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Environmental Health

January 21, 2009

Mr. Steven Plunkett
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **UST Site- 801 Maritime Street**
Port of Oakland, Oakland, CA
Fuel Leak Case RO0000019

Dear Mr. Plunkett:

The Port of Oakland (Port) herein submits a technical report for your consideration. *Technical Report on Further Investigation at 801 Maritime Street, Oakland, California Underground Storage Tank Site, Requested by Alameda County Health Care Services Agency, Fuel Leak Case No. RO0000019 (Global ID # T0600101102)*, was prepared on behalf of the Port by R&M Environmental and Infrastructure Engineering, Inc. This report is a continuation of a prior site investigation (in March 2007) requested by Alameda County in July 2008. Based on all of the findings to date, the Port requests that the 801 Maritime Street site be considered for closure. Further discussion of candidacy of the site for closure is presented in the enclosed report. Should you have any questions, please contact John Prall at (510) 627-1373 or by e-mail at jprall@portoakland.com.

I declare under penalty of perjury, that the information contained in this letter and attachment is true and correct to the best of my knowledge.

Sincerely,

for Richard Sinkoff
Director, Environmental Programs and Planning Division

Enclosure Noted.

CC: John Prall, Port of Oakland
Michele Heffes, Port of Oakland
Deborah Ballati, Farella Braun + Martell, LLP
Chris Noma, Wendel Rosen Black and Dean, LLP

TECHNICAL REPORT

On
Further Site Investigation
At
801 Maritime Street, Oakland, California Underground Storage Tank Site
Requested by
Alameda County Health Care Services Agency
Fuel Leak Case No. RO0000019 (Global ID # T0600101102)

Prepared for

PORT OF OAKLAND
Environmental Programs and Planning Division
530 Water Street
Oakland, CA 94607

Prepared by

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7994 Capwell Drive
Oakland, CA 94621-2015

Under

Contract/Resolution No. 5135
On-call Environmental Compliance Consulting Services at the Port of Oakland
Technical Service Order 9

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January 15, 2009

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FIGURES

ACRONYMS

AC	Asphaltic concrete
ACHCSA	Alameda County Health Care Services Agency
ACPWA	Alameda County Public Works Agency
APN	Assessors Parcel Number
Army	United States Army
Baseline	Baseline Environmental Consulting
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylenes
D.O.	dissolved oxygen
DTB	Depth to bottom
DTW	Depth to water
EPA	Environmental Protection Agency
ESL	Environmental Screening Level
Ft	Feet
IDW	Investigative-derived waste
NM	Not measured
MCL	Maximum Contaminant Level
MTBE	Methyl tertiary-butyl ether
ORP	Oxidation-reduction potential
PID	Photoionization detector
Port	Port of Oakland
PVC	Polyvinyl chloride
R&M	R&M Environmental and Infrastructure Engineering, Inc.
RWQCB	Regional Water Quality Control Board
TDS	Total Dissolved Solids
TOC	Top of casing
TPH-d	Total petroleum hydrocarbons as diesel
TPH-g	Total petroleum hydrocarbons as gasoline
TRPH	Total recoverable petroleum hydrocarbons
QA/QC	Quality Assurance/Quality Control
USA	Underground Service Alert
USCS	Unified Soil Classification System
UST	Underground storage tank
VOA	Volatile organic analysis
VOCs	Volatile organic compounds

SUMMARY

Responding to a July 28, 2008 directive from the Alameda County Health Care Service Agency ("ACHCSA"), further site characterization has been conducted at a Port of Oakland ("Port") former underground storage tank ("UST") site located at 801 Maritime Street, Oakland, California. This additional site characterization, performed by R&M Environmental and Infrastructure Engineering, Inc. ("R&M") for the Port on September 25, 2008, consisted of advancing 5 additional borings and collecting and analyzing 10 soil samples and 5 grab groundwater samples. The aim of this and a March 15, 2007 predecessor effort, which consisted of advancing an initial 10 borings and collecting and analyzing a total of 19 soil samples and 10 grab groundwater samples, has been to determine the nature and extent of petroleum-impacted soil and groundwater at the site. This report discusses the results of the most recent site characterization efforts and makes recommendation for regulatory site closure consideration by ACHCSA.

Borehole logs have been prepared for the total of 15 borings from this and the prior investigation that have been performed at the site. The logs reveal a subsurface material that is primarily imported fill material down to a depth of approximately 7 feet ("ft"), generally consisting of gravelly material containing asphalt and concrete pieces. Between 7.5 ft below ground surface ("bgs") to 15 ft bgs the material consists of hydraulically placed sands and silts. Below 15 ft bgs is a soft silty clay-clayey silt layer generally called Young Bay Mud. Groundwater is encountered at approximately 7.5 ft bgs.

Analysis of a total of 29 soil samples collected at the 15 boring locations show non-detect levels of benzene (the petroleum constituent of most environmental concern) and methyl tertiary-butyl ether ("MTBE"). Except for one soil sample from boring RM-5 (see Figure 3 for location) exhibiting traces of ethylbenzene, toluene, and xylenes (concentrations ranging from 0.036 mg/kg to 0.18 mg/kg), these petroleum constituents were not detected in the remaining soil samples. Total Petroleum Hydrocarbons as diesel ("TPH-d") was not detected in 11 of the 29 soil samples and was present at low concentrations, ranging from 2 mg/kg in sample RM-12-10.5 to 150 mg/kg in sample RM-5-5, in the remaining 18 samples. For the samples with detectable concentrations of TPH-d, the laboratory generally noted the presence of strongly aged gasoline or diesel compounds or the absence of a recognizable TPH-d chromatographic pattern. Except for the one sample from RM-5 with a TPH-d value 150 mg/kg, all detected TPH-d levels are below the environmental screening level ("ESL") of 180 mg/kg for shallow

soils and commercial land use where the groundwater is not a source of drinking water[1]. The ESLs have been developed by the California Regional Water Quality Control Board ("RWQCB"), San Francisco Bay Region, for screening for environmental concerns at sites with contaminated soil and groundwater. Under most circumstances, the presence of a chemical in soil, soil gas, or groundwater at the corresponding ESL can be assumed to not pose a significant, long-term (chronic) threat to human health and the environment.

Analysis of grab groundwater samples collected at the 15 boring locations detected only very low concentrations of hydrocarbons at RM-5 (TPH-g = 73 µg/L, TPH-d = 57 µg/L), RM-13 (TPH-d = 150 µg/L), and RM-14 (TPH-g = 65 µg/L, TPH-d = 59 µg/L), which are located downgradient of the original source area. Benzene, toluene, ethylbenzene, and xylenes ("BTEX") in water samples from RM-5 and RM-14 ranged from 1.0 µg/L to 4.5 µg/L. These concentrations are below ESLs and the U.S. EPA drinking water standards.

There have been 13 rounds of groundwater monitoring at the on-site monitoring well MW-1, installed in July 1996. The groundwater monitoring results indicate that despite a fairly wide fluctuation in the reported concentration of TPH-d, there is an overall decreasing trend in the concentrations of all constituents, particularly BTEX. While high concentrations of TPH-d have been reported for the two sampling events in 2007, the laboratory has noted that heavier hydrocarbons contributed to the quantitation or that the sample exhibited a chromatographic pattern that did not resemble the standard. No MTBE has ever been detected in the water samples and BTEX levels have stabilized at very low levels, with average concentrations of 3.8 µg/L (benzene), 2.2 µg/L (toluene), 1.1 µg/L (ethylbenzene), and 5.0 µg/L (xylenes) for the past three monitoring events.

Site characterization and groundwater monitoring have been ongoing at the site since 1996. Based on the findings, the following considerations make a strong case for site closure, which is hereby recommended:

- The release source (i.e., the USTs) have been eliminated. In addition to the original removal of the USTs, approximately 1,500 cubic yards of impacted soils were removed from the UST pit in 1989;

- The site has been adequately characterized. An extensive site characterization has been performed and the results indicating a very low level of residual impact on soil and groundwater. This low level of residual impact appears to be confined to a small area downgradient of the former location of the USTs. The detected levels of contaminants of concerns in the soil and

[1] Values from Table B in "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater," INTERIM FINAL - November 2007 (Revised May 2008). California Regional Water Quality Control Board, San Francisco Bay Region.

groundwater in this area are generally below the 2008 ESLs, with the groundwater meeting the U.S. EPA drinking water quality standards (i.e., the Maximum Contaminant Levels); and

- The site represents no significant health and safety risks. The lack of sensitive receptors in the surrounding area, the site being more than 1,800 ft from the Bay, and the low level of localized residual contamination in a confined area covered by asphaltic concrete, i.e., AC, preclude contact for a significant health and safety risk.

Based on the above considerations, it is our professional opinion that continuing with attempts at further site characterization and/or remediation may be more detrimental than beneficial to the environment; hence, we recommend that ACHCSA consider the site for low-risk closure.

1.0 INTRODUCTION

Removal of three underground storage tanks ("UST")[2] from a Port of Oakland ("Port") site at 801 Maritime Street, Oakland, California in February 1989 and subsequent construction and sampling of monitoring well (MW-1) revealed evidence of fuel releases to the soil and groundwater[3]. The Alameda County Health Care Services Agency ("ACHCSA") requested the Port to undertake additional site characterization and groundwater monitoring to generate supplementary data needed for site closure consideration[4]. The additional site characterization, which consisted of advancing 10 borings and collecting and analyzing soil and grab groundwater samples and redeveloping and sampling monitoring well MW-1, was performed during the months of March and April 2007, with the findings that indicated only minor petroleum hydrocarbon impacts, apparently localized at or near one of the borings (boring RM-5)[5].

ACHCSA recently reviewed the file for the subject fuel leak case and concluded that further site characterization would be warranted to better define the vertical and lateral extent of contamination in the source area[6]. This report presents and discusses the results of this latest site characterization effort, which was performed in September 2008 and consisted of the following:

- Advancing borings at five locations and collecting and analyzing soil and grab groundwater samples; and
- Collecting and analyzing groundwater samples from the on-site monitoring well MW-1.

As requested by ACHCSA, this technical report also includes hydrogeologic cross sections for the site that incorporate historical soil boring and monitoring data. This report concludes (in Section 5.0) with an overall assessment of all the available site characterization data and recommends consideration for regulatory site closure in light of the insignificant, localized nature of residual contaminants that are at concentrations below regulatory standards for health, safety, and environmental protections.

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[2] UST ID numbers: CF-06, CF-07, and CF-35.
[3] "Report on Tank Removal and Remediation Activities, 801 Maritime Street", prepared for the Port of Oakland by Baseline Environmental Consulting, April 1989.
[4] Letter from Mr. Barney M. Chan of Alameda County Health Care Services Agency to Mr. John Prall of Port of Oakland, December 20, 2006 (Copy of the letter is in Appendix E).
[5] Report on "Additional Site Investigation at 801 Maritime Street, Underground Storage Tank Site, Port of Oakland, Oakland, California, Fuel Leak Case RO0000019", prepared for the Port of Oakland by R&M Environmental and Infrastructure Engineering, Inc., August 27, 2007.
[6] Letter dated July 28, 2008 from Mr. Steven Plunkett of ACHCSA to Mr. John Prall of the Port of Oakland (copy of the letter is in Appendix F).

2.0 SITE DESCRIPTION AND HISTORY[7]

2.1 LOCATION

Figure 1 is a vicinity map for the project site. Even though the site is identified as 801 Maritime Street, that address no longer exists. Prior to 1989, the USTs at this site lay adjacent to a large warehouse (see Figure 2) used by a Port tenant. The warehouse and yard were separate from the nearby Berth 24 maritime shipping terminal. Since 1989, the warehouse has been demolished, fences have been removed, and the local streets have been abandoned or reconfigured. Today, the 801 Maritime Street site is part of an expanded Berth 24 container terminal and the only evidence of the former land use is in reports and historic aerial photographs. The current street address of the Berth 24 terminal is 909 Maritime Street. Photo #1 shows the general site location as it appears today.

The site does not have a unique Assessor Parcel Number ("APN"); it is part of a much larger assessor tax parcel (APN 000-0320-001-00) that includes 445 acres of land about evenly split between dry land and submerged land.

2.2 SITE AND OPERATION HISTORY

801 Maritime Street was the site of a large commercial warehouse used for the temporary storage of bailed cotton. The site also included a set of three USTs (used by the Port's tenant for vehicle refueling) and two sets of fueling dispensers. The Port originally surmised that the USTs may have been installed in 1959 but, based on a recent investigation by Port staff member Mr. John Prall, and a Port environmental consultant, Baseline Environmental Consulting ("Baseline"), the Port now suspects the USTs may have been installed in the 1940s by the United States Army ("Army"). The Army is known to have had a service station in the same area as the 801 Maritime Street USTs. More recent maps prepared by the Port in 1958 and 1959 also show three existing USTs in place in the same area and spatial orientation.

[7] Most of the information in this section has been excerpted from a 31 May 2006 letter from Ms. Roberta Reinstein, Manager, Port Environment and Safety Department, to Mr. Barney Chan of Alameda County Health Care Services Agency (Appendix G).

The three USTs at the site (identified by the Port as CF-06, CF-07, and CF-35) were removed on February 16, 1989. During removal, Baseline reported that all three USTs were of single wall steel construction and each was strapped to a concrete slab due to buoyancy problems with the shallow groundwater conditions[3]. UST CF-06 had a capacity of 10,000 gallons and was used to store diesel fuel. USTs CF-07 and CF-35 had capacities of 20,000 and 10,000 gallons, respectively, and were used to store diesel fuel although both USTs had been configured to also store gasoline.

Visual examination of the USTs after removal did not reveal any evidence of corrosion, punctures or leaks; however, discolored soils and petroleum odors were noted. Groundwater that accumulated in the excavation contained oil and exhibited sheen. The impacted groundwater was pumped out of the excavation pit and hauled away for proper disposal. The UST removal and related field activities were conducted under the oversight of ACHCSA. Originally, this site was assigned by the ACHCSA a unique identification number of STID #3780 and is now designated as #RO0000019.

Analysis of soil and groundwater samples collected during the removal of the USTs indicated that: (1) there had been a release of petroleum hydrocarbons; (2) the release consisted of primarily diesel hydrocarbons; (3) the soil under the fill ends for two of the USTs contained the highest diesel hydrocarbon concentrations (1,600 and 3,600 mg/kg); and (4) volatile hydrocarbons (gasoline and benzene, toluene, ethylbenzene, and xylenes ("BTEX") were present in the vicinity of one of the USTs. The analytical results were transmitted by the Port to ACHCSA in March 1989. Subsequently, ACHCSA required the Port to file an Unauthorized Release Report, characterize the release, perform a preliminary assessment, and develop a remediation plan. In response to ACHCSA's directive, Baseline completed a report in April 1989 entitled "*Report on Tank Removal and Remediation Activities, 801 Maritime Street"*.

Approximately 1,500 cubic yards of contaminated soils removed from the UST pit were stockpiled near the excavation and bioremediated on site under the guidance of Baseline. After treatment, the cleaned soil was transported to the Port's Building L-615 site at the North Field of the Oakland International Airport and used as fill at the ground surface. Baseline reported on the on-site bioremediation effort in its March 1990 report, entitled "*Report on Verification Sampling for Bioremediation Program at 801 Maritime Street, Oakland"*.

2.3 SITE CHARACTERIZATION AND ASSESSMENT CHRONOLOGY

On October 8, 1992, ACHCSA submitted a letter to the Regional Water Quality Control Board ("RWQCB") with a recommendation to the RWQCB stating that "no further action [for the 801 Maritime Site] is required at this time". The ACHCSA also requested that the RWQCB forward notification of the final site closure determination. On March 14, 1994, ACHCSA reopened the site to further investigation, citing a finding from the April 1989 Baseline report as justification. The Port, through ERM-WEST, prepared a site-specific work plan and Alisto Engineering Group installed a single monitoring well in July 1996, as originally recommended by Baseline. Quarterly groundwater monitoring activities continued from 1996 to 2001.

On December 20, 2006, ACHCSA made a determination that additional technical information was needed to move the site toward closure[4]. The information request was partially fulfilled by the Port's May 2006 submission to the ACHCSA[7]. Additional site characterization, which consisted of advancing 10 borings and collecting and analyzing soil and grab groundwater samples and redeveloping and sampling monitoring well MW-1, was performed during the months of March and April 2007; the findings indicated only minor petroleum hydrocarbon impacts, apparently localized at or near one of the borings (i.e., boring RM-5)[5].

ACHCSA recently reviewed the file for the subject fuel leak case and concluded that further site characterization would be warranted to better define the vertical and lateral extent of contamination in the source area[8]. This report discusses the results of this latest site characterization effort, which was performed in September 2008, and presents an overall assessment of all the post-UST-removal site characterization data.

[8] Letter dated July 28, 2008 from Mr. Steven Plunkett of ACHCSA to Mr. John Prall of the Port of Oakland (copy of the letter is in Appendix F).

3.0 FIELD ACTIVITIES

3.1 SITE CHARACTERIZATION

3.1.1 Borehole Locations

Figure 3 shows the locations of previous and new (September 2008) soil borings advanced to collect soil and grab groundwater samples. As requested by ACHCSA, a total of 5 new borings were advanced: four (designated as RM-11 through RM-14) downgradient of former boring location RM-5, and one (designated as RM-15) in the original source area, between the February 16, 1989 soil sampling locations B-2 and C-2.

3.1.2 Preparatory Activities

Key activities preceding drilling included the following:

- Marking proposed drilling locations on the pavements (Photo #2);
- Securing a drilling permit (No. W2008-0672) from the Alameda County Public Works Agency ("ACPWA"). A copy of this permit is presented in Appendix C;
- Obtaining subsurface utility clearance of the proposed drilling locations (Photo #3) and notification of the Underground Service Alert ("USA") (secured USA Ticket No. 511093). The subsurface utility clearance was performed by C. Cruz Sub-Surface Locators, Inc. (Milpitas, CA) on September 23, 2008;
- Securing services of a licensed driller (Gregg Drilling, Martinez, CA; C-57 License #485165) that advanced the borings and collected soil and grab groundwater samples;
- Arranging with a state-certified analytical laboratory (Curtis & Tompkins, Berkeley, CA) to provide sample containers and coolers and analyze the samples; and
- Notifying the regulatory inspector, Mr. Ron Smalley (Tel.: 510-670-5407), Alameda County Public Works Agency, of the drilling date of September 25 (notified via telephone on September 17, 2008).

