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February 10, 2015

Mr. Mark E. Detterman, Senior Hazardous Materials Specialist
Alameda County Environmental Health Department
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA. 94502-6577

Re: Perjury Statement Request.

"I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge."

Sincerely,



William W. Lewerenz, Partner

Emeryville Properties, LLC.



WORK PLAN FOR UNDERGROUND STORAGE TANK CLOSURE

FORMER CHARLES LOWE FACILITY,
1400 PARK AVENUE
EMERYVILLE, CALIFORNIA

Prepared for

Emeryville Properties
1400 Park Avenue
Emeryville, CA 94608-0445

Prepared by

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February 9, 2015

Project Number S016.001

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- 1A Historic Soil Samples Collected During UST Removal
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A - ACHCSA CLOSURE LETTER LETTER FOR CHROMEX VAULT - DECEMBER 13, 1995

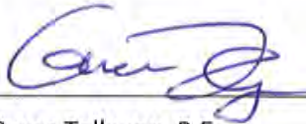
B - HISTORIC WELL SURVEY AND GROUNDWATER GRADIENT DOCUMENTATION

C - SURROUNDING WELL SEARCH INFORMATION

D - TABULAR FORMAT SITE CONCEPTUAL MODEL

Certification

I declare under penalty of perjury that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge. Information, conclusions, and recommendations in this document have been prepared by a California Professional Geologist and a California Professional Engineer.



Gwen Tellegen, P.E.
Principal Engineer

2-9-15

Date



1.0 INTRODUCTION AND PURPOSE

Terraphase Engineering Inc. (Terraphase) has prepared Work Plan, on behalf of Emeryville Properties LLC, describing the procedures required to close the former UST case at the Site located at 1400 Park Avenue in Emeryville, California (Site- see **Figure 1**). On May 23, 2014 the Alameda County Health Care Services Agency (ACHCSA) issued a letter requesting a work plan to address Site data gaps, create a Site Conceptual Model and to describe proposed soil and groundwater sampling procedures.

From the May 23, 2014 ACHCSA letter, it was apparent that the agency did not have many of the historic reports documenting remediation and assessment activities previously conducted at the site. To address this Data Gap in the ACHCSA records, Terraphase uploaded all of the previous site investigation reports onto GeoTracker on July 8, 2014.

On July 11, 2014, Terraphase and Emeryville properties met with Mr. Mark Detterman and provided hard copies of all previous investigation and reports as well as the No Further Action Letter for the former Chromex Facility, dated December 13, 1995 (See **Appendix A**). During this meeting, it was determined that the only outstanding issue requiring closure at the Site was the former Gasoline and Diesel/Waste Oil Underground Storage Tanks (USTs) removed from the Site on October 23, 1995. At that meeting, Terraphase was directed to prepare a Workplan for the assessment of soils in the immediate vicinity of the USTs and to evaluate the historic groundwater gradient at and surrounding the Site. ACHCSA indicated that closure of the USTs would be granted if no soils impact remained in place in the immediate area of the former USTs. Later, in a January 28, 2015 conversation with Mr. Mark Detterman of ACHSA indicated that a down-gradient groundwater sample may need to be collected as a part of the Closure Request for the USTs, depending on the results of the soil sampling and the gradient data presented in this Workplan.

Four previous groundwater samples have been collected from 1995 to 2007 from MW-1, which is located within 30 feet down-gradient of the former USTs, and no detectable levels of Benzene, Xylenes, Total Petroleum Hydrocarbons as gasoline (TPH gasoline) or TPH as diesel were found in the three samples collected from 1996 to 2007. Low levels of Toluene (4 ug/L) and Xylenes (7.8 ug/L) were detected in the initial sampling event by ASE on November 6, 1995. (ASE, 1996) These initial levels of Toluene Xylenes detected are far below the California Maximum Contaminant Levels (MCLs) for drinking water of 150 ug/L and 1750 ug/L for these compounds. This work proposes the collection of an additional groundwater sample ONLY if new soil samples collected from the immediate vicinity of the UST contain elevated levels of BTEX or TPH gasoline.

The purpose of this work is to obtain Site Closure by meeting the criteria for the State Water Resources Control Board's Low Threat Underground Storage Tank Case Closure Policy (LTCP) at the property located at 1400 Park Avenue in Emeryville, California.

The work plan proposes soil sampling at three locations adjacent to three former Underground Storage Tanks (USTs) at the Site.

The following information is presented in this Work Plan:

- A site background including history of uses and general site setting,
- A focused Site Conceptual Model,
- Soil sampling procedures and locations,
- Laboratory analyses of samples,
- Data presentation in a report with tables and maps
- A request for site closure follow the completion of this Workplan

2.0 SITE BACKGROUND

2.1 Site Location and Description

The Site is located at 1400 Park Avenue in the City of Emeryville, County of Alameda, California. The Site is situated in an industrial area and is surrounded by commercial/industrial development on all sides (see **Figure 1**). The Site is 2 acres in size, and is developed with a 60,000 square foot building and a total of 22,500 square feet of paved parking areas. The Site is entirely covered with concrete, asphalt or buildings, except the northeast area of the parking lot where there is a small dirt area, a hedge area, and planter boxes (about 150 square feet in size). The Site is currently occupied by Peet's Coffee and Tea corporate offices.

2.2 Site History

The portion of the Site that will be investigated during this assessment is the immediate area of three former USTs installed by the Charles Lowe Company. These USTs were discovered during Site improvement activities in 1995 after the move out by the Charles Lowe at the termination of their lease. Charles Lowe was a manufacturing company that produced and repaired marine and industrial equipment at the Site from 1973 to 1991. (ASE, 1996)

Charles Lowe also operated a minor electroplating and metal spraying facility in a small portion of the Site from 1973 until 1991. In 1992, the portion of the facility used by Chromex was dismantled and a former below grade concrete vault associated with Chromex's activities was removed. (Alton, 1995) Based on a series of subsurface investigations, the ACHCSA issued a "No Further Action" letter for the former chromium vault at the Site in December 1995 (see **Appendix A**). In 1995, Aqua Science Engineers (ASE) excavated and sampled soils beneath the former honing pit area and installed MW-4. Between 1994 and 1996 four monitoring wells (MW-1, MW-2, MW-3 and MW-4) were installed at the Site. These monitoring wells have been monitored intermittently between 1994 and 2007. In 1997, ASE successfully abandoned a half buried 700 gallon steel Above-Ground Storage Tank (AST) which was found to contain only rainwater. In Soil sampled from the vicinity of the tank, liquid sampled from within the tank, and groundwater sampled from MW-3, no significant concentrations of petroleum hydrocarbons were detected (ASE, 1997). In 1999, with ACHSCA approval, MW-3 was properly abandoned to accommodate the construction of a loading dock.

Underground Storage Tanks

In October 1995, ASE removed three 550 gallon USTs, two of which historically contained gasoline and one contained diesel/waste oil. During the removal, the gasoline tanks were noted to be intact, but several holes were observed in the waste oil/diesel UST. ASE noted staining and odor in soils at 9 feet bgs, or 12-24" beneath the bottoms of the former USTs (ASE, 1996). To document the conditions immediately below the tanks, ASE sampled soils at 9 feet bgs. Initial samples collected from below the USTs at 9 feet below ground surface were found to

contained TPH and BTEX (see **Table 1A**). The visually-impacted soils were over-excavated to a total depth of 12 feet bgs and confirmation samples were collected from the base of the excavation at the north and south end of the former USTs. A total of 65.29 tons of soil was removed from beneath and around the tanks. The excavation confirmation had no detected levels TPH -gasoline, diesel and motor oil; Benzene; Toluene; Ethylbenzene see **Table 1A** (ASE, 1996). Although groundwater began to enter the excavation at 11 feet bgs, ASE noted soil below groundwater appeared to be free of staining

Within two weeks of the UST removal, a groundwater sample taken from MW-1 which is located 30 feet from and down-gradient of the UST excavation. This sample had no detected Benzene, Ethylbenzene or TPH although low levels of Toluene at 4.0 ug/L and Total Xylenes at 7.8 ug/L were detected, which are far below the California Maximum Contaminant Levels (MCLs) for drinking water of 150 ug/L and 1750 ug/L for these compounds.

Well ID	Date	TPH Diesel mg/L	TPH Motor Oil mg/L	Benzene ug/L	Toluene ug/L	Ethylbenzene ug/L	Xylenes ug/L
MW-1	11/6/1995	<50	<250	<2	4.0	<2	7.8
California Drinking Water MCL		--	--	1	150	300	1750

Low levels of PCE, TCE and cis-1,2-DCE were also detected at concentrations consistent with other known offsite sources in the immediate vicinity of the Site, including the former Del Monte and Electro Coatings Inc. facilities. These solvents were never used at the Site. The UST tank pit excavation was lined with visquene and backfilled with imported soils, compacted and resurfaced with concrete. (ASE, 1996). A total of 65.29 tons of hydrocarbon impacted soil was removed during this excavation.

ASE mobilized to the site again, on March 21, 1997, to conduct a groundwater monitoring event. During the event, ASE personnel gauged depth to groundwater and established a groundwater gradient and direction of 0.0056 feet per foot towards the west. ASE sampled groundwater from MW-1, and submitted the sample for laboratory analysis for TPH as gasoline, TPH as diesel, TPH as motor oil, BTEX and MTBE. No concentrations of gasoline, diesel, BTEX or MTBE were detected in the sample collected from groundwater monitoring well MW-1.

In 2006, under ACHSCA oversight, The Reynolds Group (TRG) executed a groundwater well re-development and sampling program. The purpose of the sampling was to obtain Site Closure for the past release of petroleum hydrocarbons and a No Further Action Letter for the three former USTs. The results of their sampling demonstrated that no significant release of petroleum hydrocarbons to groundwater exists beneath the site. No gasoline, diesel, BTEX, MTBE or other fuel oxygenates were detected above laboratory reporting limits in any of the groundwater samples collected from MW1, MW2 and MW4 at the site. A compilation of historical groundwater analysis for BTEX, TPH and Fuel Oxygenates for all monitoring wells is found on

Table 1B, attached. Based on the results of the sampling, Emeryville Properties requested Site closure and that a No Further Action Letter be issued for the UST case. (TRG, 2007).

