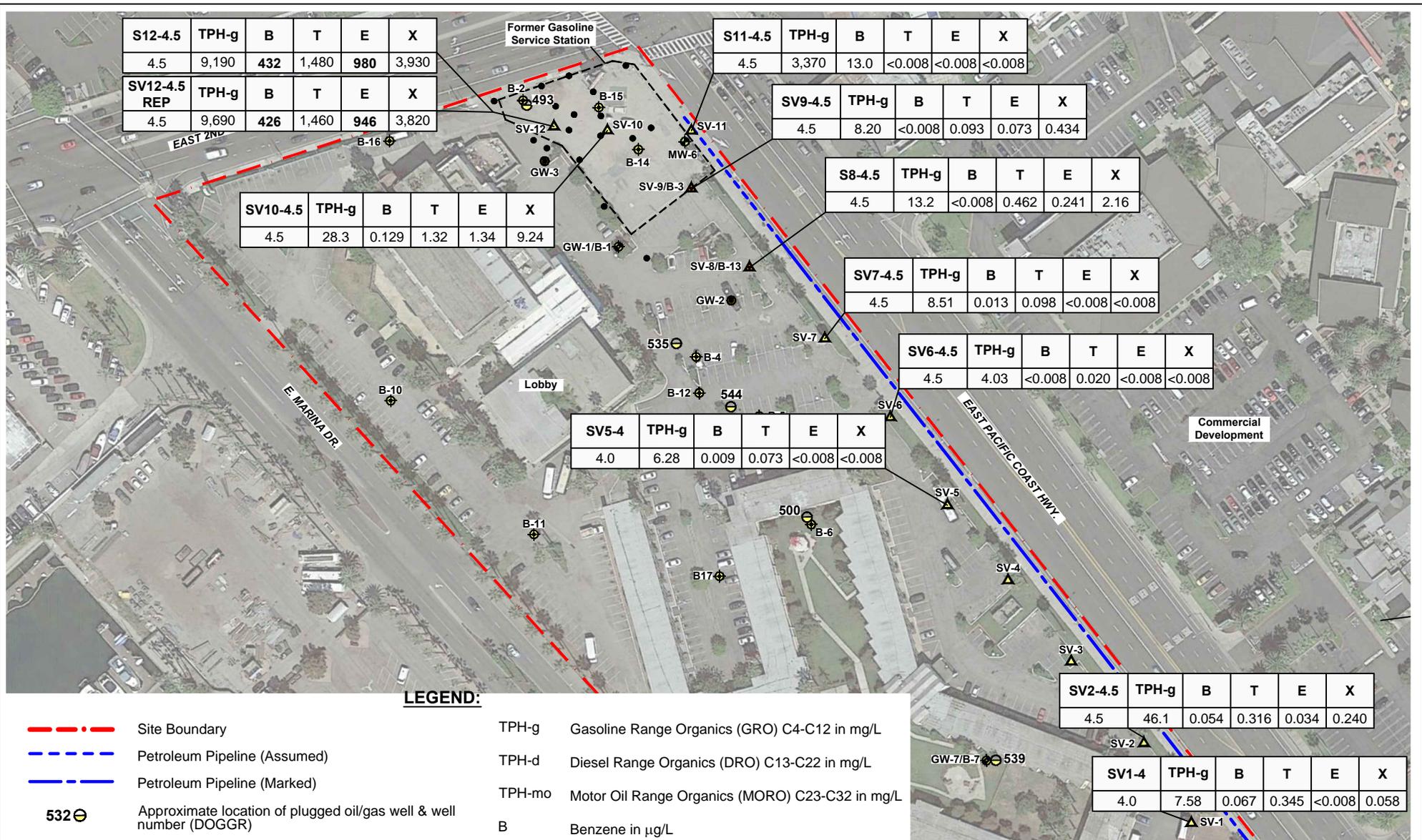


FIGURE 5
Detail Map - Groundwater Analytical Data
 Phase II Environmental Site Assessment
 6400 East Pacific Coast Highway
 and 6280 East 2nd Street
 Long Beach, California

 Project No. 2047.06



S12-4.5	TPH-g	B	T	E	X
4.5	9,190	432	1,480	980	3,930
SV12-4.5	TPH-g	B	T	E	X
4.5	9,690	426	1,460	946	3,820

S11-4.5	TPH-g	B	T	E	X
4.5	3,370	13.0	<0.008	<0.008	<0.008

SV9-4.5	TPH-g	B	T	E	X
4.5	8.20	<0.008	0.093	0.073	0.434

S8-4.5	TPH-g	B	T	E	X
4.5	13.2	<0.008	0.462	0.241	2.16

SV10-4.5	TPH-g	B	T	E	X
4.5	28.3	0.129	1.32	1.34	9.24

SV7-4.5	TPH-g	B	T	E	X
4.5	8.51	0.013	0.098	<0.008	<0.008

SV6-4.5	TPH-g	B	T	E	X
4.5	4.03	<0.008	0.020	<0.008	<0.008

SV5-4	TPH-g	B	T	E	X
4.0	6.28	0.009	0.073	<0.008	<0.008

SV2-4.5	TPH-g	B	T	E	X
4.5	46.1	0.054	0.316	0.034	0.240

SV1-4	TPH-g	B	T	E	X
4.0	7.58	0.067	0.345	<0.008	0.058

LEGEND:

--- Site Boundary

--- Petroleum Pipeline (Assumed)

--- Petroleum Pipeline (Marked)

532 ⊕ Approximate location of plugged oil/gas well & well number (DOGGR)

● Approximate location of groundwater monitoring wells

B-15 ⊕ Soil boring (soil sample only)

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TPH-g Gasoline Range Organics (GRO) C4-C12 in mg/L

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TPH-mo Motor Oil Range Organics (MORO) C23-C32 in mg/L

B Benzene in µg/L

T Toluene in µg/L

E Ethylbenzene in µg/L

X Xylenes in µg/L

432 Detected above the screening level

mg/L Milligrams per Liter

µg/L Micrograms per Liter

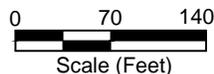
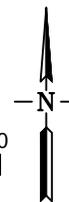


FIGURE 6
Detail Map - Soil Vapor Analytical Data

Phase II Environmental Site Assessment
6400 East Pacific Coast Highway
and 6280 East 2nd Street
Long Beach, California



Project No. 2047.06