3.1.3 Soil and Grab Groundwater Sampling

All borings were advanced by the "direct push" method using a Geoprobe rig. The drilling and collection of samples followed the following protocol:

- Used hollow-stem auger to drill past surface asphalt layer (Photo #4). Where possible, hand augered boreholes to a depth of 5 ft before employing the "direct push" method[9] (Photo #5);

- A registered geologist logged the boreholes (see Boring Logs in Appendix D). The geologist visually inspected and described soil samples according to the Unified Soil Classification System ("USCS"; Photo #6), noted any distinct petroleum or gasoline odor or coloration, collected a portion of the soil samples in Ziploc bags, sealed the bags, and placed them in the sun for release of hydrocarbons, if any. The geologist then obtained photoionization detector ("PID") readings for each bagged sample and noted the results on the boring logs;

- Collected soil samples at depth intervals of approximately 5 ft or less, with the total number of soil samples collected at each boring varying from 1 to 3; used new butyrate tubes measuring approximately 2 inches in diameter by 4 feet in length to retrieve the samples; the tubes were then placed flat on a work table and cut open for examination and borehole logging and for selection of sample location along the length of the tube depths. The soil from the selected locations were placed in new 6-inch long butyrate tube sections that were cut specifically for this purpose;

- The sample containers were labeled with borehole number, sample depth, project number, date, and time, and then placed in a cooler with ice and delivered to Curtis & Tompkins (Berkeley, CA), a state-certified analytical laboratory, under chain-of-custody documentation, for analysis;

- Clean temporary piezometers with 3/4-inch diameter poly vinyl chloride ("PVC") screen and riser pipes were installed in each borehole (Photo #7). The well screens were closed at the bottom with PVC plugs (bottom caps). A bailer was used to retrieve a single "grab" water sample from each piezometer for laboratory analysis. These samples were collected in laboratory-supplied 40-mL glass volatile organic analysis ("VOA") containers and 1-L amber bottles;

- Following sampling, all boreholes were backfilled from total depth to surface with cement grout. A bentonite plug was used to backfill the last few inches; the borehole was topped off with cement slurry dyed to match the surrounding surface (Photo #8); and

- All investigation-derived wastes ("IDW") created by advancing borings, decontamination, soil sampling, groundwater monitoring, and borehole backfilling were collected in buckets and transferred to two 55-gallon drums that were left on site for profiling and disposal by the Port (Photo #9).

3.1.4 Water Sampling and Depth Measurements at Monitoring Well MW-1

The procedures for purging, sampling, and field measurements at MW-1 were as follows:

- Measured both the depth-to-water ("DTW") and depth-to-bottom ("DTB") from the top of casing ("TOC") to the nearest 0.01 foot;

[9] Hand augering was not possible at all locations. Refusal occurred due to the presence of hard subsurface materials; in fact, boring location RM-13 had to be relocated twice from its original intended location so that the desired depth could be fully penetrated.

- Using the measured DTW and DTB, calculated the water column length, wetted well volume, well purge volume, and the depth at which to set the ¼-inch polyethylene tubing for the peristaltic pump;
- Purged a minimum of 3 wetted well volumes while recording the following water quality parameters at regular intervals: temperature, pH, dissolved oxygen ("D.O."), oxidation-reduction potential ("ORP"), and electrical conductivity; and
- Continuously monitored DTW during purging to ensure that an appropriate pumping rate was achieved and that drawdown would be minimized.

Once a minimum of 3 wetted well volumes (calculated to be 3.6 gallons) were purged and the recorded field water quality data had stabilized sufficiently, samples were collected, labeled, documented on a chain-of-custody form, placed into a cooler with ice, and delivered to Curtis & Tompkins, Ltd. for analysis.

In order to prevent the possibilities of contamination from an external source, all equipment lowered into the well was thoroughly washed with Liquinox phosphate-free detergent, and triple rinsed with distilled water before sampling. The sampling sheet recorded during sample collection is presented in Appendix H.

3.1.5 Soil and Water Sample Analysis

The 10 soil samples and 5 grab groundwater samples that were collected from the 5 borings were analyzed for the following analytes using the indicated methods:

- Total Petroleum Hydrocarbons as gasoline ("TPH-g") by EPA Method 8015B;
- Total Petroleum Hydrocarbons as diesel ("TPH-d") by EPA Method 8015B with silica gel clean-up by EPA Method 3630C; and
- BTEX and fuel oxygenates by EPA Method 8260B.

Groundwater samples from monitoring well MW-1 were analyzed for the following analytes using the indicated methods:

- TPH-g by EPA Method 8015B;
- TPH-d by EPA Method 8015B with silica gel clean-up by EPA Method 3630C;
- BTEX and methyl tertiary-butyl ether ("MTBE") by EPA Method 8021B; and
- Total dissolved solids ("TDS") by EPA Method 160.1.

4.0 RESULTS AND DISCUSSION

4.1 SITE CHARACTERIZATION

4.1.1 Field Observations and Borehole Logs

Boring logs for the 5 boreholes advanced on September 25, 2008 at locations designated as RM-11 through RM-15 in Figure 3 are contained in Appendix D. These logs and logs for previously advanced borings RM-1 through RM-10 have been used to construct two stratigraphic cross sections of the site presented in Figures 4 and 5. The information presented in these figures and field observations made on September 25 when borings RM-11 through RM-15 were being advance indicate the following:

- The subsurface material down to a depth of approximately 7 ft appeared to be imported fill material, generally consisting of gravelly material containing asphalt and concrete pieces (Photos #10 and #11). The presence of asphalt/concrete layers and/or large rocks at some locations prevented hand augering of the first few feet of the depth as it had been intended. Refusal was encountered at the originally planned RM-13 location at 3.5 ft below ground surface ("bgs") forcing the relocation of RM-13 to a second location nearby where again refusal was encountered, this time at 6.5 ft bgs (Photo #12), and finally to a third location where total depth could be reached;

- The gravelly layer encountered to a depth of approximately 7 ft bgs was underlain by a layer of olive grey/brown fine-medium sized loose sand (hydraulically placed material) (Photos #13 and #14) which extended to the maximum depth of penetration, approximately 15 ft (Note: in MW-1 Young Bay Mud consisting of a soft silty clay-clayey silt layer had been encountered below this depth);

- Groundwater was encountered at approximately 7.5 ft bgs in all borings;

- PID readings were taken in all borings at depths where samples were retrieved and all had no detections (i.e.: 0.0 ppm); and

- No hydrocarbon odors or staining was noted in any of the borings.

4.1.2 Soil and Grab Groundwater Analytical Results (September 25, 2008 Sampling)

Laboratory reports containing analytical results for samples collected on September 25, 2008 at boring locations RM-11 through RM-15 are presented in Appendix B, and are summarized in Table 1 for soil samples and in Table 2 for grab-groundwater samples.

Analytical results for soil samples (Table 1) indicate the following:

- BTEX constituents and MTBE were not detected in any of the soil samples;
- TPH-g was present in only one of the 10 soil samples and at very low concentration level (0.98 mg/kg in the soil sample collected from a depth of approximately 7 ft at boring RM-14); and
- Although the analytical laboratory reported TPH-d values ranging from 2.0 mg/kg to 140 mg/kg for soil samples from 4 of the 5 borings, the laboratory qualified these results by noting that the chromatographic patterns for these samples did not resemble the TPH-d standard.

Analytical results for grab groundwater samples (Table 2) indicate the following:

- Except for low concentrations of BTEX constituents detected in the grab groundwater sample from boring RM-14 (values ranging from 1.1 µg/L to 4.5 µg/L), BTEX and MTBE were not detected in the water samples;
- TPH-g was detected in the water sample from only one of the borings (65 µg/L in boring RM-14); and
- The laboratory-reported TPH-d values of 150 µg/L and 59 µg/L for groundwater samples from borings RM-13 and RM-14, respectively, were qualified by noting that the chromatographic patterns for these samples did not resemble the TPH-d standard.

4.1.3 Soil and Grab Groundwater Analytical Results (March 15, 2007 Sampling)

As noted previously, a prior site characterization effort, conducted in March 17, 2007, consisted of advancing borings RM-1 through RM-10 and collecting and analyzing soil and grab groundwater at these locations. The analytical results for those samples are presented in Table 4 for soil samples and in Table 5 for grab groundwater samples. The data in these tables indicate:

- Except for the soil sample from RM-5, which showed very low concentrations of xylenes, ethylbenzene, and toluene, BTEX and MTBE were not detected in any of the soil samples, suggesting a localized nature of the noted minor impact;
- No MTBE was detected in any of the 19 soil samples collected from the 10 borings;
- TPH-g was detected in only 2 of the 19 soil samples (samples from 4-ft depth in boring RM-3 and from 10-ft depth in boring RM-6 that contained 2.2 mg/kg and 36 mg/kg of TPH-g, respectively). The laboratory noted that chromatograms for these samples suggested strongly aged gasoline or diesel range compounds;
- Low levels of TPH-d, ranging from 3.1 mg/kg to 150 mg/kg were detected in 10 of the 19 soil samples, with samples from 5-ft depth in boring RM-5 and from 4-ft depth in boring RM-3 exhibiting the highest values (150 mg/kg and 49 mg/kg, respectively). The laboratory qualified the TPH-d results by noting that the sample chromatograms suggested the presence of strongly aged diesel compounds, but no recognizable pattern; and

- Only the grab groundwater sample from boring RM-5 had detectable concentrations of TPH-g, TPH-d, toluene, ethylbenzene, xylenes, and MTBE. Benzene was not detected in any of the water samples, including the sample from RM-5.

4.2 MW-1 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Table 3 presents analytical results for the groundwater sample collected from MW-1 on September 25, 2008 plus data from 12 previous monitoring events[10]. The September 25, 2008 data indicate TPH-g and TPH-d concentrations of 80 µg/L and ND<50 µg/L, respectively, fairly low levels of BTEX compounds (1.0 µg/L ethylbenzene to 4.6 µg/L xylenes) and a non-detect level of MTBE.

The results shown in Table 3 for the 13 round of groundwater monitoring at MW-1 suggest the following:

- While there has been a fairly wide fluctuation in the reported concentration of TPH-d, there is an overall decreasing trend in the concentrations of all constituents, particularly the BTEX compounds; and

- While high concentrations of TPH-d have been reported for the two sampling events in 2007, the laboratory has noted that heavier hydrocarbons contributed to the quantitation or that the sample exhibited a chromatographic pattern that did not resemble the standard.

4.3 QUALITY ASSURANCE AND QUALITY CONTROL OF DATA

A summary review of the quality assurance and quality control ("QA/QC") analyses performed by the laboratories is presented in Appendix B. The QA/QC analysis indicates that the analytical results provided by the laboratories are accurate and fall within laboratory acceptance criteria.

5.0 OVERALL ASSESSMENT OF THE AVAILABLE DATA AND RECOMMENDATIONS

Figures 6 and 7 present, respectively, the analytical results for the 29 soil samples and 15 grab groundwater samples collected at the 15 borings that have been advanced at the site to date. Analytical results for the 13 rounds of water sampling at monitoring well MW-1 are presented in Table 3. This section reviews these results and compares them with regulatory guidelines and standards for environmental screening at petroleum hydrocarbon contaminated sites (presented in Table 6) and the very stringent drinking water quality standards (shown in Table 7).

[10] Included in this table are also other field-measured data, such as depth to water, water temperature, pH, etc. These data show the absence of wide fluctuations and anomalies. The field sampling sheet containing notes and observations made during the September 25, 2008 sampling is presented in Appendix H.

5.1 SOIL CHARACTERIZATION RESULTS

The soil sample analytical results presented in Figure 6 (and in Tables 1 and 4) indicate the following:

- Non-detect level of benzene (the petroleum constituent of most environmental concern) and MTBE in all 29 soil samples;
- Non-detect level of other BTEX constituents (i.e., ethylbenzene, toluene, and xylenes) in 28 of the 29 soil samples, with only trace amounts of these constituents (0.036 mg/kg to 0.18 mg/kg) detected in sample RM-5-5;
- Non-detect levels of TPH-d in 11 of the 29 soil samples with low concentrations, ranging from 2 mg/kg in sample RM-12-10.5 to 150 mg/kg in sample RM-5-5, in the remaining 18 samples[11]. For these samples with detectable concentrations of TPH-d, the laboratory generally noted the presence of strongly aged gasoline or diesel compounds or the absence of a recognizable TPH-d chromatographic pattern. Except for the one sample from RM-5 with a TPH-d value 150 mg/kg, all detected TPH-d levels are below the May 2008 ESL of 150 mg/kg for shallow soils and commercial land use where the groundwater is not a source of drinking water (Table B in RWQCB document: "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater," INTERIM FINAL - November 2007, Revised May 2008);
- Contamination of soil with low levels of products of petroleum origin (primarily, diesel-type hydrocarbons) appear to be confined to the immediate vicinity of boring RM-5, which is downgradient of the original source area; and
- With the exception of one soil sample from RM-5 that showed a TPH-d value equal to the ESL value of 150 mg/kg for TPH-d, the detected TPH-d levels are less than the ESL.

5.2 GROUNDWATER CHARACTERIZATION RESULTS

The analytical results presented in Figure 7 and Tables 2 and 5 for the grab groundwater samples collected at the 15 boring locations indicate the following:

- Except for water samples collected from RM-5, RM-13, and RM-14, the concentrations of TPH-g, TPH-d, BTEX, and MTBE were below the detection limits. TPH-g was detected in only one water sample (at boring location RM-14 at a level of 65 µg/L);
- At two locations were BTEX was detected (i.e., RM-5 and RM-14), the concentration of individual BTEX constituents were very low, ranging from 1.0 µg/L for xylenes in RM-5 to 4.5 µg/L for xylenes in RM-13;
- The laboratory-reported TPH-d concentrations of 57 µg/L for RM-5, 59 µg/L for RM-14, and 150 µg/L for RM-13 are qualified by a notation that the samples exhibited a chromatographic pattern not resembling the standard;

[11] Note that the three soil samples collected from depths of 7.5 ft bgs, 11 ft bgs, and 15 ft bgs at boring RM-15, which is in the original source area, had TPH-d levels of 2.4 mg/kg, 44 mg/kg, and 7.7 mg/kg, respectively, with the laboratory qualifier that “sample exhibits chromatographic pattern which does not resemble standard.”

- The low levels of petroleum product contamination in the water samples from RM-5, RM-13, and RM-14 are significantly less than May 2008 ESL values of 43 µg/L to 1,800 µg/L (see Table 6) for shallow soils where the groundwater is not a source of drinking water. The levels of BTEX constituents detected in water samples from RM-5 and RM-14 are also below the MCL drinking water standards set by the US EPA. The benzene concentration of 3.3 µg/L in the water sample from RM-14 exceeds the California MCL value of 1 µg/L for benzene; and

- RM-5, RM-13, and RM-14, the three borings with detectable concentrations of petroleum products in water samples, are downgradient of the original source area. The fact that the water sample from boring RM-15 in the original source area appears to be free of contamination suggests that any contaminant plume that may have originated in the source area has effectively moved downgradient, with RM-5, RM-13, and RM-14 representing the upgradient fringe of such a plume.

The analytical results for 13 monitoring events at monitoring well MW-1 are presented in Table 3. As discussed in Section 4.2, the collected water quality data indicate that despite a fairly wide fluctuation in the reported concentration of TPH-d, there is an overall decreasing trend in the concentrations of all constituents, particularly the BTEX compounds. While high concentrations of TPH-d have been reported for the two sampling events in 2007, the laboratory has noted that heavier hydrocarbons contributed to the quantitation or the sample exhibited a chromatographic pattern that did not resemble the standard. No MTBE has ever been detected in the water samples and BTEX has stabilized at very low levels, with average concentrations of 3.8 µg/L (benzene), 2.2 µg/L (toluene), 1.1 µg/L (ethylbenzene), and 5.0 µg/L (xylenes) for the past three rounds of monitoring events. These values are below the MCL drinking water standards set by US EPA (Table 7), although the benzene concentration of 3.8 µg/L exceeds the California MCL value of 1 µg/L for benzene.

5.3 CASE FOR SITE CLOSURE

Site characterization and groundwater monitoring have been ongoing at the site since 1996. Based on the findings, the following considerations make a strong case for site closure, which is hereby recommended:

- The release source (i.e., the USTs) have been eliminated. In addition to the original removal of the USTs, approximately 1,500 cubic yards of impacted soils were removed from the tank pit;

- The site has been adequately characterized. A fairly extensive site characterization has been performed with the results indicating a very low level of residual impact on soil and groundwater. This low level of residual impact appears to be confined to a small area downgradient of the former location of the USTs. The detected levels of contaminants of concerns in the soil and groundwater in this area are generally below the applicable ESLs, with the groundwater meeting the U.S. EPA MCLs; and

- The site represents no significant health and safety risks. The lack of sensitive receptors in the surrounding area, the site being more than 1,800 ft from the Bay, and the low level of localized

residual contamination in a confined area preclude significant health and safety risks.

Based on the above considerations, it is our professional opinion that continuing with attempts at further site characterization and/or remediation may be more detrimental than beneficial to the environment; hence, this request for no further-action consideration for the subject site.