2.3 Geology and Hydrogeology

The Site is located on the tidal plane bounding the eastern edge of the San Francisco Bay (USGS, 1979). The soil boring log of monitoring well 1 (MW-1), generated by Alton Geoscience during well construction at the site on December 12, 1994, indicates that Site soils are comprised of sandy clay to a depth of 10.5 feet bgs; and from 10.5 feet to 24 feet bgs, the material alternates between lenses of clayey gravel, gravel and sandy clay. The boring log indicates groundwater was encountered at a depth of approximately 10 feet bgs.

Shallow groundwater flow measured at the Site has consistently been shown to be to the west, west-northwest and southwest in 4 groundwater gauging events in 1994, 1996, 1997 and 2007 (Alton Geoscience, 1995, ASE 1996, ASE, 1997, TRG 2007). Although groundwater gradient and flow direction can fluctuate temporally with rain events, previous groundwater gauging data at the Site has always been towards the west or west-northwest or southwest. **Figure 2** depicts groundwater gradients at the Site over time with the date of measurement. A table used to compare historic groundwater gradients measured and the two monitoring well surveys at the Site from 1994 to 2007 is attached in **Appendix B – Table A**. This data shows that the two monitoring surveys done at the site resulted in nearly the same well elevation differences between the monitoring wells on-Site, and are both relatively accurate, just using different base elevations. In addition, this data was used to calculate the groundwater elevations to the based Morrow Survey. This in turn was used to plot elevations for the wells and create the overlaying gradients in Figure 2. The calculated groundwater flow rates were found to be accurate in all reports except The Reynolds Group report, where the rate was misreported as 0.67 ft/ft, when it should have been 0.0067 ft/ft. The direction of groundwater flow for many of the older Alton and ASE reports failed to show the southerly component of flow towards MW4 (or MW3).

2.4 Surrounding Land Uses

The Site is surrounded:

- North: Cliff Consulting Inc. and Modern Twist Inc.
 - East: Varinsky Associates
 - South: Precious Stone Inc. and Prometheus Real Estate Group
 - West: Pacific Flooring Supply, Eastbay Badminton Association, Royalmailers.com, and ASAP Distribution
-

3.0 SITE CONCEPTUAL MODEL

3.1 Regional Geology and Hydrogeology

The site is located on the tidal plane bounding the eastern edge of the San Francisco Bay. The sediments are Holocene interfluvial basin deposits consisting of poorly sorted silty clays overlying alluvial fan deposits of interfingering clayey gravel and sandy silty clay lenses (USGS, 1979). According to available geologic maps of the area, the Site is underlain by quaternary aged sediments classified as the Temescal Formation. The Temescal Formation consists of alluvial fan deposits comprised of interfingering lenses of clayey gravel, sandy silty clay and sand-clay-silt mixtures (USGS, 1957).

According to the California Regional Water Quality Control Board – San Francisco Bay Basin Plan (CRWQCB, 2013), the Site is located within the Santa Clara Valley-East Bay Plain groundwater basin. Groundwater in this area has designated existing beneficial uses for municipal domestic supply, agricultural, industrial and industrial process supply. The shallow groundwater in the East Bay Plain in the vicinity of the Site has been impacted by chlorinated solvents (TCE, PCE, cis 1,2 DCE and vinyl chloride) by many neighboring sites (Geotracker, 2015, Alton 1995).

Terraphase conducted research on wells supply and other permitted wells within one mile of the Site. Using information provided by the Alameda County of Public Works, Water Resources Department, it was determined that there are **no groundwater production wells** located within 2,000 feet of the Site (see **Figure 3** – Supply Well Radius Map).

Research of nearby sites on the State of California's GeoTracker on-line database, as well as historical research conducted by others (Alton, 1995) indicates that regional groundwater flow is generally towards the west, ranging from the northwest to the southwest. **Figure 4** is a compilation of the groundwater gradients for seven properties in the immediate area of the Site.

3.2 Site Geology and Hydrogeology

Monitoring well 1 (MW-1), which is located approximately 30 feet from the UST excavation was installed in 1994 by Alton Geoscience. Their boring log indicates that Site soils are comprised of sandy clay to a depth of 10.5 feet bgs; and from 10.5 feet to 24 feet bgs, the material alternates between lenses of clayey gravel, gravel and sandy clay (Alton, 1995). This boring log indicates groundwater was encountered at a depth of approximately 10 feet bgs. Recent Groundwater gauging data, from January 2015, indicates a depth to groundwater of 8.35 feet bgs at MW-1.

Historical Groundwater gradients at the Site have been towards the west and the west-northwest and southwest (Alton, 1995; ASE, 1996, 1997; Reynolds (corrected) 2007) at rates of 0.0048 to 0.007 feet per foot.

Terraphase conducted water level gauging of the only remaining monitoring wells at the Site (MW1 and MW2) on January 30, 2015. MW4 was noted to have been paved over by the construction of a new 10 foot wide sidewalk on Horton Street. The elevations measured in MW1 and MW2 indicated a groundwater flow direction towards the southwest at a gradient of 0.0048 feet per foot. This data is consistent with the flow direction found in most recent historical groundwater gauging event in 2007, when The Reynolds Group established a south-southwesterly gradient of 0.0067 feet per foot (The Reynolds Group gradient as calculated and corrected by Terraphase). See **Figure 2** for a depiction of historic and current groundwater gradients measured at the Site.

The closest surface water body to site appears to be San Francisco Bay which is located 0.45 miles west of the Site.

3.3 History of UST Removal, Soil and Groundwater Sampling

In October 1995, ASE uncovered three underground storage tanks, located in the north-central portion of Site, approximately 110 feet west-southwest of the eastern property boundary line and approximately 85 feet north-northwest of the existing Charles Lowe building. After their discovery, ASE removed three 550 gallon USTs, two of which historically contained gasoline and one contained diesel/waste oil. During the removal, the gasoline tanks were noted to be intact, but several holes were observed in the waste oil/diesel UST. ASE noted staining and odor in soils at 9 feet bgs, or 12-24" beneath the bottoms of the former USTs. To document the conditions immediately below the tanks ASE sampled soils at 9 feet bgs (ASE, 1996). The visually-impacted soils were over-excavated to a total depth of 12 feet bgs and confirmation samples were collected from the base of the excavation after all visually impacted soils had been removed by over-excavation. Two soil samples were collected as final confirmation samples from 12 feet bgs at the north and south ends of the tank excavation. These final excavation confirmation samples had no detected concentrations of Benzene; Toluene; Ethylbenzene, and Total Xylenes (BTEX) TPH gasoline, TPH diesel or TPH motor oil (ASE, 1996). Although groundwater began to enter the excavation at 11 feet bgs, ASE noted soil below groundwater appeared to be free of staining. A total of 65.29 tons of hydrocarbon impacted soil was removed during this excavation.

Since groundwater was identified in the UST excavation, shortly after the UST removal, ASE mobilized to the site on November 6, 1995, to purge and collect a groundwater sample from the nearest downgradient groundwater well, MW-1, located approximately 30 feet from the UST excavation. The groundwater sample had no detected Benzene, Ethylbenzene or TPH and had low levels of Toluene at 4.0 ug/L and Total Xylenes at 7.8 ug/L, which are far below the California Maximum Contaminant Levels (MCLs) for drinking water of 150 ug/L and 1750 ug/L for these compounds. Low levels of PCE, TCE and cis-1,2-DCE were also detected at concentrations consistent with other know offsite sources in the immediate vicinity of the Site including the former Del Monte plant and the former Electro Coatings Inc. facilities. These solvents were never used at the Site.

After the results of the soil samples were received, ASE contacted Mr. Brian Oliva of the Alameda County Health Care Services Agency, who was overseeing remediation at the site. ASE explained the excavation and removal activities in addition to the results of the soil and groundwater sampling. Mr. Oliva concurred with ASE's recommendation to conduct no further overexcavation or soil-remedial activities, with respect to the USTs, and Mr. Oliva agreed to allow ASE to backfill, compact and resurface the excavation. The tank pit excavation was lined with visquene and backfilled with imported soils, compacted and resurfaced with concrete. (ASE, 1996)

ASE mobilized to the site again, on March 21, 1997, to conduct a groundwater monitoring event. During the event, ASE personnel gauged depth to groundwater and established a groundwater gradient and direction of 0.0056 feet per foot towards the west. ASE sampled groundwater from MW-1, and submitted the sample for laboratory analysis for TPH as gasoline, TPH as diesel, TPH as motor oil, BTEX and MTBE. No concentrations of gasoline, diesel, BTEX or MTBE were detected in the sample collected from groundwater monitoring well MW-1.

In 2006, under ACHSCA oversight, The Reynolds Group (TRG) re-developed and sampled the groundwater monitoring wells at the Site. The purpose of the sampling was to obtain Site Closure for the past release of petroleum hydrocarbons and a No Further Action Letter for the three former USTs. The results of their sampling demonstrated that no significant release of petroleum hydrocarbons to groundwater exists beneath the site. No gasoline, diesel, BTEX, MTBE or other fuel oxygenates were detected above laboratory reporting limits in any of the groundwater samples collected from MW1, MW2 and MW4 at the Site. Based on the results of the sampling, Emeryville Properties requested Site closure and that a No Further Action Letter be issued for the UST case. (TRG, 2007)

3.4 Source

A release of hydrocarbons to soils, related to former operation of USTs by the Charles Lowe Company, was identified during UST removal by ASE in October of 1995. Two of the tanks reportedly contained gasoline and one reportedly contained waste/oil diesel fuel. Initial soil samples collected from the bottom of the excavation at 9 feet bgs contained detectable levels of TEX, TPH Gasoline, TPH Diesel, TPH Motor Oil in three samples and benzene in two of the three samples.