TABLES

Table 1: Summary of September 25, 2008 Soil Sample Analytical Results

Port of Oakland

801 Maritime street, Oakland, CA

Soil Sampling Anlytical Results for RM-11 through RM-15; Sampling performed September 25, 2008

Soil Sample	RM-11-7	RM-11-10.5	RM-12-7	RM-12-10.5	RM-13-7	RM-13-11	RM-14-7	RM-15-7.5	RM-15-11	RM-15-15
TPH (mg/kg)										
Gasoline (C7-C12)	ND<0.94	ND<1.0	ND<0.96	ND<0.99	ND<1.0	ND<1.1	0.98	ND<1.1	ND<0.93	ND<1.1
Diesel (C10-C24)	ND<1.0	ND<1.0	ND<1.0	2.0, Y	98, Y	11, Y	140, Y	2.4, Y	44, Y	7.7, Y
BTEX and MTBE (µg/kg)										
Benzene	ND<4.6	ND<4.7	ND<5.0	ND<4.8	ND<5.0	ND<5.0	ND<4.9	ND<5.0	ND<4.9	ND<5.0
Toluene	ND<4.6	ND<4.7	ND<5.0	ND<4.8	ND<5.0	ND<5.0	ND<4.9	ND<5.0	ND<4.9	ND<5.0
Ethylbenzene	ND<4.6	ND<4.7	ND<5.0	ND<4.8	ND<5.0	ND<5.0	ND<4.9	ND<5.0	ND<4.9	ND<5.0
Xylenes	ND<4.6	ND<4.7	ND<5.0	ND<4.8	ND<5.0	ND<5.0	ND<4.9	ND<5.0	ND<4.9	ND<5.0
MTBE	ND<4.6	ND<4.7	ND<5.0	ND<4.8	ND<5.0	ND<5.0	ND<4.9	ND<5.0	ND<4.9	ND<5.0

Notes:

See Appendix B for laboratory report

See Figure 3 for boring locations

RM = Boring

1 = Boring #

7 = Sample depth, ft

TPH-g = Total Petroleum Hydrocarbons as gasoline

TPH-d = Total Petroleum Hydrocarbons as diesel

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

MTBE = Methyl tert-butyl ether

ND = not detected

Y = Notation by the laboratory: the sample exhibits chromatographic pattern which does not resemble standard

Table 2: Summary of September 25, 2008 Grab Groundwater Sample Analytical Results

Port of Oakland

801 Maritime Street, Oakland, CA

Grab Groundwater Sampling Anlytical Results for RM-11 through RM-15; Sampling performed September 25, 2008

Results are in µg/L					
Water Sample	**RM-11**	**RM-12**	**RM-13**	**RM-14**	**RM-15**
TPH					
Gasoline (C7-C12)	ND<50	ND<50	ND<50	65	ND<50
Diesel (C10-C24)	ND<63	ND<63	150, Y	59, Y	ND<50
BTEX and MTBE					
Benzene	ND<0.5	ND<0.5	ND<0.5	3.3	ND<0.5
Toluene	ND<0.5	ND<0.5	ND<0.5	1.8	ND<0.5
Ethylbenzene	ND<0.5	ND<0.5	ND<0.5	1.1	ND<0.5
Xylenes	ND<0.5	ND<0.5	ND<0.5	4.5	ND<0.5
MTBE	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
1,2-Dibromoethane (EDB)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
1,2-Dichloroethane (EDC)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Methyl tert-Amyl Ether (TAME)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Ethyl tert-Butyl Ether (ETBE)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Isopropyl Ether (DIPE)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.1
Tert-Butyl Alcohol (TBA)	ND<10	ND<10	ND<10	ND<10	ND<10
Ethanol (ETOH)	ND<1,000	ND<1,000	ND<1,000	ND<1,000	ND<1,000

Notes:

See Appendix B for laboratory report

See Figure 3 for boring locations

RM = Boring

1 = Boring #

TPH-g = Total Petroleum Hydrocarbons as gasoline

TPH-d = Total Petroleum Hydrocarbons as diesel

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

MTBE = Methyl tert-butyl ether

ND = not detected

Y = Notation by the laboratory: the sample exhibits chromatographic pattern which does not resemble standard

Table 3
SEPTEMBER 25, 2008 AND PREVIOUS GROUNDWATER MONITORING RESULTS FOR MW-1
801 MARITIME STREET
OAKLAND, CA 94607

Parameters	Event												
	9/25/2008	7/10/1996	12/27/1996	3/25/1997	6/23/1997	9/30/1997	12/31/1997	4/17/2001	7/26/2001	10/21/2001	3/13/2002	4/12/2007	9/28/2007
TPH-g (µg/L)	80	180	180	180	170	190	130	160	130	160	110	62	76
TPH-d (µg/L)	ND<50	7,100	670	19	3,000	830	ND<48	59	ND<50	ND<100	ND<50	4,800 (H)	4,000 (Y)
Benzene (µg/L)	3.4	27	30	21	20	35	26	11	17	14	8.5	3.5	4.6
Toluene (µg/L)	1.9	14	15	11	11	17	14	6.2	8.7	6.9	4.2	2.2	2.4
Ethyl Benzene (µg/L)	1.0	5.4	5.8	4	4.1	5.2	4.3	2.6	3.2	2.6	1.3	1.2	1.2
Xylenes (µg/L)	4.6	23	26	17	18	22	18	11.2	14.2	11.5	7.3	5.2	5.1
MTBE (µg/L)	ND<2.0	NA	NA	NA	NA	NA	NA	ND<2.0	ND<2.0	ND<2.0	ND<5.0	ND<2.0	ND<2.0
TDS (mg/L)	1,730	NA	NA	1,840	1,320	2,020	1,880	1,860	1,880	1,860	1,100	1,560	1,650
Temp (C^o)	23.83	---	---	---	---	---	---	---	---	---	---	17.76	23.36
E.C. (mS/cm)	4.777	---	---	---	---	---	---	---	---	---	---	4.489	4.672
D.O. (mg/L)	0.36	---	---	---	---	---	---	---	---	---	---	0.33	0.10
pH	11.81	---	---	---	---	---	---	---	---	---	---	12.52	12.59
ORP (mV)	-156.3	---	---	---	---	---	---	---	---	---	---	-162.5	-157.4
DTW (ft)	7.82	7.36	7.55	7.31	7.55	7.46	7.17	7.59	7.65	7.71	6.66	7.60	7.79
DTB (ft)	15.20	---	---	---	---	---	---	---	---	---	---	15.20	15.12
GW Elevation (ft AMSL)	6.36	6.45	6.26	6.50	6.26	6.09	6.38	6.59	6.53	6.47	7.52	6.58	6.39

Notes:
Analytical reports for water sample collected on 9/25/2008 are contained in Appendix B
Groundwater elevations refereneced to the Port Datum
Port Datum = Mean Sea Level - 3.20 feet
NA = Not Analyzed
DTW = Depth to water
DTB = Depth to bottom
AMSL = Above mean sea level
TPH-g = Total petroleum hydrocarbons as gasoline
TPH-d = Total petroleum hydrocarbons as diesel
MTBE = Methyl tert-butyl ether
TDS = Total dissolved solids
E.C. = Electrical conductivity
D.O. = Dissolved oxygen
ORP = Oxidation reduction potential
H = Heavier hydrocarbons contributed to the quantitation
Y = Notation by the laboratory: the sample exhibits chromatographic pattern that does not resemble standard
GW Elevations for 4/12/2007, 9/28/2007, and 9/25/2008 were calculated based on 2001 surveyed top-of-casing elevations of 14.18 feet (Port of Oakland Datum)

Table 4: Summary of March 15, 2007 Soil Sample Analytical Results
Port of Oakland
801 Maritime street, Oakland, CA
Soil Sampling Anlytical Results for RM-1 through RM-10; Sampling performed March 15, 2007

Results are in mg/Kg												
Soil Sample	RM-1-8	RM-2-7	RM-2-10	RM-3-4	RM-3-11	RM-4-6	RM-4-11	RM-5-5	RM-6-7	RM-6-10	RM-7-6	RM-7-10
TPH												
Gasoline (C7-C12)	ND<1	ND<1	ND<1	2.2,g	ND<1	ND<1	ND<1	36,g,m	ND<1	ND<1	ND<1	ND<1
Diesel (C10-C24)	ND<1	ND<1	ND<1	49,a	6.4,g,b	5.1,g,b	9.7,g,b	150,g,b	ND<1	16,g,b	ND<1	ND<1
BTEX and MTBE												
Benzene	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015
Toluene	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.067	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Ethylbenzene	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.036	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Xylenes	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.18	ND<0.005	ND<0.005	ND<0.005	ND<0.005
MTBE	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05

Results are in mg/Kg							
Soil Sample	RM-8-5	RM-8-11	RM-9-5	RM-9-8	RM-9-11.5	RM-10-6	RM-10-11
TPH							
Gasoline (C7-C12)	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
Diesel (C10-C24)	ND<1	6.2,g,b	ND<1	4.9,g,b	9.1,g,b	ND<1	3.1,g,b
BTEX and MTBE							
Benzene	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015	ND<0.015
Toluene	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Ethylbenzene	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Xylenes	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005
MTBE	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05

See Appendix B for laboratory report

See Figure 3 for boring locations

RM = Boring
1 = Boring #
8 = sample depth, ft

TPH-g = Total Petroleum Hydrocarbons as gasoline
TPH-d = Total Petroleum Hydrocarbons as diesel
BTEX = Benzene, toluene, ethylbenzene, and xylenes
MTBE = Mthyl tert-butyl ether
ND = Not detected
a = Unmodified or weakly modified diesel is significant
b = Diesel range compounds are significant; no recognizable pattern
g = Strongly aged gasoline or diesel range compounds are significant
m = No recognizable pattern

Table 5: Summary of March 15, 2007 Grab Groundwater Sample Analytical Results

Port of Oakland

801 Maritime street, Oakland, CA

Ground Water Sampling Anlytical Results for RM-1 through RM-10; Sampling performed March 15, 2007

Results are in µg/L										
Water Sample	RM-1	RM-2	RM-3	RM-4	RM-5	RM-6	RM-7	RM-8	RM-9	RM-10
TPH										
Gasoline (C7-C12)	ND<50	ND<50	ND<50	ND<50	73, a	ND<50	ND<50	ND<50	ND<50	ND<50
Diesel (C10-C24)	ND<50	ND<50	ND<50	ND<50	57, b	ND<50	ND<50	ND<50	ND<50	ND<50
BTEX and MTBE										
Benzene	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Toluene	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Ethylbenzene	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Xylenes	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MTBE	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0

Sample Designation: Example RM-10

RM = Boring

10 = Boring #

TPH-g = Total Petroleum Hydrocarbons as gasoline

TPH-d = Total Petroleum Hydrocarbons as diesel

BTEX = Benzene, toluene, ethylbenzene, and xylenes

MTBE = Mthyl tert-butyl ether

ND = Not detected

a = Unmodified or weakly modified gasline is significant

b = Diesel range compounds are significant; no recogniable pattern

See Appendix B for laboratory report

See Figure 3 for boring locations

TABLE 6 - ENVIRONMENTAL SCREENING LEVELS FOR CHEMICALS COMMONLY FOUND IN SOIL AND GROUNDWATER AT SITES WHERE RELEASES OF HAZARDOUS CHEMICALS HAVE OCCURRED*

SOILS:

CONSTITUENT	May 2008 Environmental Screening Level (ESL) for Soil, mg/kg	
	Not a Potential Drinking Source	
	Shallow Soil ≤3 m bgs)	Deep Soil (>3m bgs)
	Commercial	Commercial
TPH		
Gasoline (C7-C12)	180	180
Diesel (C10-C24)	180	180
BTEX and MTBE		
Benzene	0.27	2
Toluene	9.3	9.3
Ethylbenzene	4.7	4.7
Xylenes	11	11
MTBE	8.4	8.4

GROUNDWATER:

CONSTUTENT	May 2008 Environmental Screening Level (ESL) for Groundwater, µg/L	
	Not a Potential Drinking Source	
	Shallow Soil ≤3 m bgs)	Deep Soil (>3m bgs)
TPH		
Gasoline (C7-C12)	210	210
Diesel (C10-C24)	210	210
BTEX and MTBE		
Benzene	46	46
Toluene	130	130
Ethylbenzene	43	43
Xylenes	100	100
MTBE	1,800	1,800

*Notes:

1) Source: California Regional Water Quality Control Board, San Francisco Bay Region, " Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater," INTERIM FINAL - November 2007 (Revised May 2008); Tables B and D in the document.

2) The ESLs are considered to be conservative. Under most circumstances, and within the limitations described, the presence of a chemical in soil, soil gas or groundwater at concentrations below the corresponding ESL can be assumed to not pose a significant, long-term (chronic) threat to human health and the environment. Additional evaluation will generally be necessary at sites where a chemical is present at concentrations above the corresponding ESL. Active remediation may or may not be required depending on site-specific conditions and considerations.

TABLE 7: MAXIMUM CONTAMINANT LEVELS FOR DRINKING WATER, U.S EPA AND STATE OF CALIFORNIA

CONSTITUENT	Units = μg/L	
	EPA (a)	CA (b)
Benzene	5	1
Ethylbenzene	700	300
Toluene	1000	150
Xylenes	10,000	175

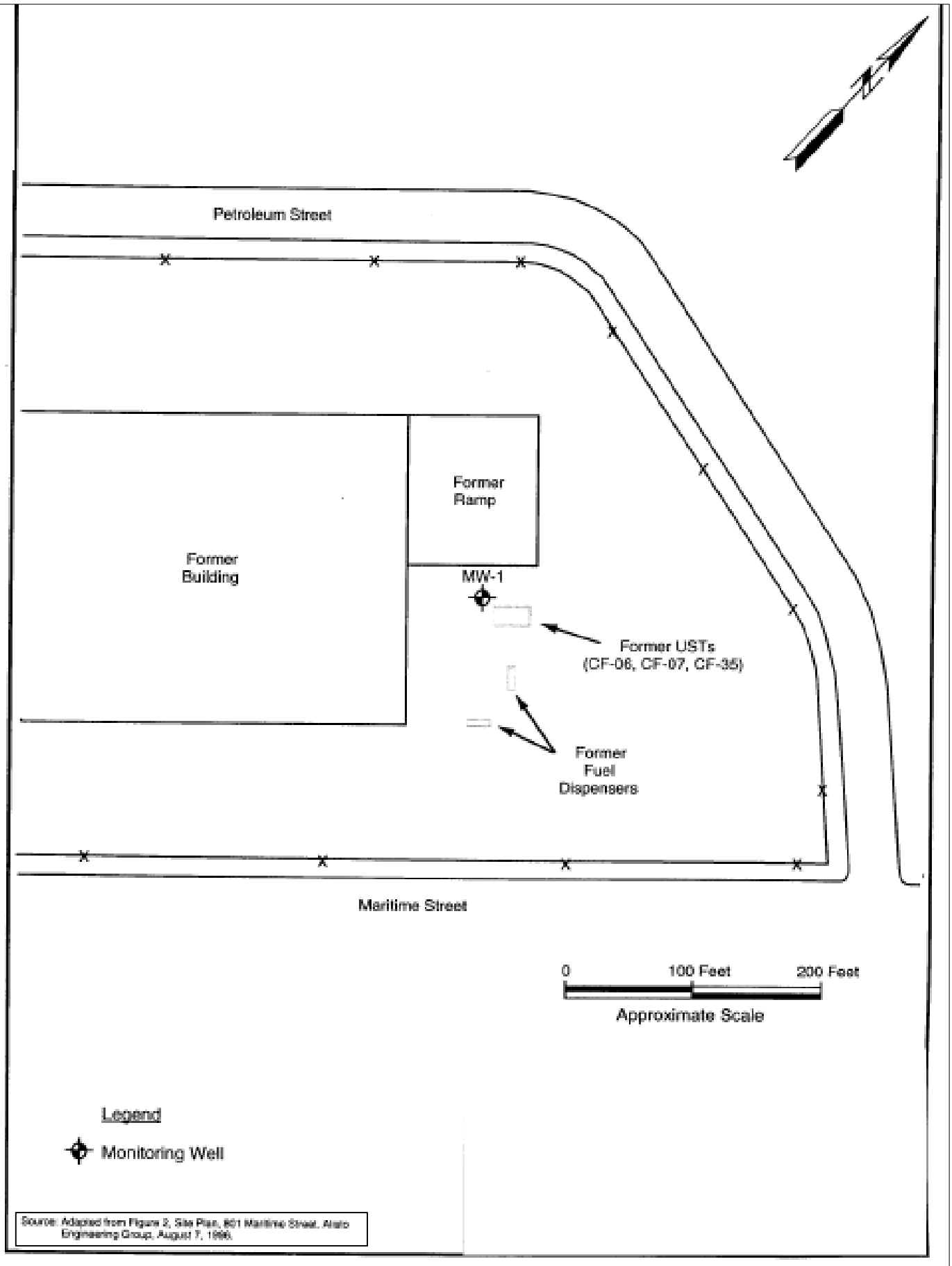
Source:

(a) List of Drinking Water Contaminants & their MCLs;
http://www.epa.gov/safewater/contaminantslistmcl

(b) California Department of Public Health: MCLs, DLRs, and PHGs for Regulated Drinking Water Contaminants (Last Updated: October 10, 2008);
http://www.cdph.ca.gov/certlic/drinkingwater/Documents/MCLreview/MCLs-DLRs-PHGs.xls