The impacted soils found at 9 feet bgs beneath the tanks were over-excavated, removed and properly disposed of offsite. A total of 65.29 tons of hydrocarbon impacted soils were removed from the vicinity of the USTs. Final soil confirmation samples were taken from the bottom of the tank pit excavation at 12 feet bgs. No BTEX and TPH Gasoline and TPH Diesel or TPH Oil were detected and one sample had only a low level of Xylenes detected. This indicated that the hydrocarbon impacted source area soils had been removed by the excavation. Following the receipt of the laboratory, ASE sought approval from the agency to cease excavation activities and under the direction of Mr. Brian Oliva of ACHSCA the excavation was backfilled. A table of the soil sample analytical results collected during the UST removal and overexcavation is

attached at **Table 1A**. The results of the final confirmation soil samples left in place are presented below.

Sample Name	Sample Date	Sample Depth (feet bgs)	Sample Location Description	TPH Gasoline (mg/kg)	TPH Diesel (mg/kg)	TPH Motor Oil (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)
Soil Samples From Bottom of UST Excavation, After Overexcavation										
North, 12'	10/23/1995	12	Northern end, bottom of excavation, after	<1.0	<1.0	<5.0	<0.005	<0.005	<0.005	<0.005
South, 12'	10/23/1995	12	Southern end, bottom of excavation after	<1.0	<1.0	<5.0	<0.005	<0.005	<0.005	0.027

Since groundwater was identified in the UST excavation, shortly after the UST removal, ASE mobilized to the site on November 6, 1995, to purge and collect a groundwater sample from the nearest downgradient groundwater well, MW-1, located approximately 30 feet from the UST excavation. This sample was found to have no detected Benzene, Ethylbenzene or TPH and had low levels of Toluene at 4.0 ug/L and Total Xylenes at 7.8 ug/L, which are far below the California Maximum Contaminant Levels (MCLs) for drinking water of 150 ug/L and 1750 ug/L for these compounds.

In 2007, the on-Site groundwater monitoring wells were developed to ensure that representative, non-turbid groundwater samples were collected. Following redevelopment, groundwater sample were collected from MW1 (the well 30 feet down gradient of the former USTs as well as from MW2 and MW4 located further downgradient from the ASTs. No gasoline, diesel, BTEX, MTBE or other fuel oxygenates were detected above laboratory reporting limits in any of the groundwater samples collected from MW1, MW2 and MW4. A table of all groundwater samples collected from MW-1 and the detected levels of BTEX and TPH is presented below, all results are in ug/L.

Well ID	Dates	TPH Gasoline	TPH Diesel	TPH Motor Oil	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	ETBE	TAME	TBA
MW-1	11/6/1995	--	<50	<250	<2	4.0	<2	7.8	---	--	--	--	--
	12/13/1996	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--
	3/21/1997	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<6	--	--	--	--
	1/15/2007	<50	<0.1	--	<1	<5	<5	<5	<1	<1	<1	<1	<10

No hydrocarbon impact to groundwater at the Site has been identified since the initial sample was collected in 1995. A summary of the results of groundwater sampling for hydrocarbons from all the on-Site wells is found in **Table 1B –Historic Groundwater Sample Results**.

3.5 Distance to Closest Water Supply Wells

As requested by Mr. Mark Detterman of the ACHCSA, Terraphase researched and identified all nearby supply wells. A mapping of results of the search information, provided by the Alameda

County of Public Works, Water Resources Department, determined that there are no groundwater production wells (of depths greater than or equal to 92 feet bgs) located within 2,000 feet of the Site (see **Figure 3** – Surrounding Well Search). The well search information is documented in **Appendix C**. The closest water supply well was located approximately 3,300 feet southeast of the Site and was found to be a 92 foot deep Industrial Well, owned by Mark Champion

3.6 Tabular Format Site Conceptual Model

As requested by ACHCSA, the Site Conceptual Model summarized in Section 3 of this report is also presented in tabular found in **Appendix D** of this report.

4.0 DRILLING PROCEDURES AND LOCATIONS

4.1 Pre-field Activities

A Site-specific health and safety plan (HASP) will be prepared for the investigation activities. Site personnel, including onsite subcontractors and regulatory personnel, will be required to familiarize themselves with the HASP and sign an acknowledgement that they have read the HASP. The HASP will identify the specific chemical compounds that have been encountered at the Site. All personnel will wear the proper personal protective equipment (PPE) while onsite, as outlined in the HASP.

4.2 Permitting

We assume that no permits will be required for this work because of the shallow nature of the borings (less than 10 feet) and because the borings will be backfilled and

4.3 Utility Clearance

Prior to any subsurface work, sample locations will be marked using marking paint. The Underground Service Alert of Northern California (800-227-2600) will be notified at least 48-hours prior to drilling. Utility notifications will be renewed as necessary during the course of the field investigation. Terraphase will retain an analytical laboratory to perform chemical analyses of soil samples. Field work planning will include procurement of equipment and supplies.

4.4 Groundwater Monitoring Well Gauging

To satisfy the LTCP media specific criteria for groundwater, Terraphase mobilized to the Site on January 30, 2015 and gauged depth to water in existing groundwater wells on the site, MW-1 and MW-2. Groundwater well MW-4 was not gauged because it had been covered and destroyed by a recent sidewalk expansion on Horton Street. Depth to water data collected during this gauging event of MW1 and MW2 indicated a groundwater flow direction towards the southwest at a gradient of 0.0048 feet per foot.

This data is consistent with the most recent historical groundwater gauging event in 2007, when The Reynolds Group established a south-southwesterly flow direction. During the soil boring process, Terraphase will gauge the elevation of first groundwater, if encountered, in the soil borings using a water level meter.

4.5 Drilling Procedures

To satisfy the LTCP media specific criteria for direct contact and the media specific criteria for both outdoor and indoor air, Terraphase proposes to advance 3 hand auger soil borings surrounding the former locations of the 3 USTs. Three soil samples will be collected from each

soil boring location at depths of 2 feet, 5 feet and at the bottom of each boring, directly above groundwater, which is estimated to be around 10 feet. The exact depth of the soil samples being collected will be modified if discolored or odorous soils are encountered or if elevated PID readings are found.

Field personnel advancing the hand auger borings will note the soil type and will screen the soil cuttings with a PID. Drive samples will be collected, using EPA method 5035, from the hand auger, from the selected sample depths, using clean stainless steel sleeves. Soils sampled for VOC analysis will be collected from the deepest ring of driven sleeves using a TerraCore™ kit, which includes two 40ml glass vials with sodium bisulfate preservative, one 40 ml glass vial with methanol preservative and one unpreserved 40ml glass vial. The sample containers will be provided by the analytical laboratory. In accordance with EPA Method 6035.

Soil cuttings generated during hand auguring that are not sampled will be returned to the boring. The remaining portion of the soil borings will be backfilled with hydrated bentonite and resurfaced to match the existing site conditions. The surface will be repaired with neat cement grout after sampling and each boring will be backfilled with hydrated bentonite chips.

4.6 Boring Locations

To satisfy the LTCP media specific criteria for direct contact and indoor/outdoor air, 3 boring were located around the former excavation area surrounding the removed USTs, and are focused on the estimated perimeter area the tank excavation (see **Figure 5**). These soil boring locations will provide sufficient information to determine if any remaining hydrocarbon impacts remain in the vicinity of the USTs and define the lateral extent of any identified hydrocarbon impact to Site soils. The soil borings will form a semi-circle around the location of the former USTs with each point located on the down-gradient side of the former USTs.

4.7 Groundwater Sampling

To satisfy the LTCP media specific criteria for Groundwater, if soil sample laboratory analytical results from the vicinity of the former USTs indicate that BTEX or significant hydrocarbon concentrations are present in Site soils, Terraphase will sample groundwater from MW-1 and MW-2, which, according to data obtained during the two most recent groundwater gauging events, are located down gradient from the former USTs. These groundwater samples will be collected following a 10 volume purge of the monitoring wells and will be representative of down groundwater conditions with low turbidities and no entrained sediments, that would be found in grab groundwater samples collected from temporary wells or borings.

4.8 Soil Sample Analyses

The three soil boring samples from each soil boring location will be analyzed using the EPA Method 8260 for TPH gas and diesel, BTEX and oxygenates. Chain of custody procedures will be followed in transporting the samples to the analytical laboratory.

4.9 Site Investigation Schedule

The Site investigation will proceed within 15 days of authorization from the ACHCSA.

4.10 Data Evaluation and Reporting

A Soil Sampling Report and a Site Closure Report will be submitted once analytical data is received and has been evaluated. This report will be submitted to the ACHCSA and will include tables, figures, and sample results. In addition, Terraphase will upload the data to the SWRCB Geotracker on-line database and to the Alameda County FTP Site.

REFERENCES

Alameda County Health Care Services Agency (ACHCSA). December 13, 1995. Closure Letter for the Investigation of the Chromium Vault, Former Chromex/Charles Lowe Facility, 1400 Park Avenue, Emeryville, California.

Alton Geoscience. May 17, 1995. Supplementary Site Assessment Report, Former Chromex Facility, 1400 Park Avenue, Emeryville, California

Aqua Science Engineers, Inc. March 21, 1997. Groundwater Monitoring Report Sampling at Emeryville Properties, 1400 Park Avenue, Emeryville, California.

Aqua Science Engineers, Inc. January 12, 1996. Project Report – Underground Storage Tank Removal for Emeryville Properties, 1400 Park Avenue, Emeryville, California.

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Aqua Science Engineers, Inc. January 28, 1997. Project Report – Half-Buried Tank Abandonment for Emeryville Properties, 1400 Park Avenue, Emeryville California.

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Aqua Science Engineers, Inc. March 26, 1999. Letter to Mr. Jeremy Ross, Peet's Coffee, 1400 Park Avenue, Emeryville, California.

The Reynolds Group (TRG). January 31, 2007. Groundwater Well Redevelopment and Sampling Report – Request for Site Closure – 1400 Park Avenue, Emeryville, California,


U.S. Geological Survey (USGS). Professional Paper 943, Helley, E.S., Lajoie, K.R., Spangle, W.E., and Blair, M.L. 1979. Flatland Deposits of the San Francisco Bay Region, California:

USGS. 1957. Aerial and Engineering Geology of the Oakland west quadrangle, CA. By Radbruch, D.H. Miscellaneous Geologic Investigations Map I-239. USGS National Geologic Map Database Website. http://ngmdb.usgs.gov/ngm-bin/pdp/zui_pdpViewer.pl?id=19733. January 23.