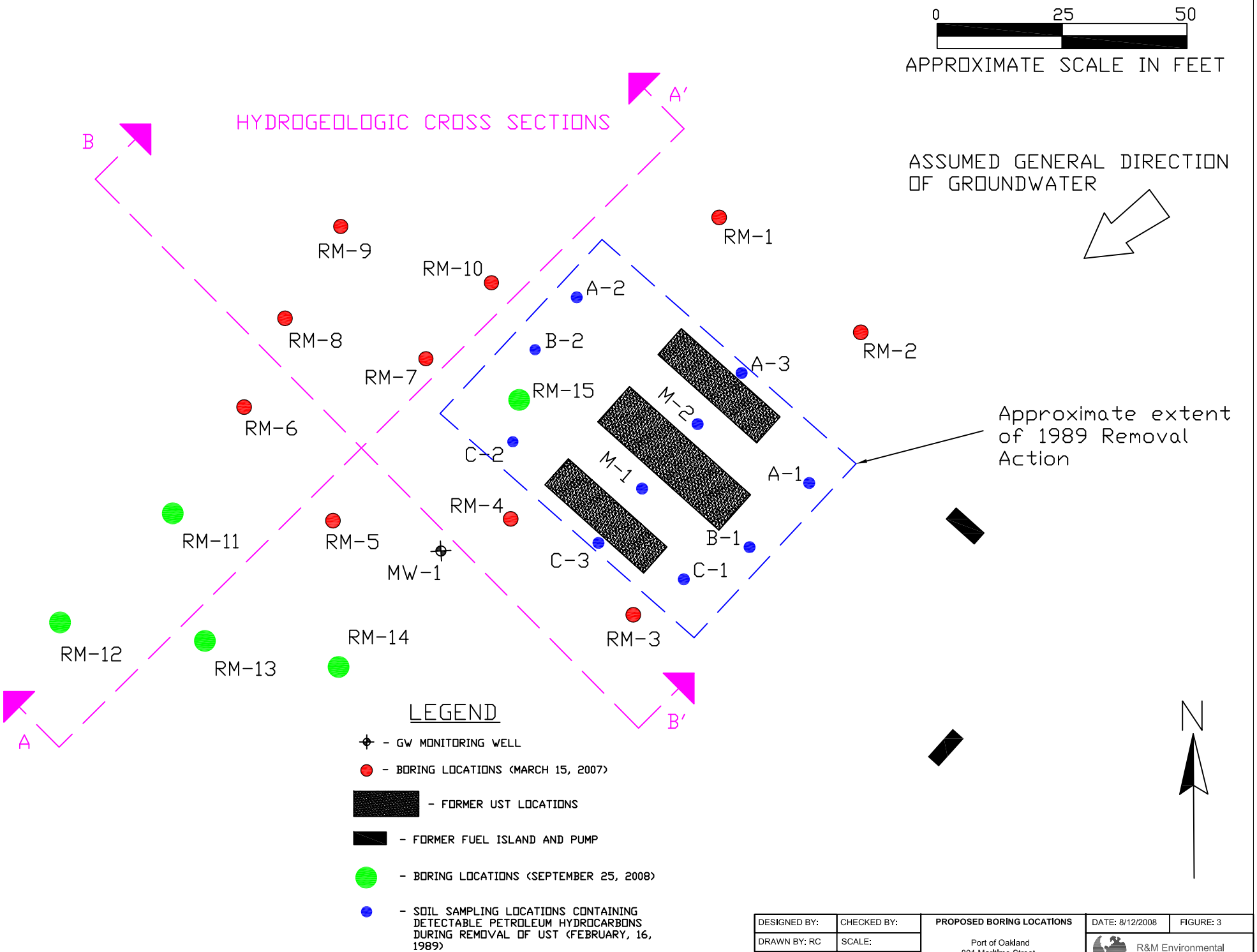
FIGURES

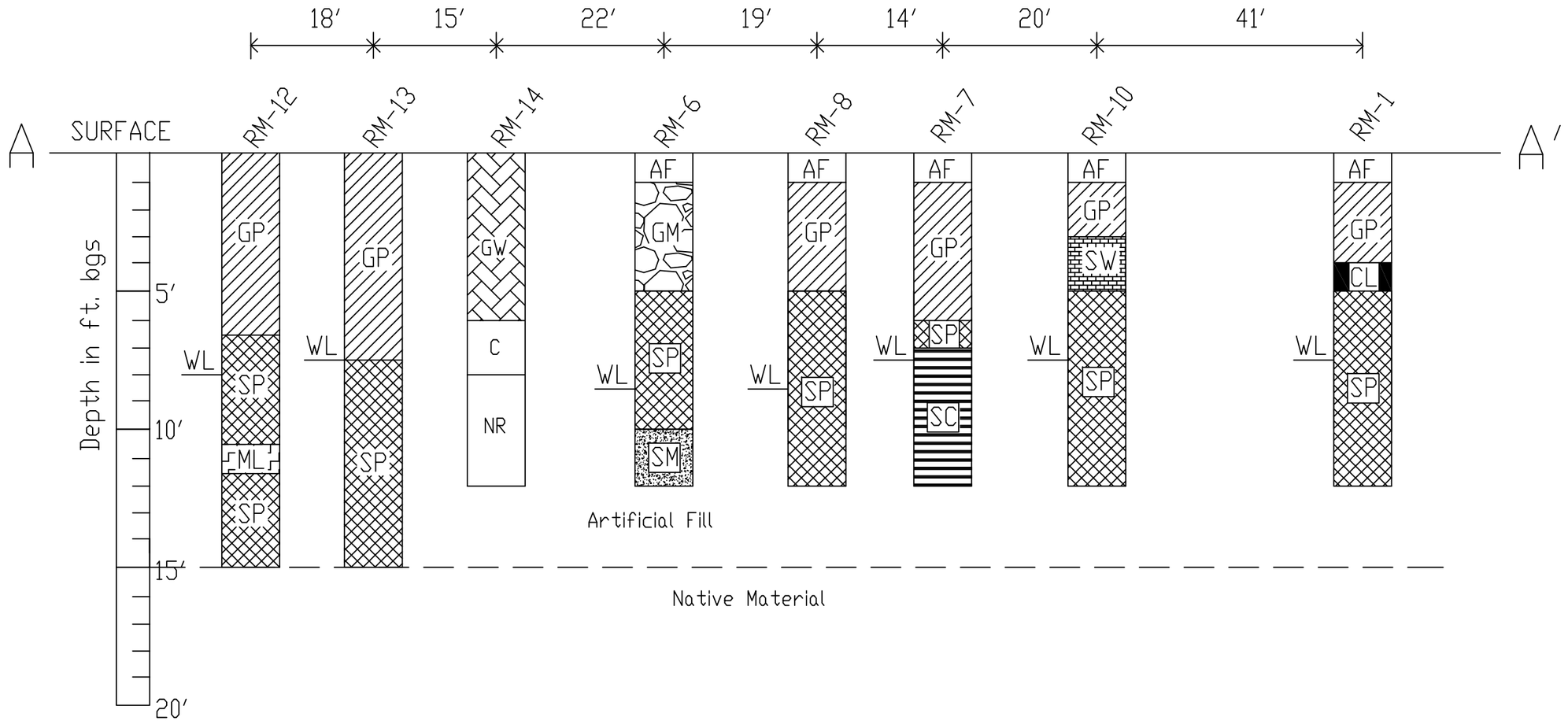
DESIGNED BY:	CHECKED BY:	**VICINITY MAP** PORT OF OAKLAND 801 MARITIME STREET OAKLAND, CA	DATE: 02/21/2007	FIGURE: 1
DRAWN BY: CA	SCALE:		R&M Environmental and Infrastructure Engineering, Inc.	
PROJECT NO:				



DESIGNED BY:	CHECKED BY:	**PROJECT SITE PLAN** PORT OF OAKLAND 801 MARITIME STREET OAKLAND, CA	DATE: 02/21/2007	FIGURE: 2
DRAWN BY: CA	SCALE:		R&M Environmental	
PROJECT NO:				

Source: Adapted from, Figure 2, Site Plan, 801 Maritime, Alisto Engineering Group, 8/5/1996


0
25
50
APPROXIMATE SCALE IN FEET
HYDROGEOLOGIC CROSS SECTIONS
A'
B
ASSUMED GENERAL DIRECTION OF GROUNDWATER
RM-1
RM-9
RM-10
A-2
RM-8
B-2
RM-2
RM-7
A-3
RM-15
M-2
RM-6
Approximate extent of 1989 Removal Action
C-2
M-1
A-1
RM-4
RM-11
RM-5
B-1
MW-1
C-3
C-1
RM-3
RM-12
RM-13
RM-14
B'
A
N
LEGEND
- GW MONITORING WELL
- BORING LOCATIONS (MARCH 15, 2007)
- FORMER UST LOCATIONS
- FORMER FUEL ISLAND AND PUMP
- BORING LOCATIONS (SEPTEMBER 25, 2008)
- SOIL SAMPLING LOCATIONS CONTAINING DETECTABLE PETROLEUM HYDROCARBONS DURING REMOVAL OF UST (FEBRUARY, 16, 1989)
DESIGNED BY:
CHECKED BY:
DRAWN BY: RC
SCALE:
PROJECT NO:
PROPOSED BORING LOCATIONS
Port of Oakland
801 Maritime Street
Oakland, CA
DATE: 8/12/2008
FIGURE: 3
R&M Environmental
and Infrastructure Engineering, Inc.



NOTES:

AF	Aggregate Fill	SW	Gravely Sand	GW	Gravel
GM	Sandy Silty Gravel	CL	Clay	ML	Sandy Clay
SP	Fine Grained Sand				
SM	Silty Sand				
GP	Sandy Gravel				
SC	Clayey Sand				

WL = Water Level

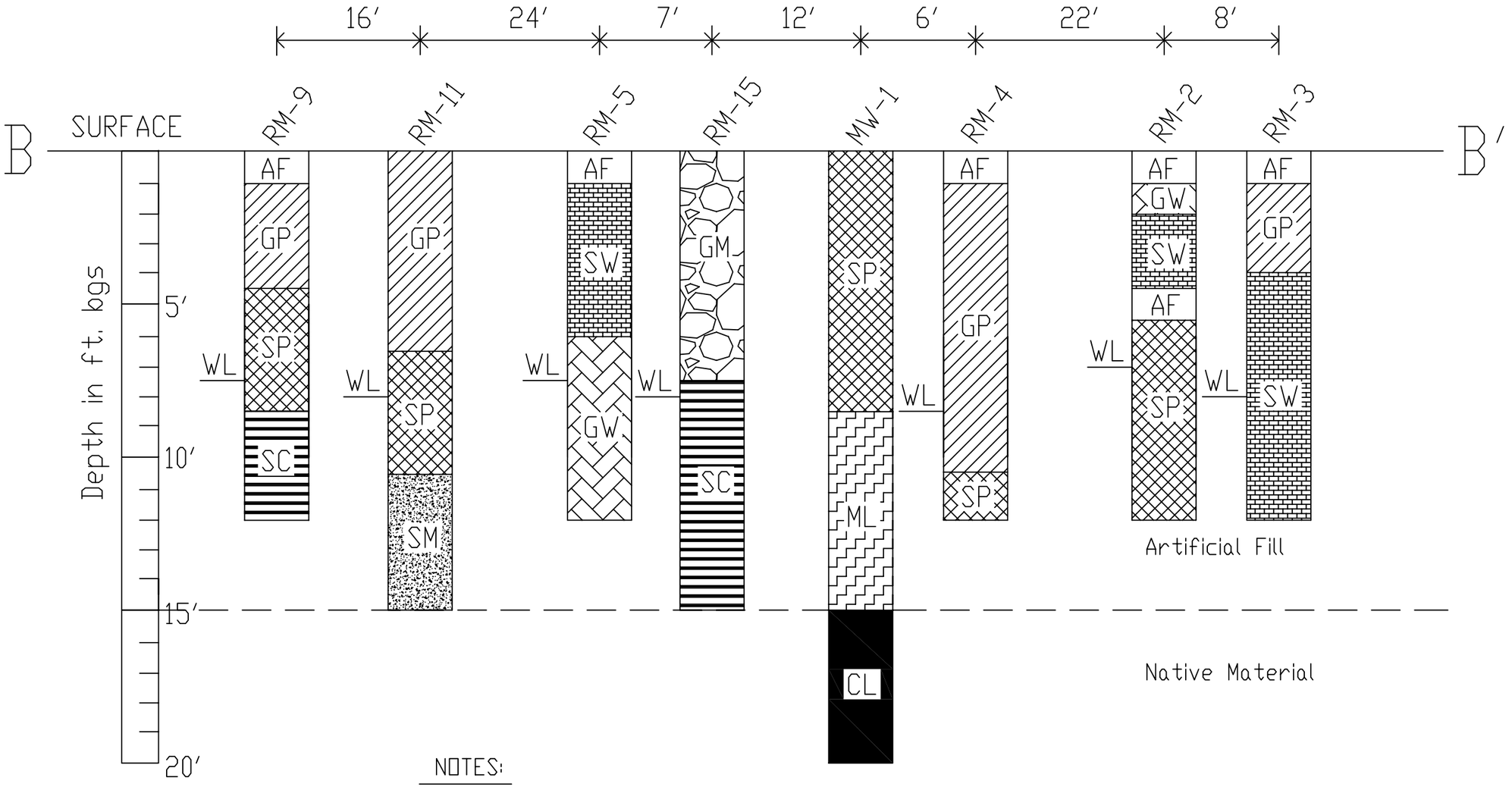
See Figure 3 for boring locations.

See Appendix D for detailed boring logs.

NR = No recovery

C = Concrete

DESIGNED BY:	CHECKED BY:	SW-NE (Parallel to Groundwater) Stratigraphic Cross Section of the Site DIAMOND MANUFACTURING 1763 & 1753 TIMOTHY DR. SAN LEANDRO, CA 94578	DATE: 3-7-2008	FIGURE: 4
DRAWN BY: CA	SCALE:		R&M Environmental and Infrastructure Engineering, Inc.	
PROJECT NO: 1371				



NOTES:

AF	Aggregate Fill	SW	Gravely Sand	GW	Gravel
GM	Sandy Silty Gravel	CL	Clay	ML	Sandy Silt
SP	Fine Grained Sand				
SM	Silty Sand				
GP	Sandy Gravel				
SC	Clayey Sand				

WL = Water Level

See Figure 3 for boring locations.

See Appendix D for detailed boring logs.

DESIGNED BY:	CHECKED BY:	A NW-SE (Perpendicular to GW) Stratigraphic Cross Section of the Site DIAMOND MANUFACTURING 1763 & 1753 TIMOTHY DR. SAN LEANDRO, CA 94578	DATE: 3-7-2008	FIGURE: 5
DRAWN BY: CA	SCALE:		R&M Environmental and Infrastructure Engineering, Inc.	
PROJECT NO: 1371				

LEGEND

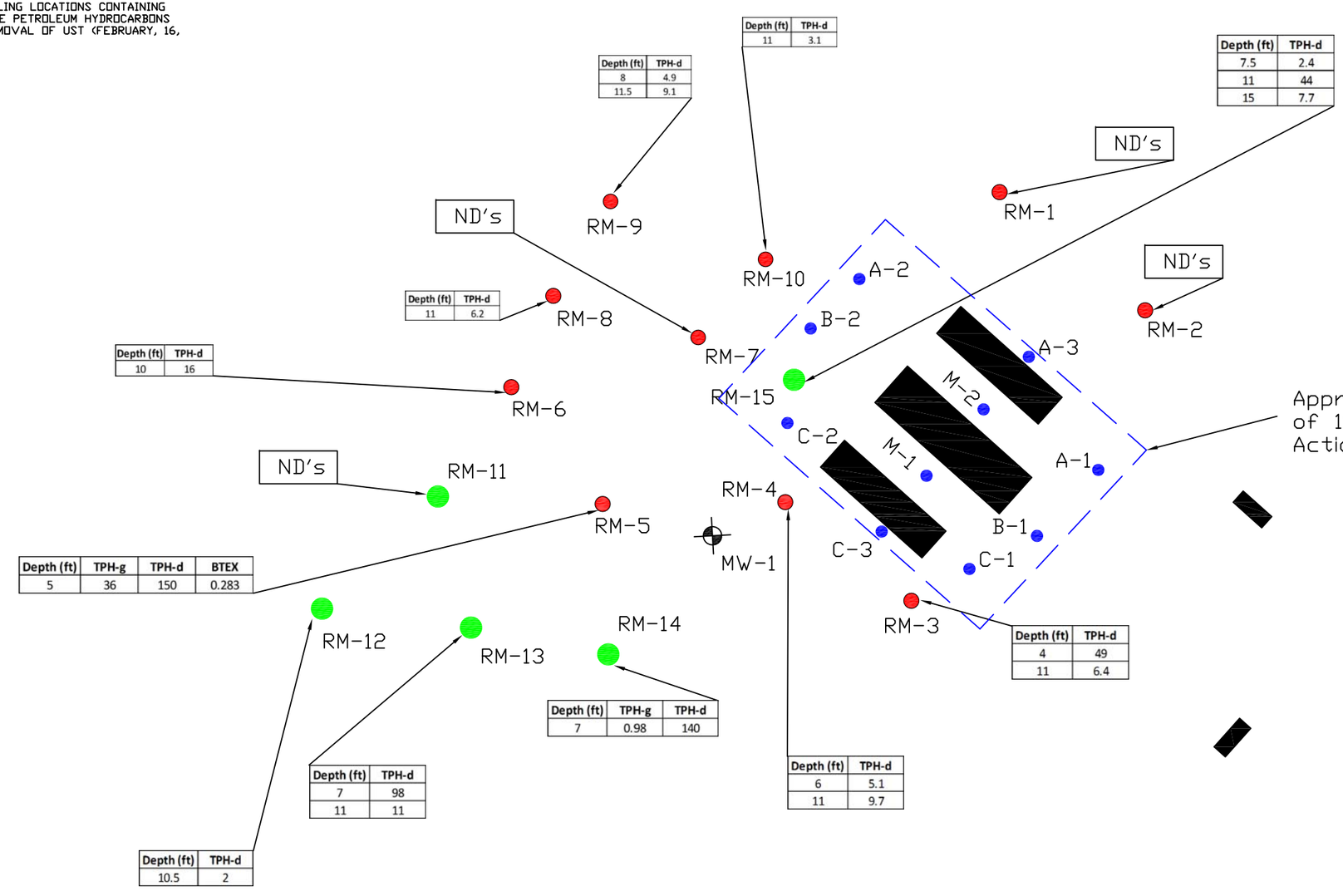
- GW MONITORING WELL
- BORING LOCATIONS (MARCH 15, 2007)
- FORMER UST LOCATIONS
- FORMER FUEL ISLAND AND PUMP
- BORING LOCATIONS (SEPTEMBER 25, 2008)
- SOIL SAMPLING LOCATIONS CONTAINING DETECTABLE PETROLEUM HYDROCARBONS DURING REMOVAL OF UST (FEBRUARY, 16, 1989)

Soil Results: (mg/Kg)

0 25 50

APPROXIMATE SCALE IN FEET

ASSUMED GENERAL DIRECTION OF GROUNDWATER



Approximate extent of 1989 Removal Action

N

Note: See Tables 1 & 4 for analytical results

DESIGNED BY:	CHECKED BY:	SOIL SAMPLING ANALYTICAL RESULTS Port of Oakland 801 Maritime Street Oakland, CA	DATE: 10/10/2008 / FIGURE: 6
DRAWN BY: RC	SCALE:		R&M Environmental and Infrastructure Engineering, Inc.
PROJECT NO:			

LEGEND

- ⌖ – GW MONITORING WELL
- ● – BORING LOCATIONS (MARCH 15, 2007)
- ▬ – FORMER UST LOCATIONS
- ▬ – FORMER FUEL ISLAND AND PUMP
- ● – BORING LOCATIONS (SEPTEMBER 25, 2008)
- ● – SOIL SAMPLING LOCATIONS CONTAINING DETECTABLE PETROLEUM HYDROCARBONS DURING REMOVAL OF UST (FEBRUARY, 16, 1989)

0 25 50

APPROXIMATE SCALE IN FEET

Groundwater Results: (µg/L)

ASSUMED GENERAL DIRECTION OF GROUNDWATER

ND's

RM-9

ND's

RM-10

ND's

RM-1

ND's

RM-8

ND's

RM-7

ND's

RM-6

Analyte	Result
DIPE	3.1

RM-2

ND's

A-2

B-2

A-3

RM-15

C-2

M-2

M-1

A-1

B-1

C-3

C-1

RM-4

RM-3

ND's

Approximate extent of 1989 Removal Action

ND's

RM-11

RM-5

MW-1

Analyte	Result
TPH-g	73
TPH-d	57
BTEX	5.8
MTBE	4

RM-12

RM-13

RM-14

ND's

Analyte	Result
TPH-d	150

Analyte	Result
TPH-g	65
TPH-d	59
BTEX	10.7

Analyte	Results	
	9/28/2007	9/25/2008
TPH-g	76	80
TPH-d	4000	ND<50
BTEX	13.3	10.9

ND's

N

Note: See Tables 2 & 5 for analytical results

DESIGNED BY:	CHECKED BY:	GRAB GROUNDWATER SAMPLING ANALYTICAL RESULTS Port of Oakland 801 Maritime Street Oakland, CA	DATE: 10/10/2008	FIGURE: 7
DRAWN BY: RC	SCALE:		R&M Environmental and Infrastructure Engineering, Inc.	
PROJECT NO:				

APPENDIX A

PHOTOGRAPHS

Photo #1 - General site location as it appears today.