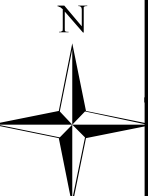

FIGURES



Legend

 Site Boundary

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Esri, HERE, DeLorme, TomTom,

	<p>SAFETY FIRST</p>	<p>CLIENT: Emeryville Properties LLC</p>	<p>Site Location Map</p>
		<p>PROJECT: 1400 Park Ave Emeryville, Ca</p>	
		<p>PROJECT NUMBER: S016.001.001</p>	<p>FIGURE 1</p>

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Legend

- Groundwater Monitoring Well
- 11.32 ASE 1996 (adj)
- 10.94 ASE 1997 (adj)
- 10.56 Reynolds 2007
- 10.26 Terraphase 2015



 	CLIENT: Emeryville Properties LLC	Site Plan With Groundwater Elevation Contours FIGURE 2
	PROJECT: 1400 Park Ave Emeryville CA	
	PROJECT NUMBER: S016.001.001	

Source:



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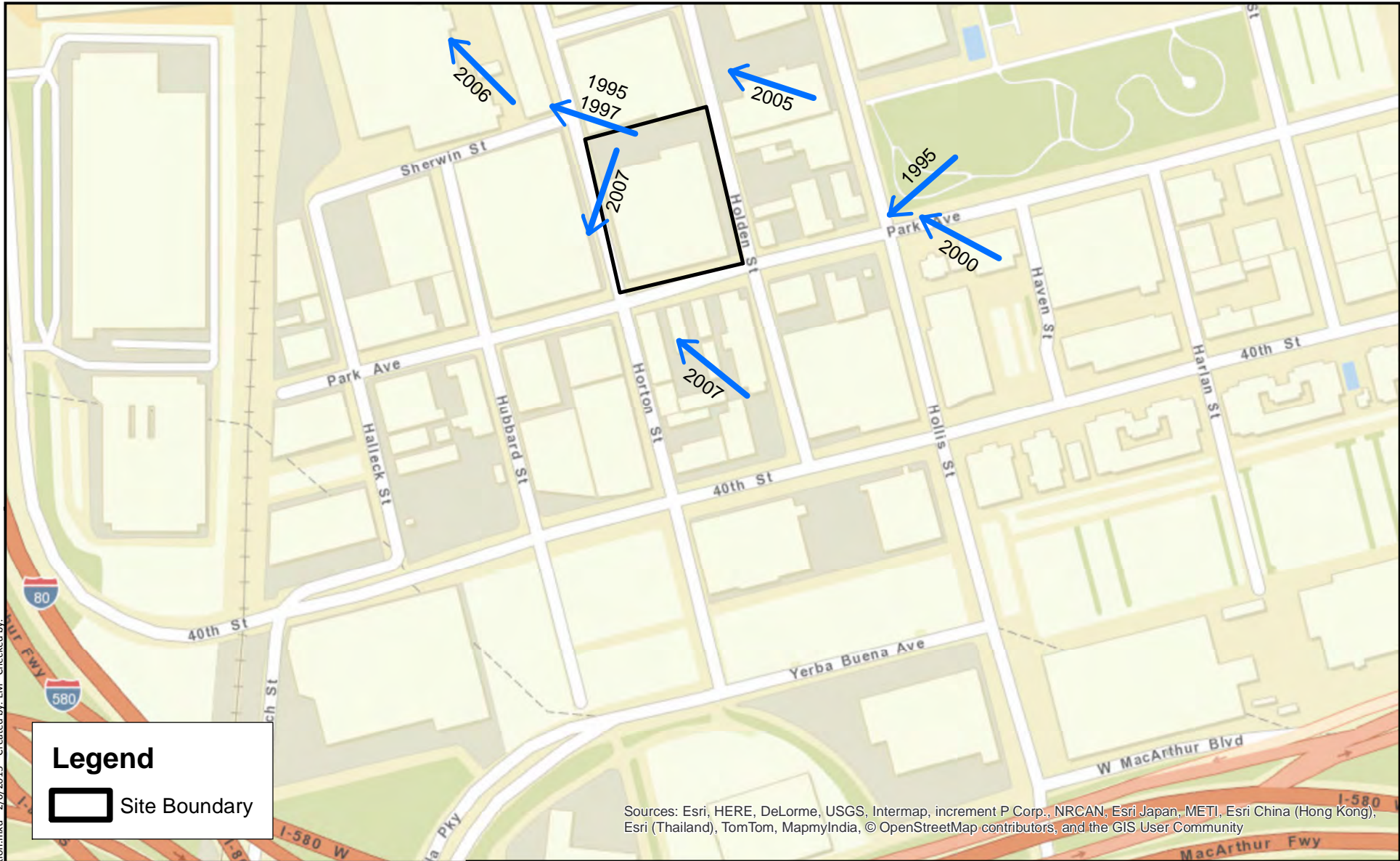
* All Wells with total depth greater than 90 feet BGS are plotted

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community




SAFETY FIRST	CLIENT:	Emeryville Properties LLC	Surrounding Well Search 1400 Park Avenue Site Emeryville California
	PROJECT:	1400 Park Ave Emeryville CA	
	PROJECT NUMBER:	S016.001.001	

Figure 3

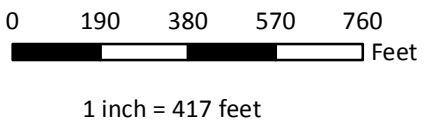




Legend

 Site Boundary

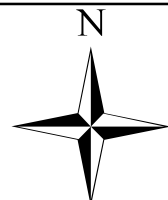
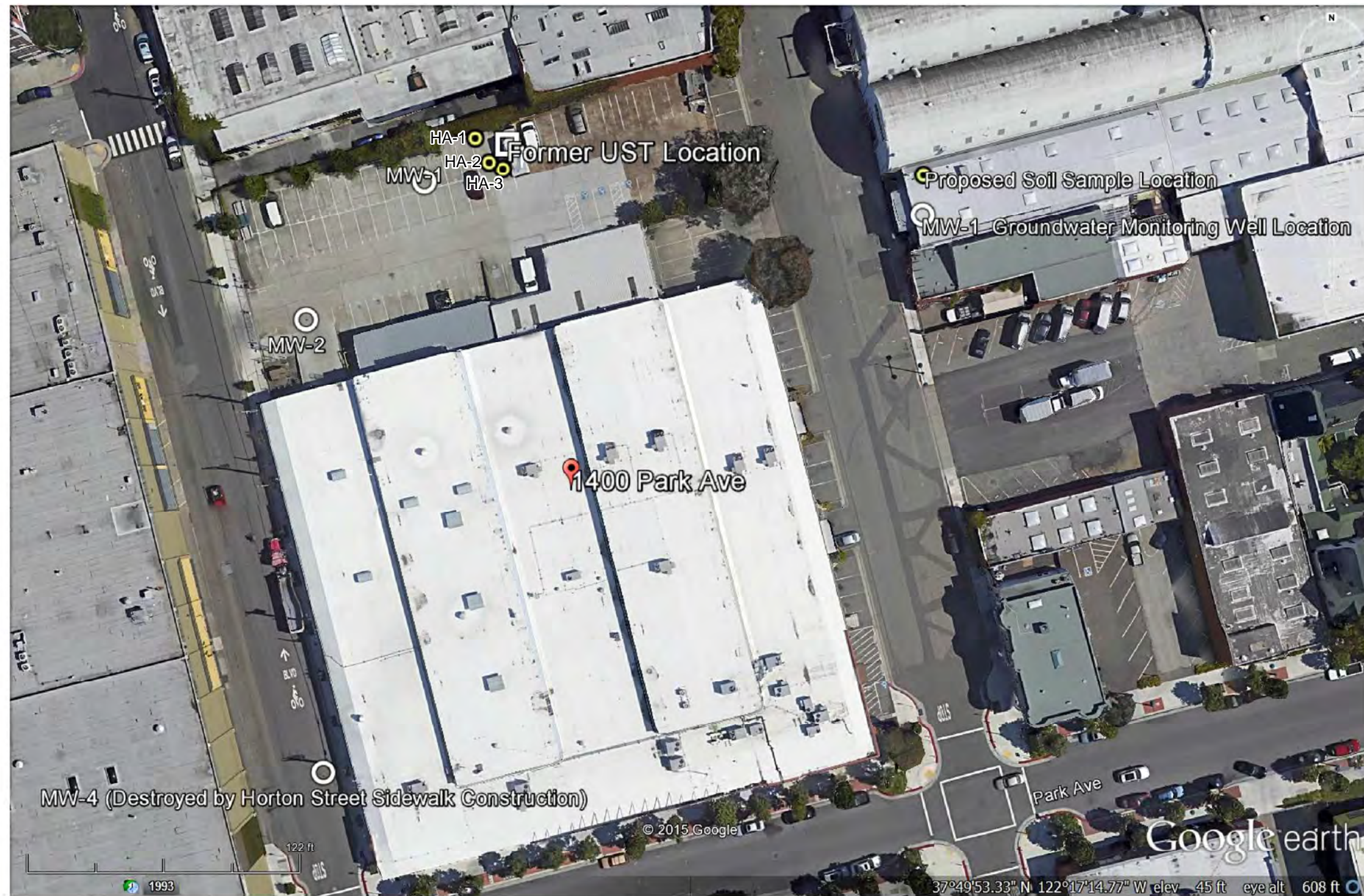
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community


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 SAFETY FIRST 	CLIENT: Emeryville Properties LLC	Regional Groundwater Gradients
	PROJECT: 1400 Park Ave Emeryville CA	
	PROJECT NUMBER: S016.001.001	FIGURE 4

Source:



<p>SAFETY FIRST</p> 	<p>CLIENT: Emeryville Properties LLC</p>	<p>UST Location & Proposed Sample Locations</p>
	<p>PROJECT: 1400 Park Ave Emeryville, CA</p>	
	<p>PROJECT NUMBER: S016.001.001</p>	<p>FIGURE 5</p>