Photo #2 - Marking of the proposed boring locations.

Photo #3 - Subsurface utility clearance of the proposed drilling locations.

Photo #4 - Using hollow-stem auger to drill past surface asphalt layer.

Photo #5 - Hand augering boreholes to a depth of 5 ft before employing the "direct push" method.

Photo #6 - The geologist visually inspecting and describing soil samples according to the Unified Soil Classification System.

Photo #7 - Temporary piezometer with 3/4-inch diameter PVC screen and riser pipe being installed in borehole RM-12.

Photo #8 - Borehole being topped off with cement slurry and dyed to match the surrounding surface.

Photo #9 - Two 55-gallon drums containing the investigative derived waste water and soil that were left on site for profiling and disposal by the Port of Oakland.

(Boring RM-14)

(Boring RM-13)

Photos #10 and #11 - The subsurface material down to a depth of approximately 7 ft that appeared to be imported fill material, generally consisted of gravelly material containing asphalt and concrete pieces.

Photo #12 - Refusal was encountered at the originally planned RM-13 location (top left hole) at 3.5 ft below ground surface forcing to relocate RM-13 to a second location nearby (bottom hole) where again refusal was encountered, this time at 6.5 ft bgs, and finally to a third location where total depth could be reached (top right hole).

(Boring RM-13)

(Boring RM-15)

Photos #13 and #14 - Gravelly layer encountered to a depth of approximately 7 ft bgs that was underlain by a layer of olive grey/brown fine-medium sized loose sand which extended to the maximum depth of penetration.

APPENDIX B

QA/QC SUMMARY REVIEWS, CERTIFIED ANALYTICAL REPORTS FOR SOIL/GROUNDWATER SAMPLING, AND CHAIN-OF-CUSTODY DOCUMENTATION

R&M Environmental and Infrastructure Engineering, Inc.

Memo

To: Masood Ghassemi

From: Rafael Carranza

Date: October 3, 2008

Re: QA/QC Review of Analytical Data
September 25, 2008 Sampling Event
Project Number (4009 – 801 Maritime Street, Oakland, CA)

On September 25, 2008 groundwater samples were collected from monitoring well MW-1 located at Berth 24, 801 Maritime Street, Oakland, CA. The samples were analyzed by Curtis & Tompkins, Ltd (Berkeley, CA) for the following parameters:

Analysis Methods

- Total petroleum hydrocarbon as gasoline via EPA Method 8015B;
- Total petroleum hydrocarbon as diesel via EPA Methods 8015B with silica gel clean-up via EPA Method 3630C;
- Benzene, toluene, ethylbenzene, xylenes and methyl tert-butyl ether via EPA Method 8021B; and
- Total dissolved solids via EPA Method 160.1.

The following data set was reviewed in support of this investigation:

Data Set	Date Sampled	Matrix
206385	9/25/2008	Groundwater

The quality assurance/quality control ("QA/QC") analytical results in association with the analytical results for groundwater samples were evaluated for achievement of any method-specific QA/QC criteria. The QA/QC review results are discussed in the following pages.

1. Chain-of-Custody: No problems were noted with the chain-of-custody ("COC") forms.

2. Requested Analyses Completed: All analyses were performed as requested on the COC. The following requests were noted on the COCs and performed by the laboratory as requested:

   - Silica gel cleanup (SGCU) analysis was performed on sample MW-1 when analyzing for TPH-d

3. Holding Times: All samples were extracted and/or analyzed within the appropriate holding times.

4. Sample Preservation: No problems were noted with sample preservation.

5. Laboratory Method Blanks: Method blanks were reviewed to determine the potential for sample cross contamination due to handling within the laboratory. No detections of target compounds were noted in the method blanks.

6. Surrogates: Surrogates are added for organic analyses. Surrogates are compounds not normally found in the environment that are added (spiked) to samples and analyzed for percent recovery ("REC"). Maximum and minimum limits on the REC are set by the laboratory for the method used.

   All surrogate RECs were within control limits.

7. Laboratory Control Sample ("LCS")/Laboratory Control Sample Duplicate ("LCSD"): The LCS and LCSD are analyte-free, lab-created samples that are spiked with a known amount of target analyte(s) and analyzed to verify the extraction process. As a measure of analytical accuracy, the results of the LCS are compared against the known analyte concentrations in the spike to determine REC. The purpose of the LCS is to determine the performance of the laboratory with respect to analyte recovery, independent of field sample matrix interference. The LCSD is a duplicate preparation and analysis of the LCS. Results of the LCS and LCSD are compared to each other to determine analytical precision using the relative percent difference ("RPD"). Curtis and Tompkins provided blind spike ("BS") and Blind Spike Duplicate ("BSD") samples in their analytical report (# 206385), which are also prepared and analyzed similarly to LCS/LCSD samples.

   Note: A high response was observed for ethylbenzene in the LCS and the affected data was qualified in the report with a "b".

8. Matrix Spike and Matrix Spike Duplicate ("MS/MSD"): MS/MSDs are typically run for inorganic and/or organic analyses. A sample is split into three portions (original, MS, and MSD), and a known amount of a target analyte is added (spiked) to two portions (MS and MSD) of the sample. The results are compared against the un-spiked portion of the sample for REC of the spike. Additionally, the results are compared against each other using a RPD to determine reproducibility.

   All MS/MSD results were within QC limits.

9. Field Duplicate Results: A field duplicate was not collected during the sampling event.

10. Detection and Quantitation Limits: No dilutions were required for the analyses.

11. Conclusion: No data were rejected as a result of this data review. The data are usable, as qualified, in reporting the results of this sampling event.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 206385

Sampler: Rafael Carranza

Project No.: 4009

Report To: rcarranza@grandmenvironmental.com

Project Name: 801 Maritime

Company: R&M Environmental

Project P.O.: 4009

Telephone: (510) 364-4431

Turnaround Time: Standard

Fax: (510) 553-2145

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: ICE	Preservative: none	Analysis: TPH-g	Analysis: BTEX	Analysis: MTBE	Analysis: TPH-d w/silica gel clean up	Analysis: TDS	Analysis: EDF
1	MW-1	8:21		X		6x40mL VOA	X					X	X	X			X
	MW-1	8:21				1x1L amber					X				X		X
	MW-1	8:21				1x250mL POLY					X					X	X
2	QCTB	9:15				4 x 40mL VOA	X					X	X	X			X

Notes: Directly invoice the Port of Oakland, attn: John Prall

SAMPLE RECEIPT
☒ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY: Rafael Carranza — 9/25/08 14:30 DATE / TIME

DATE / TIME

DATE / TIME

SIGNATURE

RECEIVED BY:

9/25/08 14:30 DATE / TIME

DATE / TIME

DATE / TIME

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 206385 Date Received 9/25/08 Number of coolers 1
Client R&M ENV. Project 861 MARITIME

Date Opened 9/25/08 By (print) M VILLANUEVA (sign)
Date Logged in 9-26-08 By (print) F NICHOLS (sign)

1. Did cooler come with a shipping slip (airbill, etc)? ..... YES (NO)
   Shipping info _____
2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☐ (NO)
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? ..... YES NO (N/A)
3. Were custody papers dry and intact when received? ..... (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? ..... (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ..... (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) _____

☑ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? ..... YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? ..... (YES) NO
10. Are samples in the appropriate containers for indicated tests? ..... (YES) NO
11. Are sample labels present, in good condition and complete? ..... (YES) NO
12. Do the sample labels agree with custody papers? ..... (YES) NO
13. Was sufficient amount of sample sent for tests requested? ..... (YES) NO
14. Are the samples appropriately preserved? ..... (YES) NO N/A
15. Are bubbles > 6mm absent in VOA samples? ..... YES (NO) N/A
16. Was the client contacted concerning this sample delivery? ..... YES NO
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS
2/6 MW-1 VOAs w/ Bubble

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009		
Matrix:	Water	Sampled:	09/25/08
Units:	ug/L	Received:	09/25/08
Diln Fac:	1.000		

Field ID: MW-1 Lab ID: 206385-001
Type: SAMPLE

Analyte	Result	RL	Batch#	Analyzed	Analysis
Gasoline C7-C12	80	50	143047	09/29/08	EPA 8015B
MTBE	ND	2.0	143047	09/29/08	EPA 8021B
Benzene	3.4	0.50	143047	09/29/08	EPA 8021B
Toluene	1.9	0.50	143047	09/29/08	EPA 8021B
Ethylbenzene	1.0	0.50	143147	10/01/08	EPA 8021B
m,p-Xylenes	2.8	0.50	143047	09/29/08	EPA 8021B
o-Xylene	1.8	0.50	143047	09/29/08	EPA 8021B

Surrogate	%REC	Limits	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	101	61-149	143047	09/29/08	EPA 8015B
Bromofluorobenzene (FID)	100	65-146	143047	09/29/08	EPA 8015B
Trifluorotoluene (PID)	99	52-143	143047	09/29/08	EPA 8021B
Bromofluorobenzene (PID)	99	56-141	143047	09/29/08	EPA 8021B

Field ID: QCTB Batch#: 143047
Type: SAMPLE Analyzed: 09/29/08
Lab ID: 206385-002

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	101	61-149	EPA 8015B
Bromofluorobenzene (FID)	103	65-146	EPA 8015B
Trifluorotoluene (PID)	93	52-143	EPA 8021B
Bromofluorobenzene (PID)	99	56-141	EPA 8021B

NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009		
Matrix:	Water	Sampled:	09/25/08
Units:	ug/L	Received:	09/25/08
Diln Fac:	1.000		

Type: BLANK
Lab ID: QC462625
Batch#: 143047
Analyzed: 09/29/08

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	105	61-149	EPA 8015B
Bromofluorobenzene (FID)	106	65-146	EPA 8015B
Trifluorotoluene (PID)	104	52-143	EPA 8021B
Bromofluorobenzene (PID)	105	56-141	EPA 8021B

Type: BLANK
Lab ID: QC463081
Batch#: 143147
Analyzed: 10/01/08
Analysis: EPA 8021B

Analyte	Result	RL
Ethylbenzene	ND	0.50

Surrogate	Result	%REC	Limits
Trifluorotoluene (FID)	NA		
Bromofluorobenzene (FID)	NA		
Trifluorotoluene (PID)		96	52-143
Bromofluorobenzene (PID)		96	56-141

NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC462626	Batch#:	143047
Matrix:	Water	Analyzed:	09/29/08
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	970.4	97	78-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	119	61-149
Bromofluorobenzene (FID)	107	65-146

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC462627	Batch#:	143047
Matrix:	Water	Analyzed:	09/29/08
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	10.00	10.00	100	61-143
Benzene	10.00	11.22	112	80-120
Toluene	10.00	11.05	110	77-120
Ethylbenzene	10.00	11.79 b	118	79-123
m,p-Xylenes	10.00	11.44	114	78-123
o-Xylene	10.00	10.45	105	78-122

Surrogate	%REC	Limits
Trifluorotoluene (PID)	106	52-143
Bromofluorobenzene (PID)	104	56-141

b= See narrative

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Field ID:	MW-1	Batch#:	143047
MSS Lab ID:	206385-001	Sampled:	09/25/08
Matrix:	Water	Received:	09/25/08
Units:	ug/L	Analyzed:	09/29/08
Diln Fac:	1.000		

Type: MS Lab ID: QC462632

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	79.71	2,000	1,918	92	65-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	61-149
Bromofluorobenzene (FID)	106	65-146

Type: MSD Lab ID: QC462633

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,946	93	65-120	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	125	61-149
Bromofluorobenzene (FID)	105	65-146

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC463083	Batch#:	143147
Matrix:	Water	Analyzed:	10/01/08
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Ethylbenzene	10.00	11.18	112	79-123

Surrogate	%REC	Limits
Trifluorotoluene (PID)	97	52-143
Bromofluorobenzene (PID)	99	56-141

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	4009	Analysis:	EPA 8015B
Field ID:	MW-1	Sampled:	09/25/08
Matrix:	Water	Received:	09/25/08
Units:	ug/L	Prepared:	09/29/08
Diln Fac:	1.000	Analyzed:	10/01/08
Batch#:	143060		

Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 206385-001

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	120	58-127

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC462712

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	103	58-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	4009	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC462713	Batch#:	143060
Matrix:	Water	Prepared:	09/29/08
Units:	ug/L	Analyzed:	10/01/08

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,193	88	52-120

Surrogate	%REC	Limits
Hexacosane	103	58-127

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	4009	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	143060
MSS Lab ID:	206246-005	Sampled:	09/23/08
Matrix:	Water	Received:	09/23/08
Units:	ug/L	Prepared:	09/29/08
Diln Fac:	1.000	Analyzed:	10/01/08

Type: MS Cleanup Method: EPA 3630C
Lab ID: QC462714

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	919.0	2,500	3,528	104	43-121

Surrogate	%REC	Limits
Hexacosane	115	58-127

Type: MSD Cleanup Method: EPA 3630C
Lab ID: QC462715

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	3,014	84	43-121	16	36

Surrogate	%REC	Limits
Hexacosane	102	58-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Dissolved Solids (TDS)

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	METHOD
Project#:	4009	Analysis:	SM2540C
Analyte:	Total Dissolved Solids	Sampled:	09/25/08
Field ID:	MW-1	Received:	09/25/08
Matrix:	Water	Prepared:	09/29/08
Units:	mg/L	Analyzed:	09/30/08
Batch#:	143058		

Type	Lab ID	Result	RL	Diln Fac
SAMPLE	206385-001	1,730	33	3.333
BLANK	QC462700	ND	10	1.000

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Dissolved Solids (TDS)

Lab #:	206385	Location:	801 Maritime
Client:	R&M Environmental	Prep:	METHOD
Project#:	4009	Analysis:	SM2540C
Analyte:	Total Dissolved Solids	Batch#:	143058
Field ID:	ZZZZZZZZZZ	Sampled:	09/26/08
MSS Lab ID:	206390-002	Received:	09/26/08
Matrix:	Water	Prepared:	09/29/08
Units:	mg/L	Analyzed:	09/30/08

Type	Lab ID	MSS Result	Spiked	Result	RL	%REC	Limits	RPD	Lim	Diln Fac
BS	QC462701		104.0	96.00		92	73-120			1.000
BSD	QC462702		104.0	100.0		96	73-120	4	22	1.000
SDUP	QC462703	893.3		906.7	11.11			1	20	1.111

RL= Reporting Limit
RPD= Relative Percent Difference

R&M Environmental and Infrastructure Engineering, Inc.

Memo

Date: October 10, 2008

To: Masood Ghassemi

From: Rafael Carranza

Re: QA/QC Review of Analytical Data
September 25, 2008 Sampling Event
Project Number (4009 – 801 Maritime Street, Oakland, CA)

Five groundwater samples and 10 soil samples were collected on September 25, 2008 from Berth 24, 801 Maritime Street, Oakland, CA. Samples were analyzed by Curtis & Tompkins, Ltd (Berkeley, CA) for the following parameters:

Analysis Methods

- Total petroleum hydrocarbon as gasoline (TPH-g) via EPA Method 8015M
- Total petroleum hydrocarbon as diesel (TPH-d) via EPA Method 8015M with silica gel clean-up via EPA Method 3630C
- Benzene, toluene, ethylbenzene and xylenes (BTEX), methyl tert-butyl ether (MTBE), 1,2-Dibromoethane (EDB), 1,2-Dichloroethane (EDC), Methyl tert-Amyl Ether (TAME), Ethyl tert-Butyl Ether (ETBE), Isopropyl Ether (DIPE), Tert-Butyl Alcohol (TBA), and Ethanol (ETOH) via EPA Method 8020.

The following data set was reviewed in support of this investigation:

Data Set	Date Sampled	Matrix
206386	09/25/2008	Groundwater and soil

The quality assurance/quality control (QA/QC) analytical results in association with the analytical results for soil and groundwater samples were evaluated for achievement of any method-specific QA/QC criteria. The QA/QC review results are discussed below.

1. Chain-of-Custody – No problems were noted with the chain-of-custody (COC) forms.

2. Requested Analyses Completed – All analyses were performed as requested on the COC. The following requests were noted on the COCs and performed by the laboratory as requested:

- Silica gel cleanup (SGCU) analysis was performed for all samples collected on September 25, 2008 with detections of TPH-d

3. Holding Times – All samples were extracted and/or analyzed within the appropriate holding times.

4. Sample Preservation – No problems were noted with sample preservation.

5. Laboratory Method Blanks – Method blanks were reviewed to determine the potential for sample cross contamination due to handling within the laboratory. No detections of target compounds were noted in the method blanks.

6. Surrogates – Surrogates are added for organic analyses. Surrogates are compounds not normally found in the environment that are added (spiked) into samples and analyzed for percent recovery (REC). Maximum and minimum limits on the REC are set by the laboratory for the method used.

   Note: Low surrogate recoveries were observed for hexacosane in RM-13. The sample could not be re-extracted because there was no sample left. Low surrogate recoveries were observed for dibromofluoromethane in RM-14-7 due to matrix interference and the low surrogate recovery was confirmed by re-analysis.

7. Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) – The LCS and LCSD are analyte-free, lab-created samples that are spiked with a known amount of target analyte(s) and analyzed to verify the extraction process. As a measure of analytical accuracy, the results of the LCS are compared against the known analyte concentrations in the spike to determine REC. The purpose of the LCS is to determine the performance of the laboratory with respect to analyte recovery, independent of field sample matrix interference. The LCSD is a duplicate preparation and analysis of the LCS. Results of the LCS and LCSD are compared to each other to determine analytical precision using the relative percent difference (RPD). Curtis and Tompkins provided blind spike (BS) and Blind Spike Duplicate (BSD) samples in their analytical report (# 206386), which are also prepared and analyzed similarly to LCS/LCSD samples.

   Note: Low recovery was observed for diesel c10-c24 in the LCS for batch 143144 and; the sample could not be re-extracted because there was no sample left. Low surrogate recoveries were observed for the LCS for batch 143144. The sample could not be re-extracted because there was no sample left.

8. Matrix Spike and Matrix Spike Duplicate (MS/MSD) – MS and MSDs are typically run for inorganic and/or organic analyses. A sample is split into three portions (original, MS, and MSD), and a known amount of a target analyte is added (spiked) to two portions (MS and MSD) of the sample. The results are compared against the un-spiked portion of the sample for REC of the spike. Additionally, the results are compared against each other using a RPD to determine reproducibility.

Note: High recoveries were observed for 1,2-dichloroethane in the MS/MSD for batch 143122; the parent sample was not a project sample; the LCS was within limits, the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated sample.