TABLES

Table 1A - Historic Soil Samples Collected During UST Removal
1400 Park Avenue, Emeryville, CA

Sample Name	Sample Date	Sample Depth (feet bgs)	Sample Location Description	TPH Gasoline (mg/kg)	TPH Diesel (mg/kg)	TPH Motor Oil (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)
Removed Soil Samples from Bottom of UST Excavation, Before Overexcavation										
North, 9'	10/23/1995	9	North end, bottom of excavation, below gas UST	140	4,800	14,000	<0.005	0.55	0.81	7.4
Middle, 9'	10/23/1995	9	Middle, bottom of excavation below gas UST	1,300	2,600	8,000	0.41	6.1	13	110
South, 9'	10/23/1995	9	Southern end, bottom of excavation below diesel/motor oil UST	1,100	2,100	5,800	0.22	5.6	5	33
Soil Samples Remaining In Place, After Overexcavation										
North, 12'	10/23/1995	12	Northern end, bottom of excavation, after overexcavation	<1.0	<1.0	<5.0	<0.005	<0.005	<0.005	<0.005
South, 12'	10/23/1995	12	Southern end, bottom of excavation after overexcavation	<1.0	<1.0	<5.0	<0.005	<0.005	<0.005	0.027

Table 1B - Historic Groundwater Sample Results
1400 Park Avenue, Emeryville, CA

Well ID	Sampling Date	TPH Gasoline (ug/L)	TPH Diesel (ug/L)	TPH Motor Oil (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)
MW-1	11/6/1995	--	<50	<250	<2	4.0	<2	7.8	---	--	--	--	--
	12/13/1996	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--
	3/21/1997	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--
	1/15/2007	<50	<100	--	<1	<5	<5	<5	<1	<1	<1	<1	<10
MW-2	12/13/1996	--	--	--	<2	<2	<2	<2	--	--	--	--	--
	1/15/2007	<50	<100	--	<1	<5	<5	<5	<1	<1	<1	<1	<10
MW-3	12/13/1996	--	--	--	<2	<2	<2	<2	<5	--	--	--	--
	1/15/2007	D	D	D	D	D	D	D	D	D	D	D	D
MW-4	12/13/1996	<50	140**	<500	<2	<2	<2	<2	--	--	--	--	--
	1/15/2007	<50	<100	--	<1	<5	<5	<5	<1	<1	<1	<1	<10
California Drinking Water MCL		--	--	--	1	150	300	1750	<1	<1	<1	<1	<10

Notes:

MTBE- Methyl Tertiary Butyl Ether

DIPE-Diisopropyl Ether

ETBE- Ethyl tert-butyl ether

TAME- Tertiary-Amyl Methyl Ether

TBA- Tert-Butyl Alcohol

** = Chromatogram pattern does not resemble diesel standard

ddJHNWEO

D - Well Destroyed with ACHCA Approval

Appendix A

**ACHCSA Closure Letter For Investigation of the Chromium Vault, Former
Chromex/Charles Lowe Facility–December 1995**

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



RAFAT A. SHAHID, DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH

1131 Harbor Bay Parkway
Alameda, CA 94502-6577
(510) 567-6777

December 13, 1995

William Lewerenz
Emeryville Properties,
699 Second Street
San Francisco, CA 94107

Subject: Closure Letter for Investigation of the Chromium Vault, Former Chromex/Charles Lowe Facility, 1400 Park Avenue, Emeryville Ca 94608

Dear Mr. Lewerenz:

This office has received the "Supplemental Site Assessment Report" dated May 17, 1995, and submitted by Alton Geoscience, the consultant of record for remediation actions regarding the former chromium vault. Thank you for submission of the document.

Review of the report indicates that low levels of chromium in the "dissolved phase" remain at the site. However, the low levels of chromium remaining in the groundwater do not appear to pose a threat to the public health and the environment. Therefore, with regards to the investigation of the former chromium vault located at the site, this office, with the concurrence of the Regional Water Quality Control Board, finds that "No Further Work" will be required at this time.

In light of these levels, and the potential for on-site migration from other sources, monitoring wells should not be destroyed or otherwise removed from the site. By allowing the wells to remain, you will be able to insure that any on-site migration from an off-site source that may be encountered in the future, is not the responsibility of activities that have taken place on site.

This office commends the work undertaken regarding the investigation. If you have any questions regarding this document, please contact this office. The number is (510) 567-6737.

page 2 of 2

Prior to the closure of the site regarding the former chromium vault, it will be necessary for you to remit the sum of \$3000.00 dollars. This sum represents the amount owed in the deposit/refund account set up for oversight activities. Upon receipt of this amount, the site will be removed from the "active list" of oversight cases.

Sincerely,



Brian P. Oliva, REHS, REA
Senior Hazardous Materials Specialist

cc: Jun Makashima, Acting Director Alameda County Department of
Environmental Health,
Gordon Colman, Acting Chief, Alameda County Department of
Environmental Health,
Sum Arigala, Regional Water Quality Control Board
Ariu Levi, Manager, North Area, Alameda County
Mike Benjamin, Thomas Short Co., 1685 34th St.,
Oakland, CA 94608

SA

REF./
A/C NO. S11c Site

COUNTY OF ALAMEDA
OFFICE OF THE AUDITOR-CONTROLLER

DATE: 1/19/95

Brick
611-212

MISCELLANEOUS RECEIPT

No 768131 94608

\$3,000.00
DOLLARS

R
-
H

RECEIVED FROM:	<u>Emeryville Properties 3963 Woodside Court Lafayette CA</u>	
FOR:	<u>Site: Charles Lowe Facility 94599</u>	
	<u>1400 Park Avenue, Emeryville Ca. 94608</u>	
RECEIVED BY:	<u>Josephine Harris</u>	DEPT. NO.: <u>4580</u>

CASH PERSONAL/CASHIER'S CHECK/M. O. # 1355 OTHER:

110-1 (Rev 10/85) [0134E (08)] 3-Part Distribution: White - Payor Yellow & Pink - Depart.

Emeryville Properties,
699 Second Street
San Francisco, CA 94107

Subject: Closure Letter for Investigation of the Chromium Vault, Former Chromex/Charles Lowe Facility, 1400 Park Avenue, Emeryville Ca 94608

Dear Mr. Lewerenz:

This office has received the "Supplemental Site Assessment Report" dated May 17, 1995, and submitted by Alton Geoscience, the consultant of record for remediation actions regarding the former chromium vault. Thank you for submission of the document.

Review of the report indicates that low levels of chromium in the "dissolved phase" remain at the site. However, the low levels of chromium remaining in the groundwater do not appear to pose a threat to the public health and the environment. Therefore, with regards to the investigation of the former chromium vault located at the site, this office, with the concurrence of the Regional Water Quality Control Board, finds that "No Further Work" will be required at this time.

In light of these levels, and the potential for on-site migration from other sources, monitoring wells should not be destroyed or otherwise removed from the site. By allowing the wells to remain, you will be able to insure that any on-site migration from an off-site source that may be encounter in the future, is not the responsibility of activities that have taken place on site.

This office commends the work undertaken regarding the investigation. If you have any questions regarding this document, please contact this office. The number is (510) 567-6737.

Appendix B

Historic Well Survey And Groundwater Gradient Documentation

**Appendix B - Table A
Groundwater Elevation Measurements and Surveys**

Well ID	Casing Elevation - Archer Survey		Elevation difference between wells	DTW 1/3/1995	Groundwater Elevation 1/3/95 (Alton)	DTW 12/13/1996	Groundwater Elevation 12/13/96 To Archer Survey	DTW 3/21/1997	Groundwater Elevation 3/21/97 To Archer Survey	DTW 1/15/2007	Groundwater Elevation 1/15/2007 (The Reynolds Group)	Terraphase DTW 1/30/2015	Groundwater Elevation 1/30/2015 (Terraphase)
MW-1	16.71	MW1 & MW2	2.72	8.31	8.4	7.85	8.86	8.73	7.98	8.23	8.48	8.35	8.36
MW-2	13.99	MW2 & MW3	-3.7	5.8	8.19	5.39	8.6	6.23	7.76	5.65	8.34	5.74	8.25
MW-3	17.69	MW1 & MW3	0.98	8.32	9.37	7.69	10	8.81	8.88	WA	--	WA	--
MW-4	--			--	--	3.42		4.32					

MW-3 Has Highest Elevation

Notes:

WA = Well Abandoned with ACHCSA Approva Data is not available

WI = Well inaccessible because sidewalk constructed over it

Well ID	Casing Elevation - Morrow Surveying		Elevation difference between wells	DTW 1/3/1995	Groundwater Elevation 1/3/95 (Alton)	DTW 12/13/1996	Groundwater Elevation to Morrow Survey 12/13/96	DTW 3/21/1997	Groundwater Elevation 3/21/97 To Morrow Survey	DTW 1/15/2007	Groundwater Elevation 1/15/2007 (The Reynolds Group)	Terraphase DTW 1/30/2015	Groundwater Elevation 1/30/2015 (Terraphase)
MW-1	19.17	MW1 & MW2	2.74	8.31	10.86	7.85	11.32	8.73	10.44	8.23	10.94	8.35	10.82
MW-2	16.43	MW2 & MW3	-3.71	5.8	10.63	5.39	11.04	6.23	10.2	5.65	10.78	5.74	10.69
MW-3	20.14	MW1 & MW3	0.97	5.8	14.34	7.69	12.45	8.81	11.33	WA	--	WA	--
MW-4	14.6			--	--	3.42	11.18	4.32	10.28	4.32	10.28	--	--

MW-3 Has Highest Elevation

Notes:

WA = Well Abandoned with ACHCSA Approva Data is not available

WI = Well inaccessible because sidewalk constructed over it



FIGURE 3
 SITE PLOT PLAN WITH
 GROUNDWATER
 ELEVATION
 CONTOURS

Site Name: Emeryville Properties
 1400 Park Avenue, Emeryville, CA

Prepared By:
 The Reynolds Group

Project No: 7103
 Date: January 2007

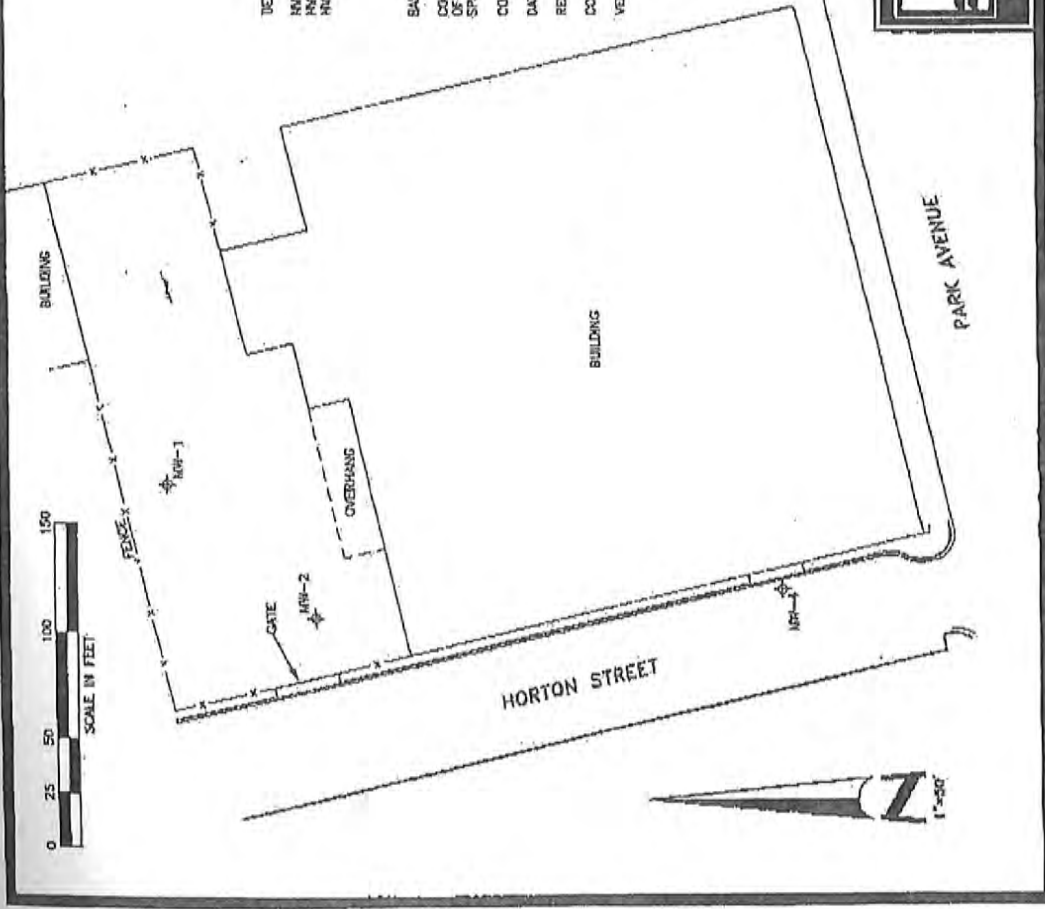


Note: Monitoring well locations
 See Appendix E for actual
 survey locations

- Legend:
- ⊕ - Groundwater Monitoring Well
 - MW-4
 - - - Groundwater Elevation Contour

Monitoring Well Exhibit

Prepared For:
Reynolds Group



DESCRIPTION	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEV. (PVD)	ELEV. (BDO)
MW-1	2120287.4	6045257.7	37.8319175	-122.2867999	19.17	19.42
MW-2	2120213.9	6045261.1	37.8317283	-122.2870089	16.43	16.64
MW-3	2120026.7	6045307.8	37.8311441	-122.2865542	14.60	14.72

BASIS OF COORDINATES AND ELEVATIONS:
 COORDINATES ARE CALIFORNIA STATE PLANE ZONE 3 COORDINATES FROM GPS OBSERVATIONS USING UNIVERSITY OF CALIFORNIA BAY AREA DEFORMATION CORES SPREADSHEET COORDINATE FILES AND BASED ON THE CALIFORNIA SPATIAL REFERENCE CENTER DATUM, REFERENCE EPOCH 2000.0.
 COORDINATE DATUM IS NAD 83(1983).
 DATUM ELLIPSOID IS GRS80.
 REFERENCE EPOCH IS 1989.0.
 CORE STATIONS USED WERE DW4 AND MW3.
 VERTICAL DATUM IS NAVD 83 FROM GPS OBSERVATIONS.

Former Chromex Facility
 1400 Park Avenue
 Emeryville
 Alameda County
 California

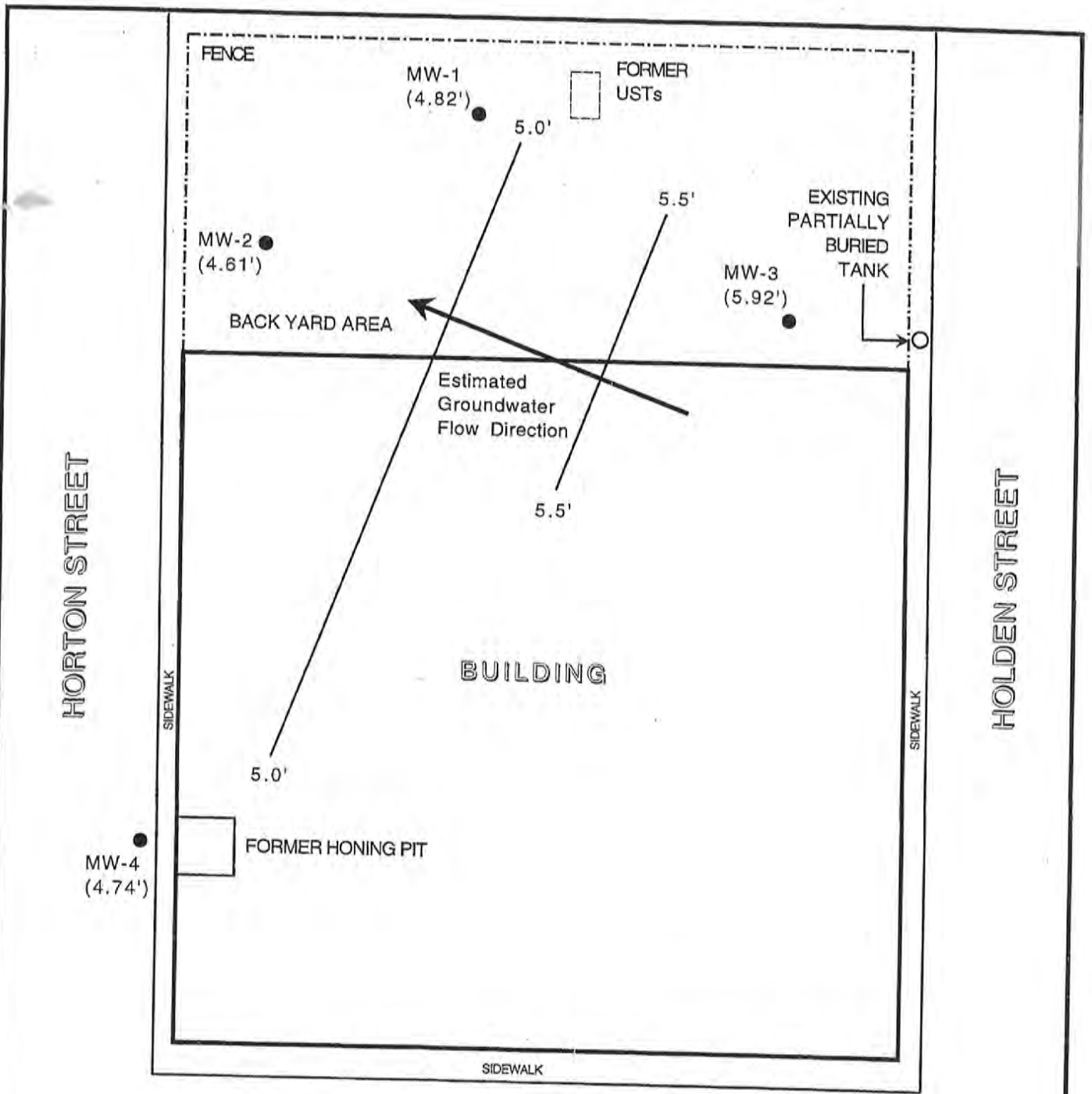
Morrow Surveying
LAND SURVEYORS

1450 Harbor Blvd. Ste. D
 West Sacramento
 California 95691
 (916) 372-8124
 curt@morrowsurveying.com

Date: 1-8-07
 Scale: 1" = 50'
 Sheet: 1 of 1
 Revised:
 Field Book: MW-30
 Dwg. No. 5035-001

TABLE ONE
Summary of Groundwater Well Survey Data

Well I.D.	Date of Measurement	Top of Casing Elevation (relative to project datum)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-1	12-13-96	12.67	7.85	4.82
	03-21-97		8.73	3.94
MW-2	12-13-96	10.00	5.39	4.61
	03-21-97		6.23	3.77
MW-3	12-13-96	13.61	7.69	5.92
	03-21-97		8.81	4.80
MW-4	12-13-96	8.17	3.42	4.75
	03-21-97		4.32	3.85