9. Field Duplicate Results – No duplicate samples were collected.

10. Detection and Quantitation Limits – RM-13-7 and RM-14-7 were diluted due to the dark and viscous nature of the sample extracts.

11. Conclusion – No data were rejected (R) as a result of this data review. The data are usable, as qualified, in reporting the results of this sampling event.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 206386

Sampler: Rafael Carranza

Project No.: 4009
Report To: rcarranza@randmenvironmental.com
Project Name: 801 Maritime
Company: R&M Environmental
Project P.O.: 4009
Telephone: (510) 364-4431
Turnaround Time: Standard
Fax: (510) 553-2145

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	none	Analysis: TPH-g	TPH-d w/silica gel cleanup	BTEX, EDB, EDC, TAME, ETBE, DIPE, TBA, ETOH, MTBE (8260)
1	RM-12-7	8:05	X			6" Tube					X	X	X	X
2	RM-12-10.5	8:10	X			6" Tube					X	X	X	X
3	RM-12	8:25		X		4x40mL VOA	X							X
	RM-12	8:25		X		1x1L amber					X			
4	RM-11-7	8:50	X			6" Tube					X	X	X	X
5	RM-11-10.5	8:55	X			6" Tube					X	X	X	X
6	RM-11	9:10		X		4x40mL VOA	X							X
	RM-11	9:10		X		1x1L amber					X			
7	RM-13-7	10:15	X			6" Tube					X	X	X	X
8	RM-13-11	10:20	X			6" Tube					X	X	X	X
9	RM-13	11:00		X		4x40mL VOA	X							X
	RM-13	11:00		X		1x1L amber					X			
10	RM-14-7	11:00	X			6" Tube					X	X	X	X

Notes: Directly Invoice the Port of Oakland, attn: John Frall

SAMPLE RECEIPT
☒ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY: Rafael Carranza
9/25/08 14:30 DATE / TIME
DATE / TIME
DATE / TIME

RECEIVED BY:
9/25/08 14:30 DATE / TIME
DATE / TIME
DATE / TIME

SIGNATURE

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 206386

Sampler: Rafael Carranza

Project No.: 4009
Report To: rcarranza@randmenvironmental.com
Project Name: 801 Maritime
Company: R&M Environmental
Project P.O.: 4009
Telephone: (510) 364-4431
Turnaround Time: Standard
Fax: (510) 553-2145

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	none	Analysis: TPH-g	TPH-d w/silica gel clean up	BTEX, EDB, EDC, TAME, ETBE, DIPE, TBA, ETOH, MTBE (8260)
11	RM-14	11:20		X		4x40mL VOA	X					X		X
	RM-14	11:20		X		1x1L amber					X		X	
12	RM-15-7.5	12:00	X			6" Tube					X	X	X	X
13	RM-15-11	12:05	X			6" Tube					X	X	X	X
14	RM-15-15	12:10	X			6" Tube					X	X	X	X
15	RM-15	12:35		X		4x40mL VOA	X					X	X	X
	RM-15	12:35		X		1x1L amber					X		X	

Notes: Directly Invoice the Port of Oakland, attn: John Prall

SAMPLE RECEIPT
☒ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY: Rafael Carranza
9/25/08 14:30 DATE / TIME
DATE / TIME
DATE / TIME

RECEIVED BY:
9/25/08 14:30 DATE / TIME
DATE / TIME
DATE / TIME

SIGNATURE

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 206386 Date Received 9/25/08 Number of coolers 1
Client R&M ENV. Project 861 MARITIME

Date Opened 9/25/08 By (print) M VILLANUEVA (sign)
Date Logged in 9-26-08 By (print) F Nichols (sign)

1. Did cooler come with a shipping slip (airbill, etc)? ..... YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☐ (NO)
   How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? ..... YES NO (N/A)

3. Were custody papers dry and intact when received? ..... (YES) NO

4. Were custody papers filled out properly (ink, signed, etc)? ..... (YES) NO

5. Is the project identifiable from custody papers? (If so fill out top of form) ..... (YES) NO

6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) _____

☑ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? ..... YES (NO)
   If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? ..... (YES) NO

10. Are samples in the appropriate containers for indicated tests? ..... (YES) NO

11. Are sample labels present, in good condition and complete? ..... (YES) NO

12. Do the sample labels agree with custody papers? ..... (YES) NO

13. Was sufficient amount of sample sent for tests requested? ..... (YES) NO

14. Are the samples appropriately preserved? ..... (YES) NO

15. Are bubbles > 6mm absent in VOA samples? ..... (YES) NO N/A

16. Was the client contacted concerning this sample delivery? ..... YES NO
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____

_____

_____

_____

_____

_____

_____

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/25/08
Units:	ug/L	Received:	09/25/08
Diln Fac:	1.000	Analyzed:	09/27/08
Batch#:	143003		

Field ID: RM-12 Lab ID: 206386-003
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	93	61-149
Bromofluorobenzene (FID)	99	65-146

Field ID: RM-11 Lab ID: 206386-006
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	92	61-149
Bromofluorobenzene (FID)	98	65-146

Field ID: RM-13 Lab ID: 206386-009
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	106	61-149
Bromofluorobenzene (FID)	109	65-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/25/08
Units:	ug/L	Received:	09/25/08
Diln Fac:	1.000	Analyzed:	09/27/08
Batch#:	143003		

Field ID: RM-14 Lab ID: 206386-011
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	65	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	61-149
Bromofluorobenzene (FID)	102	65-146

Field ID: RM-15 Lab ID: 206386-015
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	61-149
Bromofluorobenzene (FID)	101	65-146

Type: BLANK Lab ID: QC462449

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	61-149
Bromofluorobenzene (FID)	100	65-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC462450	Batch#:	143003
Matrix:	Water	Analyzed:	09/27/08
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,129	113	78-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	61-149
Bromofluorobenzene (FID)	102	65-146

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Field ID:	RM-12	Batch#:	143003
MSS Lab ID:	206386-003	Sampled:	09/25/08
Matrix:	Water	Received:	09/25/08
Units:	ug/L	Analyzed:	09/27/08
Diln Fac:	1.000		

Type: MS Lab ID: QC462451

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	18.68	2,000	1,558	77	65-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	136	61-149
Bromofluorobenzene (FID)	116	65-146

Type: MSD Lab ID: QC462452

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,425	70	65-120	9	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	144	61-149
Bromofluorobenzene (FID)	121	65-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	09/25/08
Basis:	as received	Received:	09/25/08

Field ID: RM-12-7
Type: SAMPLE
Lab ID: 206386-001
Batch#: 143005
Analyzed: 09/27/08

Analyte	Result	RL
Gasoline C7-C12	ND	0.96

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	55-151
Bromofluorobenzene (FID)	94	55-153

Field ID: RM-12-10.5
Type: SAMPLE
Lab ID: 206386-002
Batch#: 143005
Analyzed: 09/27/08

Analyte	Result	RL
Gasoline C7-C12	ND	0.99

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	55-151
Bromofluorobenzene (FID)	100	55-153

Field ID: RM-11-7
Type: SAMPLE
Lab ID: 206386-004
Batch#: 143005
Analyzed: 09/27/08

Analyte	Result	RL
Gasoline C7-C12	ND	0.94

Surrogate	%REC	Limits
Trifluorotoluene (FID)	111	55-151
Bromofluorobenzene (FID)	108	55-153

Field ID: RM-11-10.5
Type: SAMPLE
Lab ID: 206386-005
Batch#: 143005
Analyzed: 09/27/08

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	55-151
Bromofluorobenzene (FID)	102	55-153

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Matrix:	Soil	Dil'n Fac:	1.000
Units:	mg/Kg	Sampled:	09/25/08
Basis:	as received	Received:	09/25/08

Field ID: RM-13-7 Batch#: 143005
Type: SAMPLE Analyzed: 09/27/08
Lab ID: 206386-007

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	55-151
Bromofluorobenzene (FID)	103	55-153

Field ID: RM-13-11 Batch#: 143091
Type: SAMPLE Analyzed: 09/30/08
Lab ID: 206386-008

Analyte	Result	RL
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Trifluorotoluene (FID)	88	55-151
Bromofluorobenzene (FID)	91	55-153

Field ID: RM-14-7 Batch#: 143005
Type: SAMPLE Analyzed: 09/27/08
Lab ID: 206386-010

Analyte	Result	RL
Gasoline C7-C12	0.98	0.94

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	55-151
Bromofluorobenzene (FID)	111	55-153

Field ID: RM-15-7.5 Batch#: 143005
Type: SAMPLE Analyzed: 09/27/08
Lab ID: 206386-012

Analyte	Result	RL
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Trifluorotoluene (FID)	106	55-151
Bromofluorobenzene (FID)	105	55-153

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	09/25/08
Basis:	as received	Received:	09/25/08

Field ID: RM-15-11 Batch#: 143005
Type: SAMPLE Analyzed: 09/27/08
Lab ID: 206386-013

Analyte	Result	RL
Gasoline C7-C12	ND	0.93

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	55-151
Bromofluorobenzene (FID)	100	55-153

Field ID: RM-15-15 Batch#: 143005
Type: SAMPLE Analyzed: 09/27/08
Lab ID: 206386-014

Analyte	Result	RL
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	55-151
Bromofluorobenzene (FID)	106	55-153

Type: BLANK Batch#: 143005
Lab ID: QC462458 Analyzed: 09/27/08

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	55-151
Bromofluorobenzene (FID)	98	55-153

Type: BLANK Batch#: 143091
Lab ID: QC462855 Analyzed: 09/30/08

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	55-151
Bromofluorobenzene (FID)	96	55-153

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Type:	LCS	Basis:	as received
Lab ID:	QC462459	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143005
Units:	mg/Kg	Analyzed:	09/27/08

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	5.000	5.575	112	78-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	55-151
Bromofluorobenzene (FID)	99	55-153

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Field ID:	RM-12-7	Diln Fac:	1.000
MSS Lab ID:	206386-001	Batch#:	143005
Matrix:	Soil	Sampled:	09/25/08
Units:	mg/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/27/08

Type: MS Lab ID: QC462460

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<0.06583	9.804	9.824	100	29-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	133	55-151
Bromofluorobenzene (FID)	103	55-153

Type: MSD Lab ID: QC462461

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.53	9.842	94	29-120	7	34

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	55-151
Bromofluorobenzene (FID)	101	55-153

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Type:	LCS	Basis:	as received
Lab ID:	QC462857	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143091
Units:	mg/Kg	Analyzed:	09/30/08

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	5.000	4.640	93	78-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	128	55-151
Bromofluorobenzene (FID)	113	55-153

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8015B
Field ID:	RM-13-11	Diln Fac:	1.000
MSS Lab ID:	206386-008	Batch#:	143091
Matrix:	Soil	Sampled:	09/25/08
Units:	mg/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/30/08

Type: MS Lab ID: QC462858

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.07300	10.00	6.949	69	29-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	134	55-151
Bromofluorobenzene (FID)	100	55-153

Type: MSD Lab ID: QC462859

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.31	8.435	81	29-120	16	34

Surrogate	%REC	Limits
Trifluorotoluene (FID)	142	55-151
Bromofluorobenzene (FID)	111	55-153

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	4009	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/25/08
Units:	ug/L	Received:	09/25/08
Diln Fac:	1.000		

Field ID:	RM-12	Prepared:	10/03/08
Type:	SAMPLE	Analyzed:	10/07/08
Lab ID:	206386-003	Cleanup Method:	EPA 3630C
Batch#:	143256		

Analyte	Result	RL
Diesel C10-C24	ND	63

Surrogate	%REC	Limits
Hexacosane	65	58-127

Field ID:	RM-11	Prepared:	10/03/08
Type:	SAMPLE	Analyzed:	10/07/08
Lab ID:	206386-006	Cleanup Method:	EPA 3630C
Batch#:	143256		

Analyte	Result	RL
Diesel C10-C24	ND	63

Surrogate	%REC	Limits
Hexacosane	62	58-127

Field ID:	RM-13	Prepared:	10/03/08
Type:	SAMPLE	Analyzed:	10/07/08
Lab ID:	206386-009	Cleanup Method:	EPA 3630C
Batch#:	143256		

Analyte	Result	RL
Diesel C10-C24	150 Y	63

Surrogate	%REC	Limits
Hexacosane	31 *	58-127

Field ID:	RM-14	Prepared:	10/03/08
Type:	SAMPLE	Analyzed:	10/06/08
Lab ID:	206386-011	Cleanup Method:	EPA 3630C
Batch#:	143256		

Analyte	Result	RL
Diesel C10-C24	59 Y	50

Surrogate	%REC	Limits
Hexacosane	90	58-127

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	4009	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/25/08
Units:	ug/L	Received:	09/25/08
Diln Fac:	1.000		

Field ID:	RM-15	Prepared:	10/01/08
Type:	SAMPLE	Analyzed:	10/06/08
Lab ID:	206386-015	Cleanup Method:	EPA 3630C
Batch#:	143144		

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	73	58-127

Type:	BLANK	Prepared:	10/01/08
Lab ID:	QC463074	Analyzed:	10/02/08
Batch#:	143144	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	82	58-127

Type:	BLANK	Prepared:	10/03/08
Lab ID:	QC463547	Analyzed:	10/06/08
Batch#:	143256	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	97	58-127

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	4009	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC463075	Batch#:	143144
Matrix:	Water	Prepared:	10/01/08
Units:	ug/L	Analyzed:	10/02/08

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	857.8	34 *	52-120

Surrogate	%REC	Limits
Hexacosane	57 *	58-127

*= Value outside of QC limits; see narrative

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	4009	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	143144
MSS Lab ID:	206415-001	Sampled:	09/24/08
Matrix:	Water	Received:	09/26/08
Units:	ug/L	Prepared:	10/01/08
Diln Fac:	1.000	Analyzed:	10/03/08

Type: MS Lab ID: QC463076

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	95.26	2,500	1,286	48	43-121

Surrogate	%REC	Limits
Hexacosane	77	58-127

Type: MSD Lab ID: QC463077

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,303	48	43-121	1	36

Surrogate	%REC	Limits
Hexacosane	70	58-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	4009	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC463548	Batch#:	143256
Matrix:	Water	Prepared:	10/03/08
Units:	ug/L	Analyzed:	10/06/08

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,020	81	52-120

Surrogate	%REC	Limits
Hexacosane	87	58-127

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 3520C
Project#:	4009	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	143256
MSS Lab ID:	206415-009	Sampled:	09/24/08
Matrix:	Water	Received:	09/26/08
Units:	ug/L	Prepared:	10/03/08
Diln Fac:	1.000	Analyzed:	10/06/08

Type: MS Lab ID: QC463549

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	104.7	2,500	2,522	97	43-121

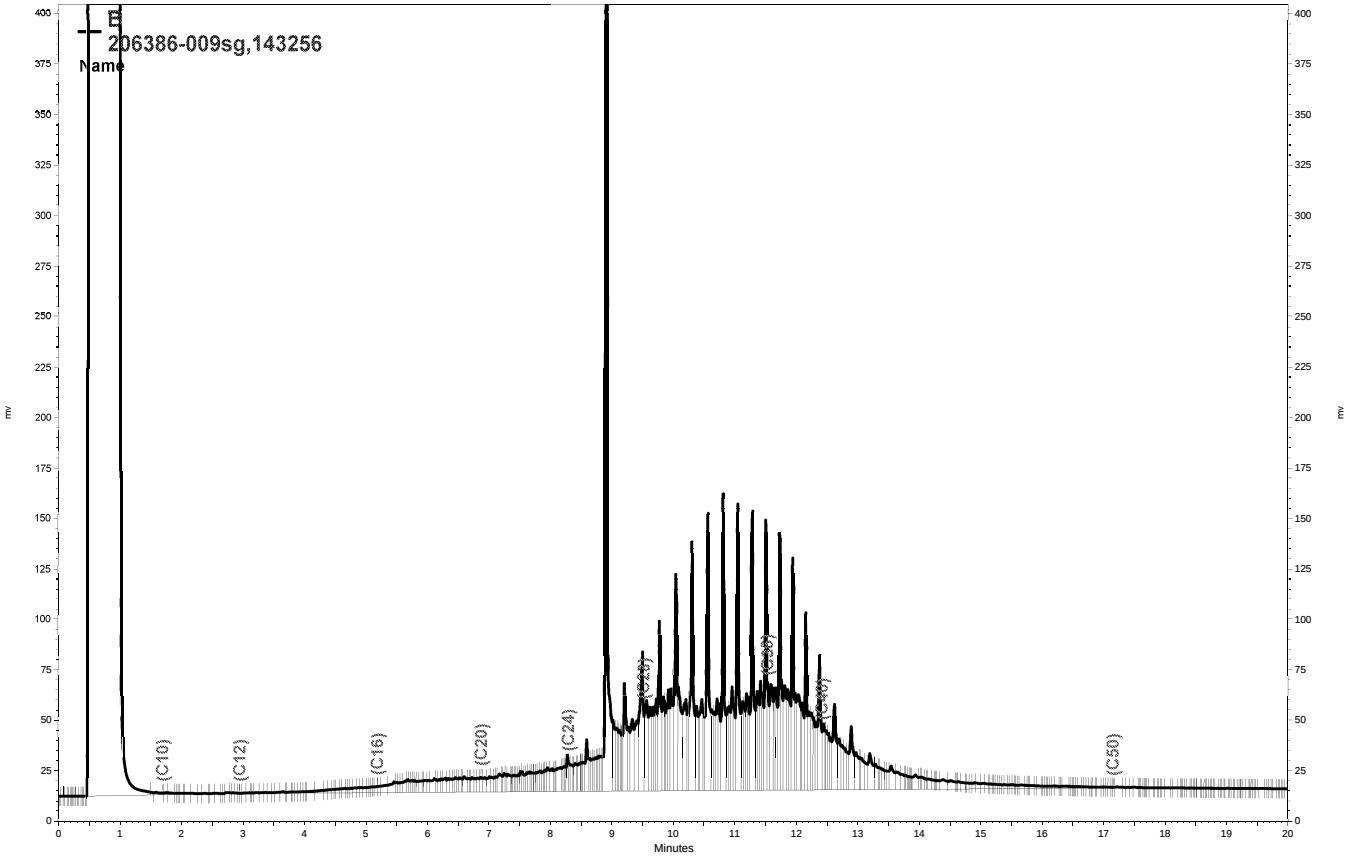
Surrogate	%REC	Limits
Hexacosane	98	58-127