PARK AVENUE

LEGEND

MW-4 (4.74') ● Monitoring Well With Groundwater Elevation

— Groundwater Elevation Contour



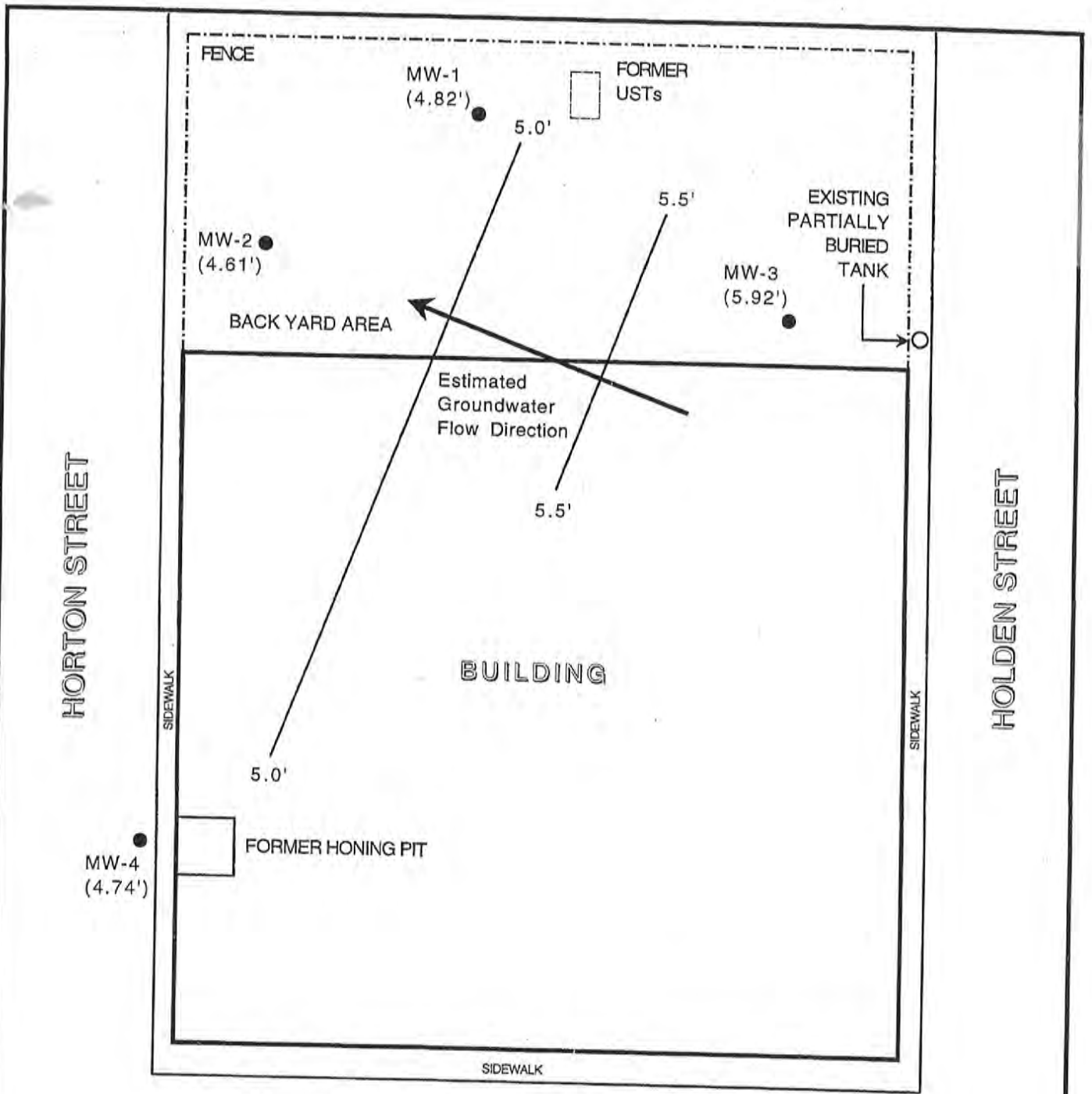
NORTH

SCALE
1" = 50'

GROUNDWATER ELEVATION
CONTOUR MAP - 12/13/96

Emeryville Properties
1400 Park Avenue
Emeryville, California

AQUA SCIENCE ENGINEERS, INC. Figure 3



LEGEND

MW-4 (4.74') ● Monitoring Well With Groundwater Elevation

— Groundwater Elevation Contour



NORTH

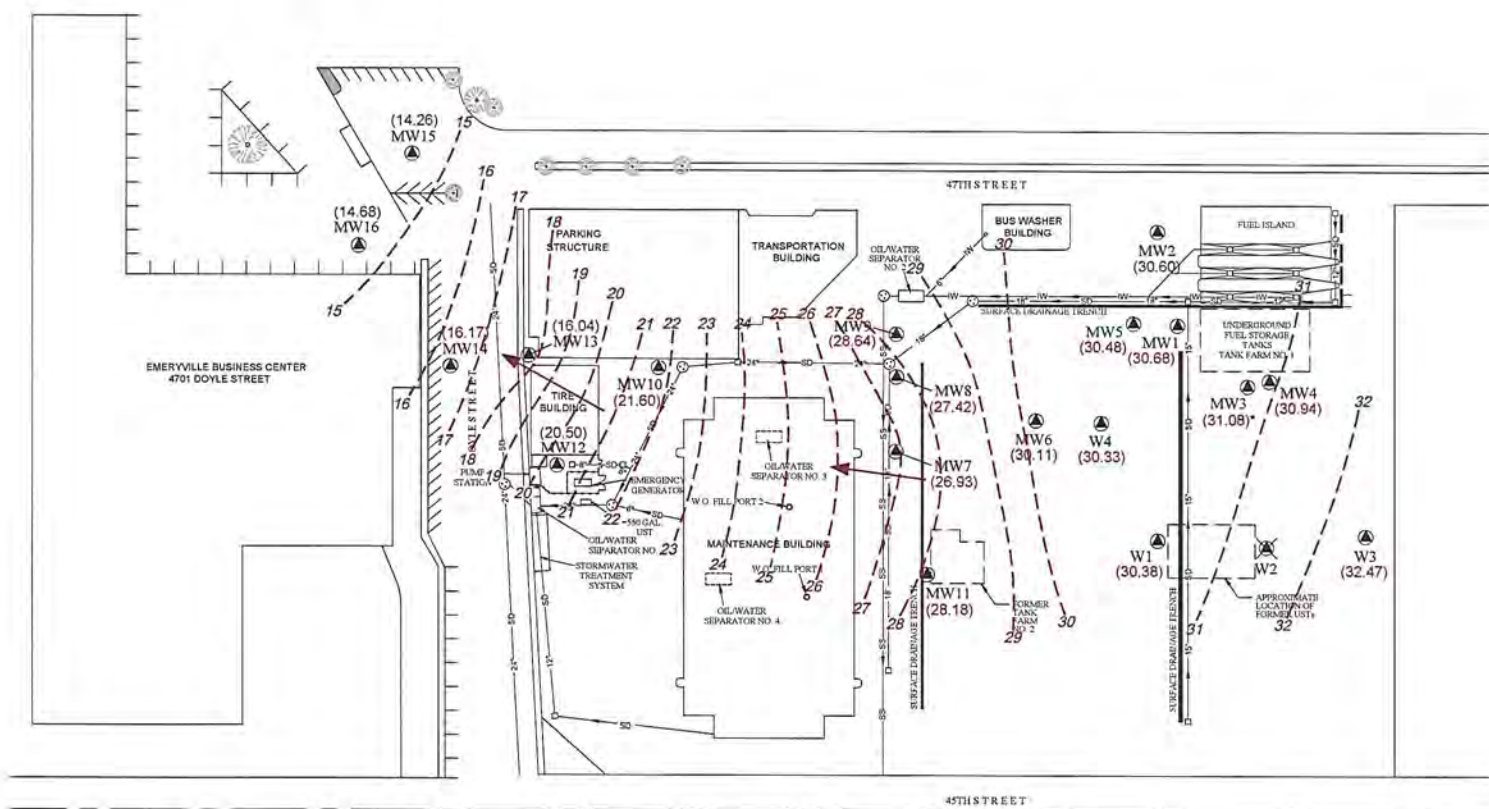
SCALE

1" = 50'

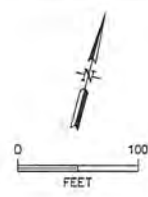
GROUNDWATER ELEVATION
CONTOUR MAP - 12/13/96

Emeryville Properties
1400 Park Avenue
Emeryville, California

AQUA SCIENCE ENGINEERS, INC. Figure 3



LEGEND	
	MANHOLE
	CATCH BASIN
	STORM DRAIN PIPELINE
	SANITARY SEWER PIPELINE
	INDUSTRIAL WASTE PIPELINE
	CHAIN LINK FENCE
	MONITOR WELL
	ABANDONED MONITOR WELL
(30.68)	POTENTIOMETRIC SURFACE ELEVATION
	POTENTIOMETRIC SURFACE CONTOUR
	GROUNDWATER FLOW DIRECTION
*	DATA NOT USED IN CONTOURING



BY	DATE
SAVAN A.J.W	09/09/14
CREATED	
APPROVED	
APPROVED	
APPROVED	

Cameron-Cole

 50 HEZENDORF LOOP

 OAKLAND, CALIFORNIA 94621

 PHONE 510-777-1870

 FAX 510-777-1871

<http://www.cameron-cole.com>

FIGURE 2
POTENTIOMETRIC SURFACE CONTOUR MAP-
AUGUST 21, 2014
AC TRANSIT, EMERYVILLE, CA

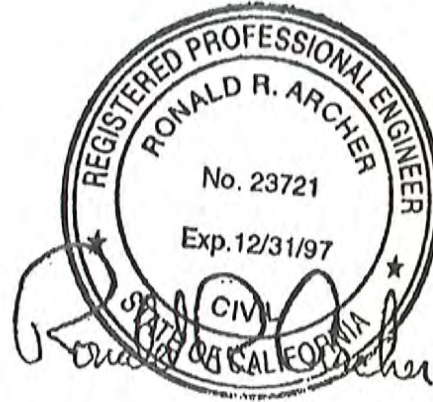
SCALE: 1" = 100'
 DWG. NO.: SITE914.DWG

RON ARCHER

CIVIL ENGINEER, INC.

CONSULTING • PLANNING • DESIGN • SURVEYING

4133 Mohr Ave., Suite E • Pleasanton, CA 94566
(510) 462-9372



DECEMBER 13, 1994

JOB NO. 2223

ELEVATIONS OF EXISTING MONITORING WELLS AT THE FORMER CHROMEX FACILITY LOCATED AT 1400 PARK AVENUE BETWEEN HORTON STREET AND HOLDEN STREET, CITY OF EMERYVILLE, ALAMEDA COUNTY, CALIFORNIA.

FOR: ALTON GEOSCIENCE INC.

BENCHMARK: # H-130 - U.S.G.S.

A FOUND U.S.G.S BRASS DISK SET IN THE NORTHEAST CORNER OF THE TOWN HALL BUILDING LOCATED AT 1333 PARK AVENUE AT HOLLIS STREET. ELEVATION TAKEN AS 24.514 U.S.G.S. DATUM.

MONITORING WELL DATA TABLE

WELL DESIGNATION	TOP OF CASING ELEVATION	TOP OF BOX ELEVATION
MW-1	16.71	16.96
MW-2	13.99	14.22
MW-3	17.69	18.03

Appendix C

Surrounding Well Search Information

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

**STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)**

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

Appendix D

Tabular Format Site Conceptual Model

Tabular Site Conceptual Model
UST Closure at the Former Charles Lowe Facility
1400 Park Avenue, Emeryville, CA

Site Conceptual Model Element	Sit Conceptual Model Sub-Element	Description	Data Gap	How To Address
Site location, History		<p>The Site is located at 1400 Park Avenue in the City of Emeryville, County of Alameda, California. The Site is situated in an industrial area and is surrounded by commercial/industrial development on all sides (see Figure 1). Charles Lowe also operated a minor electroplating and metal spraying facility in a small portion of the Site from 1973 until 1991. In 1992, the portion of the facility used by Chromex (a division of Charles Lowe Co.) was dismantled and a former below grade concrete vault associated with Chromex’s activities was removed. (Alton, 1995) Based on a series of subsurface investigations, the ACHCSA issued a “No Further Action” letter for the former chromium vault at the Site in December 1995 (see Appendix A). In October 1995, ASE removed three 550 gallon USTs, two of which historically contained gasoline and one contained diesel/waste oil. During the removal, the gasoline tanks were noted to be intact, but several holes were observed in the waste oil/diesel UST.</p> <p>The site is currently occupied by Peet's Coffee and Tea corporate offices.</p>	None	NA
Geology and Hydrogeology	Regional	<p>The site is located on the tidal plane bounding the eastern edge of the San Francisco Bay. The sediments are Holocene interfluvial basin deposits consisting of poorly sorted silty clays overlying alluvial fan deposits of interfingering clayey gravel and sandy silty clay lenses (USGS, 1979) According to available geologic maps of the area, the Site is underlain by quaternary aged sediments classified as the Temescal Formation. The Temescal Formation consists of alluvial fan deposits comprised of interfingering lenses of clayey gravel, sandy silty clay and sand-clay-silt mixtures (USGS, 1957)</p> <p>Site is located within the Santa Clara Valley-East Bay Plain groundwater basin. Groundwater in this area has designated existing beneficial uses for municipal domestic supply, agricultural, industrial and industrial process supply.</p> <p>Research of nearby sites on the Website GeoTracker indicates that regional groundwater flow is generally towards the west, ranging from the northwest to the southwest and varies locally based on individual site conditions.</p>	None	NA
	Site	<p>The soil boring log of monitoring well 1 (MW-1), generated by Alton Geoscience During well construction at the site on December 12, 1994, indicates that Site soils are comprised of sandy clay to a depth of 10.5 feet bgs; and from 10.5 feet to 24 feet bgs, the material alternates between lenses of clayey gravel, gravel and sandy clay.</p> <p>The boring log indicates groundwater was encountered at a depth of approximately 10 feet bgs. Recent Groundwater gauging data, from January 2015, indicated depth to groundwater of 8.35 feet bgs at MW-1.</p> <p>Historical groundwater gradients at the site are relatively flat, with slow flows ranging from 0.0067-0.007 feet/foot. A gradient of 0.67 feet/foot was misreported by the Reynolds Group in 2007; the actual gradient at that time was 0.0067. Groundwater gradients have been reported to have a general trend towards the west. Earlier monitoring showed a northwest trend (Alton, 1995, ASE, 1996, 1997) but it appears that some of these reports did not adequately address the change in elevation between MW1 and MW4. In 2007 the groundwater gradient was found to be to the southwest (TRG, 2007) which was confirmed by a recent Terraphase gauging of just MW1 and MW2.</p>	None	This Workplan compiles and evaluates past Site gradient measurements (See Figure 2, Figure 4, and Appendix B- Table A). The groundwater gradient at the Site and surrounding areas varies in flow direction from southwest to west to the northwest.
Surface Water Bodies		The closest surface water body to site is the San Francisco Bay, located 0.45 miles west of the Site.	None	NA

Tabular Site Conceptual Model
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Site Conceptual Model Element	Sit Conceptual Model Sub-Element	Description	Data Gap	How To Address
Nearby Wells		Terraphase mapped well search information, provided by the Alameda County of Public Works, Water Resources Department, and determined that there are no water supply wells located within 2,000 feet of the Site. (see Figure 3)	None	NA
Past Releases		In October 1995, Aquascience Engineers (ASE) uncovered and removed three 550 gallon USTs from the north-central portion of the site (2 gasoline, 1 waste oil/diesel fuel) (see figure). No piping was discovered beyond the excavation. The two gas USTs appeared to be intact. Several holes were noted in the waste oil/diesel UST. Staining and odor were observed in soils 9 feet bgs, or 12-24" beneath the bottoms of the former USTs.	None	NA
Past Remediation, Sampling, and assessment	Soil	<p>During the October 1995 UST removal by ASE, the soils below the USTs were sampled, at 9 feet bgs. After sample collection, those soils were overexcavated to a total depth of 12 feet bgs, removing a total of 65.29 tons of contaminated soil. Although groundwater began to enter the excavation at 11 feet bgs, ASE noted soil below groundwater appeared to be free of staining when visible. Two soil samples collected after overexcavation of visible contaminated soils, at 12' bgs, from the north and south ends of the tank excavation, were non detect for TPH - gasoline, diesel and motor oil; Benzene; Toluene; Ethylbenzene, and Total Xylenes. (ASE, 1996) See Table 1A.</p> <p>In 1997, ASE successfully abandoned a half buried 700 gallon steel Above-Ground Storage Tank (AST) which was found to contain only rainwater. In Soil sampled from the vicinity of the tank, liquid sampled from within the tank, and groundwater sampled from MW-3, no significant concentrations of petroleum hydrocarbons were detected (ASE, 1997).</p>	None	NA
	Groundwater	<p>Four previous groundwater samples, related to the UST investigation, have been collected from 1995 to 2007 from MW-1, which is located within 30 feet down-gradient of the former USTs, and no detectable levels of Benzene, Xylenes, Total Petroleum Hydrocarbons as gasoline (TPH gasoline) or TPH as diesel were found in the three samples collected from 1996 to 2007. Low levels of Toluene (4 ug/L) and Xylenes (7.8 ug/L) were detected in the initial sampling event by ASE on November 6, 1995. (ASE, 1996) These initial levels of Toluene Xylenes detected are far below the California Maximum Contaminant Levels (MCLs) for drinking water of 150 ug/L and 1750 ug/L for these compounds.</p> <p>During the most recent groundwater sampling event In 2007, the Reynolds Group redeveloped and sampled MW-1, MW-2 and MW-4. No evidence of any release of hydrocarbons to the groundwater from the former on-site USTs and AST was found. No TPH gasoline, TPH diesel, BTEX, MTBE or other oxygenates were detected in the groundwater samples collected at the site in several monitoring events conducted since 1996 -See Table 1B</p>	None	NA

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 1400 Park Avenue, Emeryville, CA

Site Conceptual Model Element	Sit Conceptual Model Sub-Element	Description	Data Gap	How To Address
Plume	Soil	<p>Petroleum Hydrocarbon impacted soils (staining/odor)soils were identified beneath the location of the three former USTs, located in the north central portion of the Site. Initial samples collected from below the USTs at 9 feet below ground surface were found to contained TPH and BTEX (see Table 1A). After the excavation of 65.29 tons of soil beneath and around the tanks, two final confirmation samples were collected at 12 feet below ground surface. These excavation confirmation had no detected levels TPH -gasoline, diesel and motor oil; Benzene; Toluene; Ethylbenzene see Table 1A (ASE, 1996).</p> <p>No sidewall soil samples were collected.</p>	Lateral extent of hydrocarbons in soils around the three former USTs	Collect soil samples from three borings surrounding the former USTs.Three soil samples will be collected from each soil boring location at depths of 2 feet, 5 feet and at the bottom of each boring, directly above groundwater, which is estimated to be around 10 feet. The exact depth of the soil samples being collected will be modified if discolored or odorous soils are encountered or if elevated PID readings are found - see Figure 5 . The samples are located on the northwest, west and southwest sides of the former USTs to address any potential impacts in the downgradient direction of the former USTs.
	Groundwater	<p>Past groundwater monitoring sampling at the site have not evidenced any significant release of petroleum hydrocarbons from the former USTs to Site groundwater. No TPH or BTEX have been detected in four monitoring events, with the exception of low levels of Toluene (4 ug/L) and Xylenes (7.8 ug/L) detected in the sampling event immediately following the UST removal in November 6, 1995. (ASE, 1996) The only detections of of Toluene and Xylenes are far below the California Maximum Contaminant Levels (MCLs) for drinking water of 150 ug/L and 1750 ug/L for these compounds.</p>	None	If soil sample laboratory analytical results from the vicinity of the former USTs indicate that BTEX or significant hydrocarbon concentrations are present in Site soils, Terraphase will sample groundwater from MW-1 and MW-2, which, according to data obtained during the two most recent groundwater gauging events, are located down gradient from the former USTs. See Figure 2, Figure 4, Figure 5 and Table 1B.
Nearby Sites	Groundwater	<p>Low levels of PCE, TCE and cis-1,2-DCE were detected in groundwater at concentrations consistent with other know offsite sources in the immediate vicinity of the Site, including the former Del Monte and Electro Coatings Inc. facilities. (Alton, 1996) These solvents were never used at the Site.</p>	None	NA