Type: MSD Lab ID: QC463550

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,509	96	43-121	1	36

Surrogate	%REC	Limits
Hexacosane	99	58-127

RPD= Relative Percent Difference



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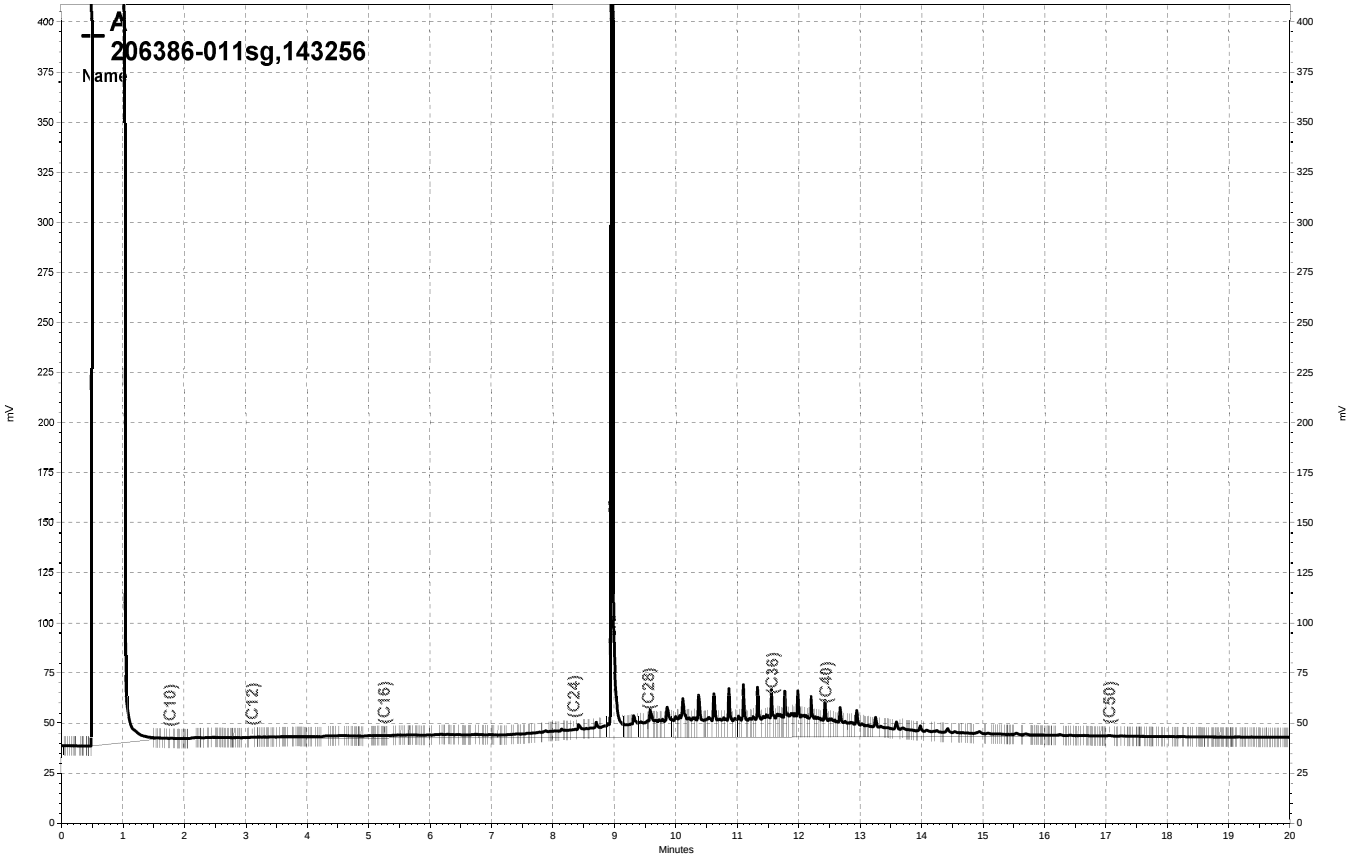

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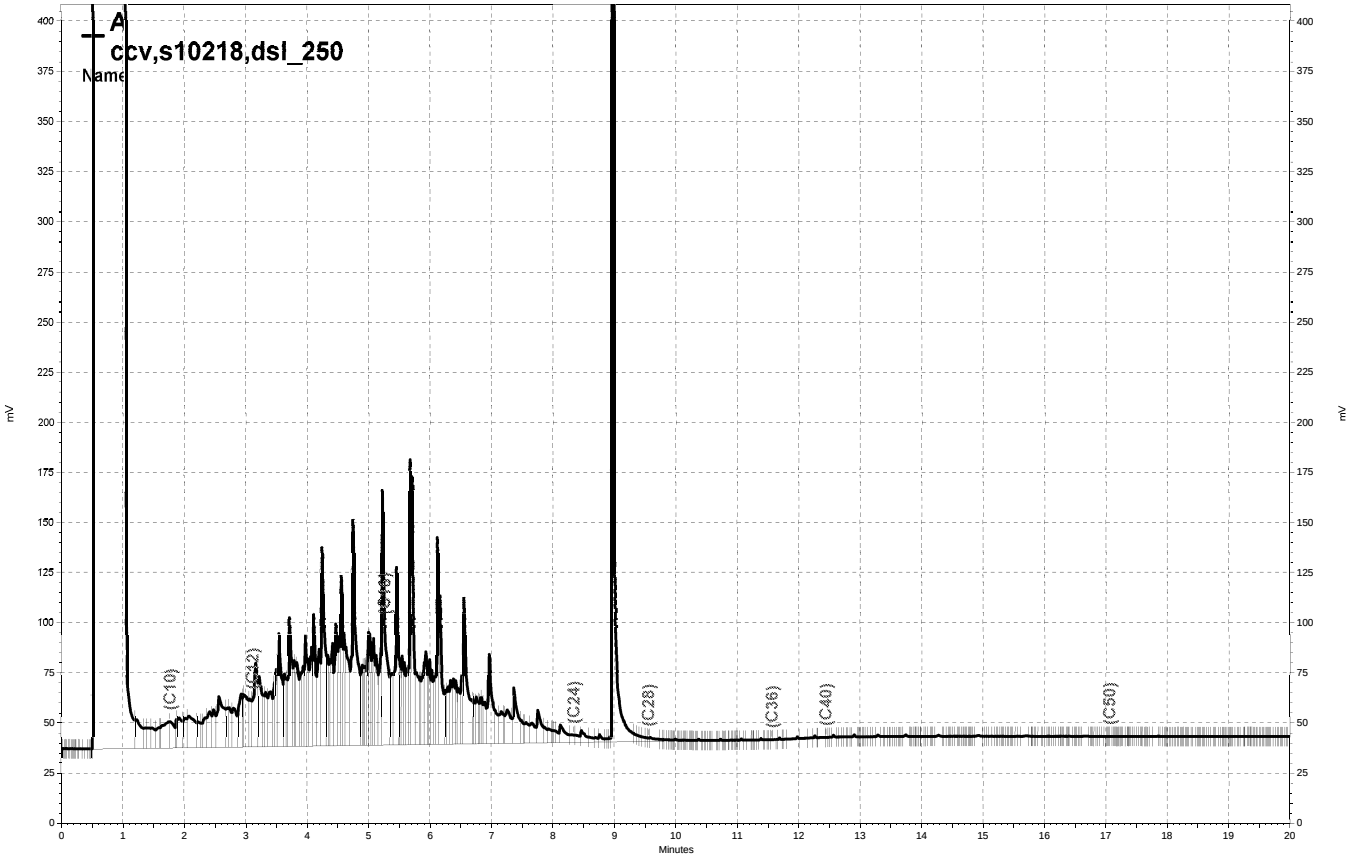

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Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	SHAKER TABLE
Project#:	4009	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	09/25/08
Units:	mg/Kg	Received:	09/25/08
Basis:	as received	Prepared:	09/29/08
Batch#:	143051	Analyzed:	09/30/08

Field ID: RM-12-7
Type: SAMPLE
Lab ID: 206386-001
Diln Fac: 1.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0

Surrogate	%REC	Limits
Hexacosane	103	46-130

Field ID: RM-12-10.5
Type: SAMPLE
Lab ID: 206386-002
Diln Fac: 1.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	2.0 Y	1.0

Surrogate	%REC	Limits
Hexacosane	81	46-130

Field ID: RM-11-7
Type: SAMPLE
Lab ID: 206386-004
Diln Fac: 1.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0

Surrogate	%REC	Limits
Hexacosane	105	46-130

Field ID: RM-11-10.5
Type: SAMPLE
Lab ID: 206386-005
Diln Fac: 1.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0

Surrogate	%REC	Limits
Hexacosane	104	46-130

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	SHAKER TABLE
Project#:	4009	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	09/25/08
Units:	mg/Kg	Received:	09/25/08
Basis:	as received	Prepared:	09/29/08
Batch#:	143051	Analyzed:	09/30/08

Field ID: RM-13-7
Type: SAMPLE
Lab ID: 206386-007
Diln Fac: 5.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	98 Y	5.0

Surrogate	%REC	Limits
Hexacosane	49	46-130

Field ID: RM-13-11
Type: SAMPLE
Lab ID: 206386-008
Diln Fac: 1.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	11 Y	1.0

Surrogate	%REC	Limits
Hexacosane	91	46-130

Field ID: RM-14-7
Type: SAMPLE
Lab ID: 206386-010
Diln Fac: 5.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	140 Y	5.0

Surrogate	%REC	Limits
Hexacosane	68	46-130

Field ID: RM-15-7.5
Type: SAMPLE
Lab ID: 206386-012
Diln Fac: 1.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	2.4 Y	1.0

Surrogate	%REC	Limits
Hexacosane	105	46-130

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	SHAKER TABLE
Project#:	4009	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	09/25/08
Units:	mg/Kg	Received:	09/25/08
Basis:	as received	Prepared:	09/29/08
Batch#:	143051	Analyzed:	09/30/08

Field ID: RM-15-11
Type: SAMPLE
Lab ID: 206386-013
Diln Fac: 1.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	44 Y	1.0

Surrogate	%REC	Limits
Hexacosane	101	46-130

Field ID: RM-15-15
Type: SAMPLE
Lab ID: 206386-014
Diln Fac: 1.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	7.7 Y	1.0

Surrogate	%REC	Limits
Hexacosane	101	46-130

Type: BLANK
Lab ID: QC462656
Diln Fac: 1.000
Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0

Surrogate	%REC	Limits
Hexacosane	96	46-130

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	SHAKER TABLE
Project#:	4009	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC462657	Batch#:	143051
Matrix:	Soil	Prepared:	09/29/08
Units:	mg/Kg	Analyzed:	09/30/08
Basis:	as received		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.23	46.99	94	51-123

Surrogate	%REC	Limits
Hexacosane	96	46-130

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	SHAKER TABLE
Project#:	4009	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	143051
MSS Lab ID:	206325-001	Sampled:	09/25/08
Matrix:	Soil	Received:	09/25/08
Units:	mg/Kg	Prepared:	09/29/08
Basis:	as received	Analyzed:	09/30/08
Diln Fac:	3.000		

Type: MS Cleanup Method: EPA 3630C
Lab ID: QC462658

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	270.1	50.48	229.0	-81 NM	38-140

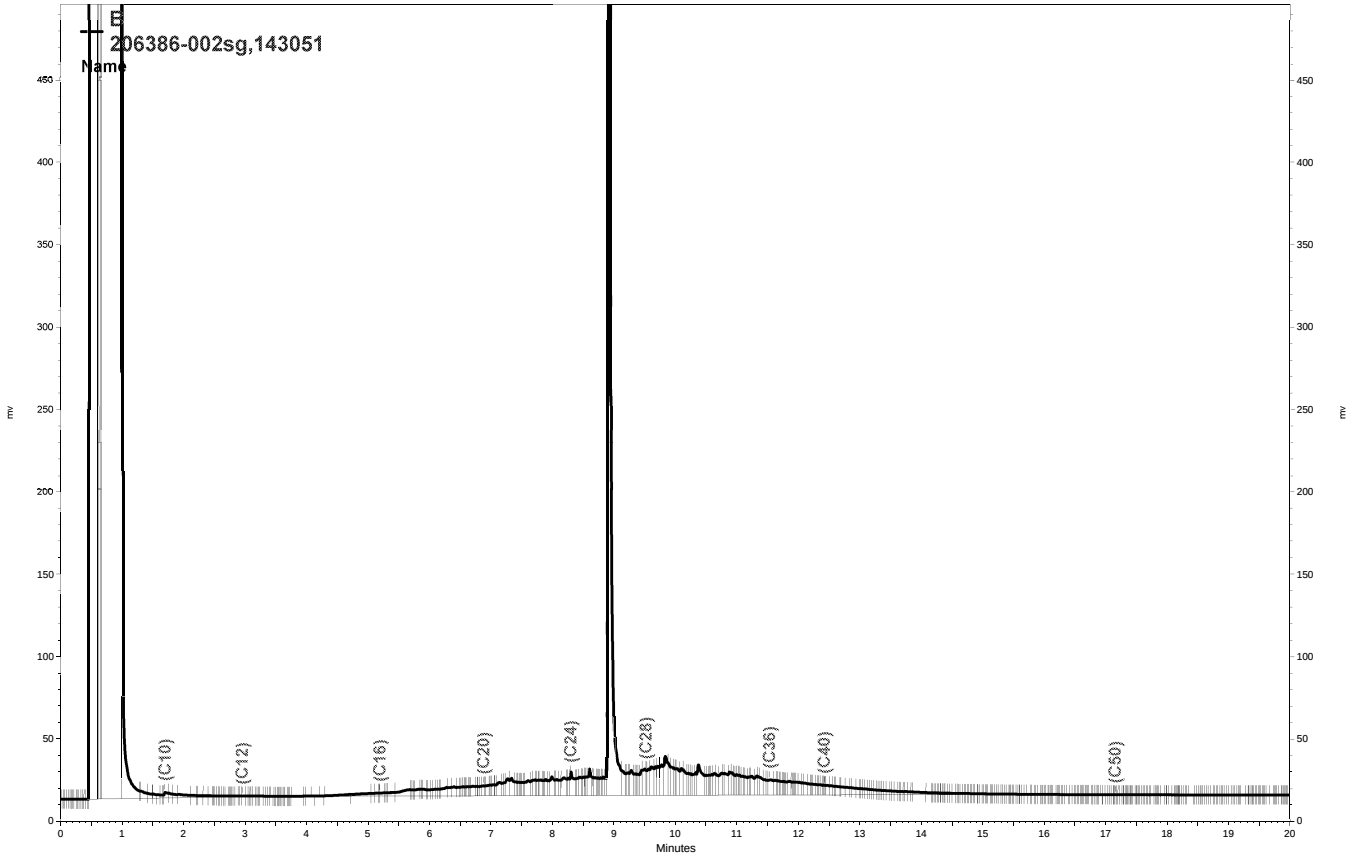
Surrogate	%REC	Limits
Hexacosane	102	46-130

Type: MSD Cleanup Method: EPA 3630C
Lab ID: QC462659

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.07	299.0	58 NM	38-140	27	49

Surrogate	%REC	Limits
Hexacosane	118	46-130

NM= Not Meaningful: Sample concentration > 4X spike concentration
RPD= Relative Percent Difference



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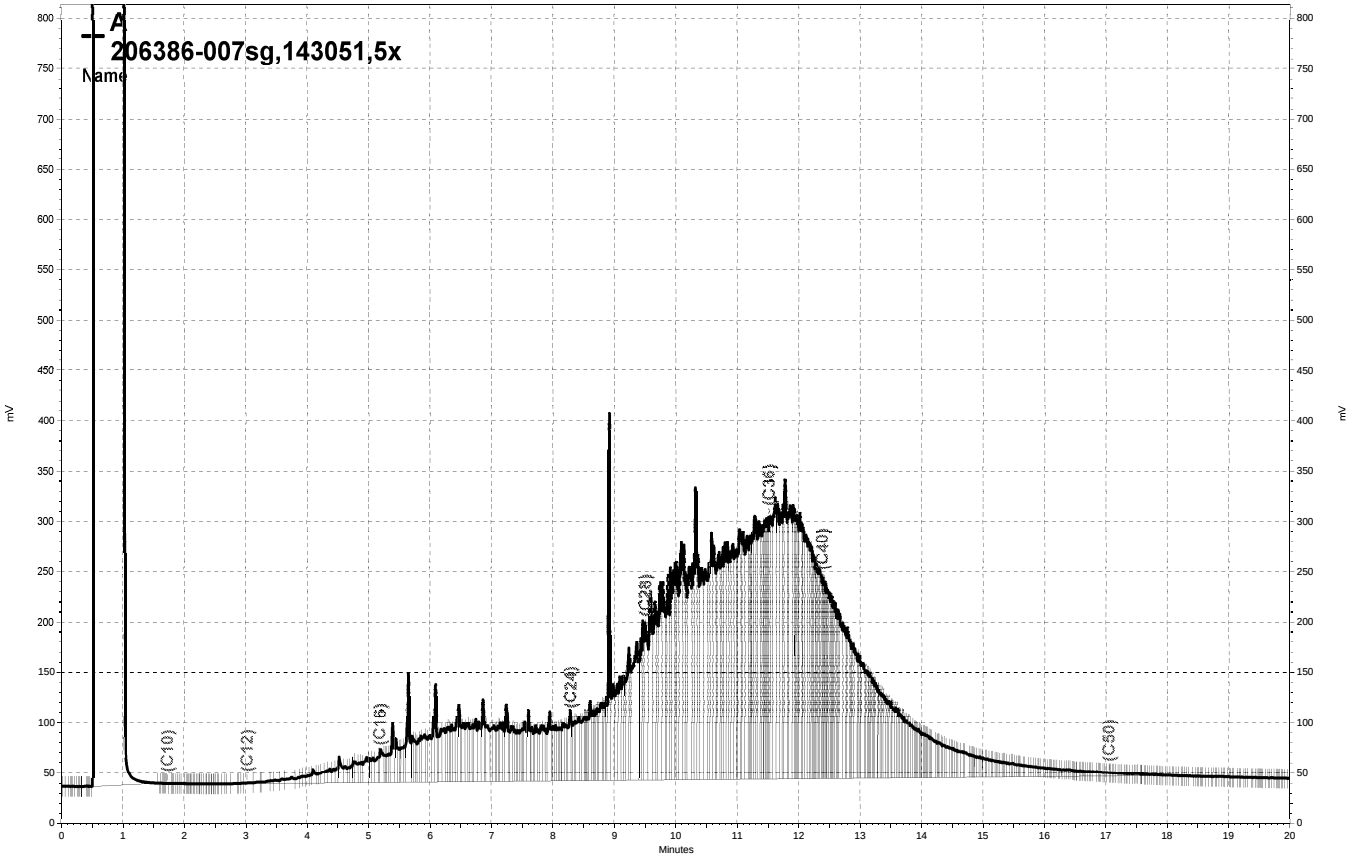

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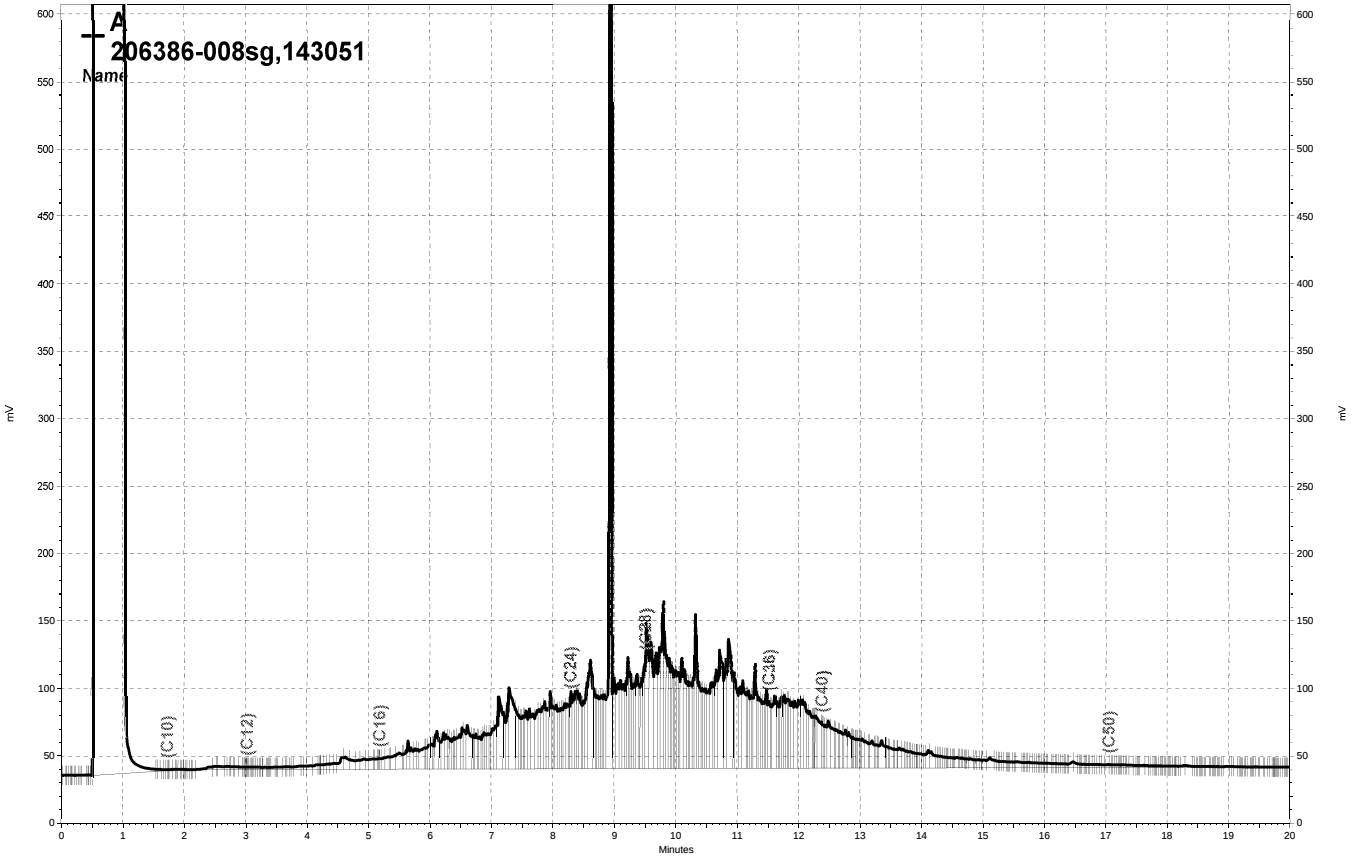

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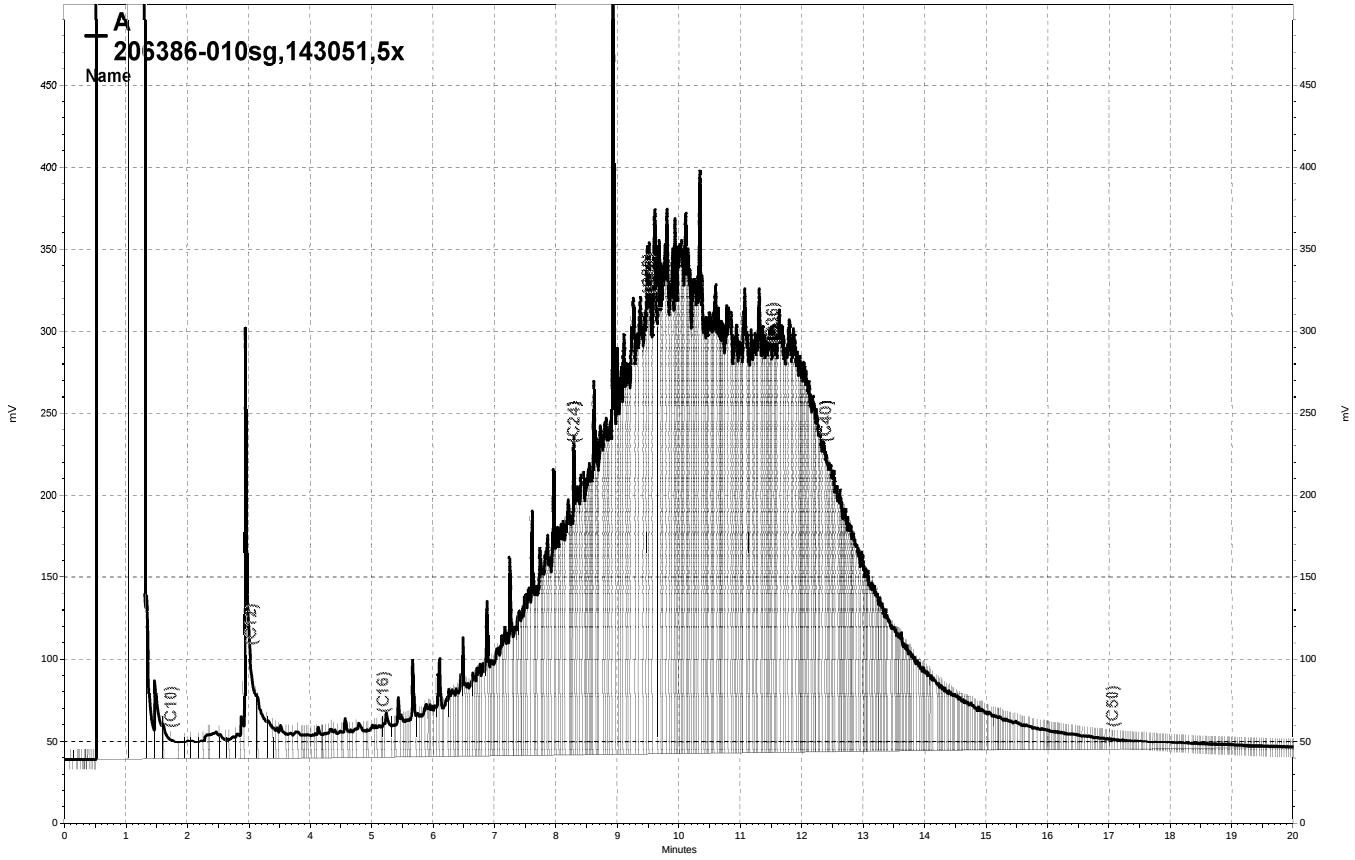

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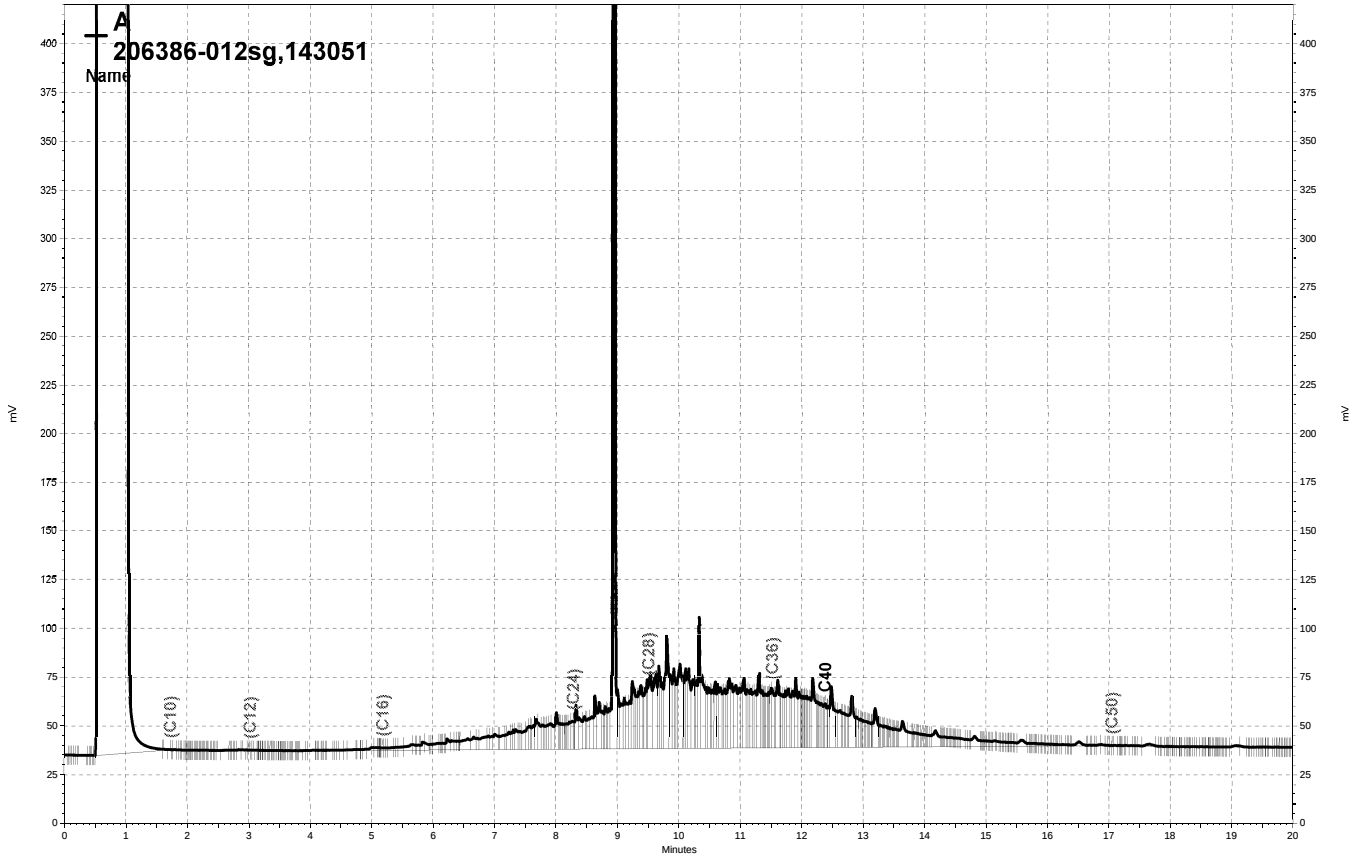

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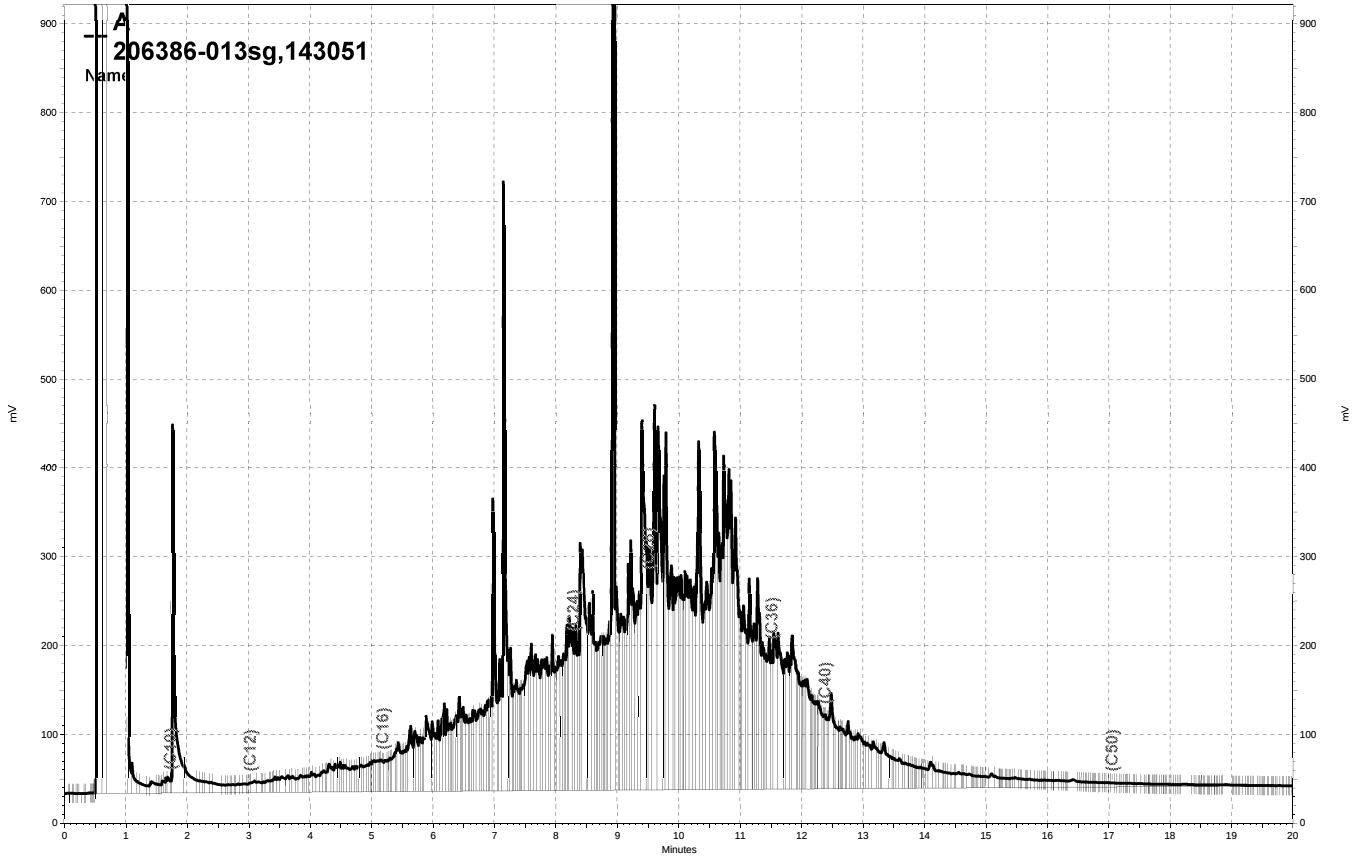

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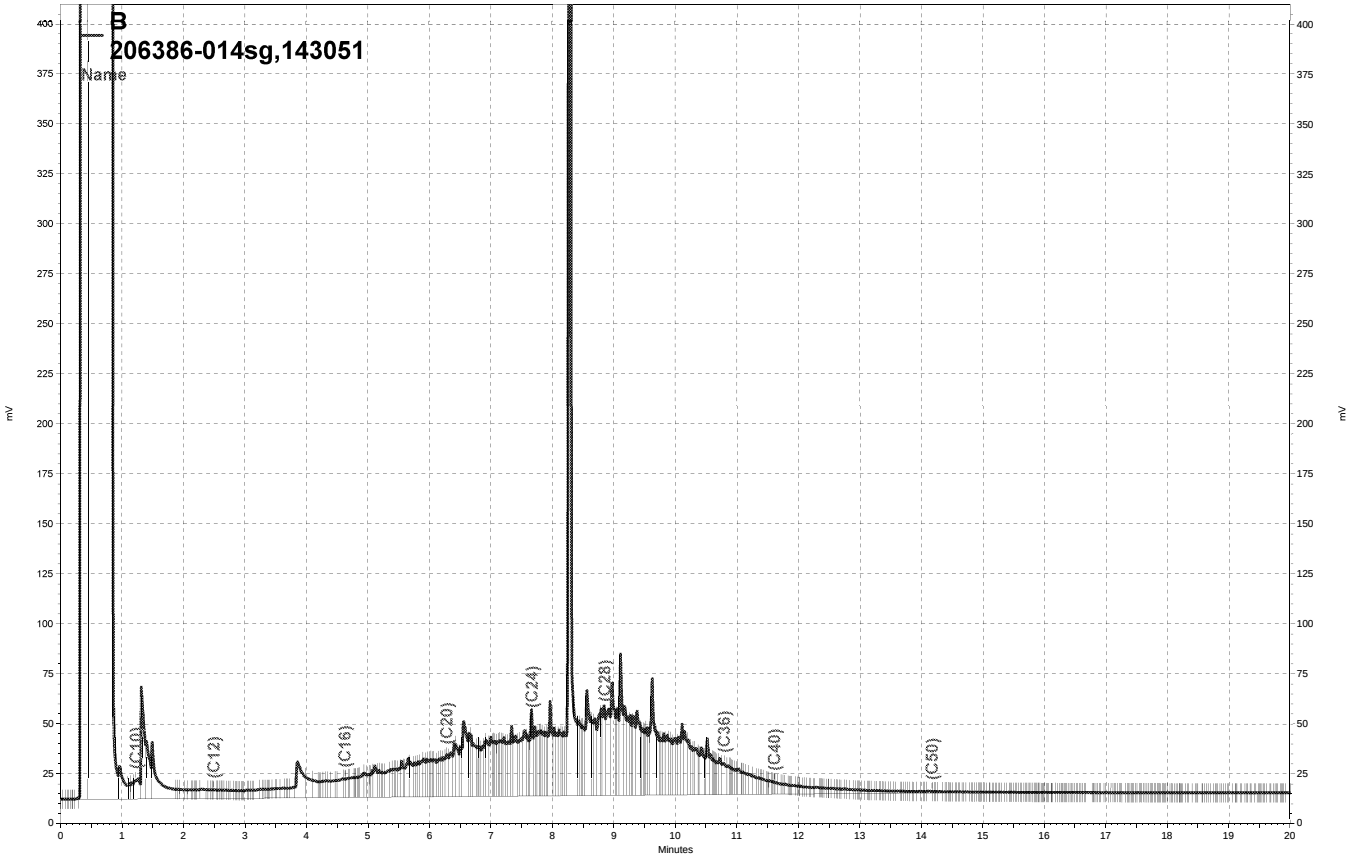

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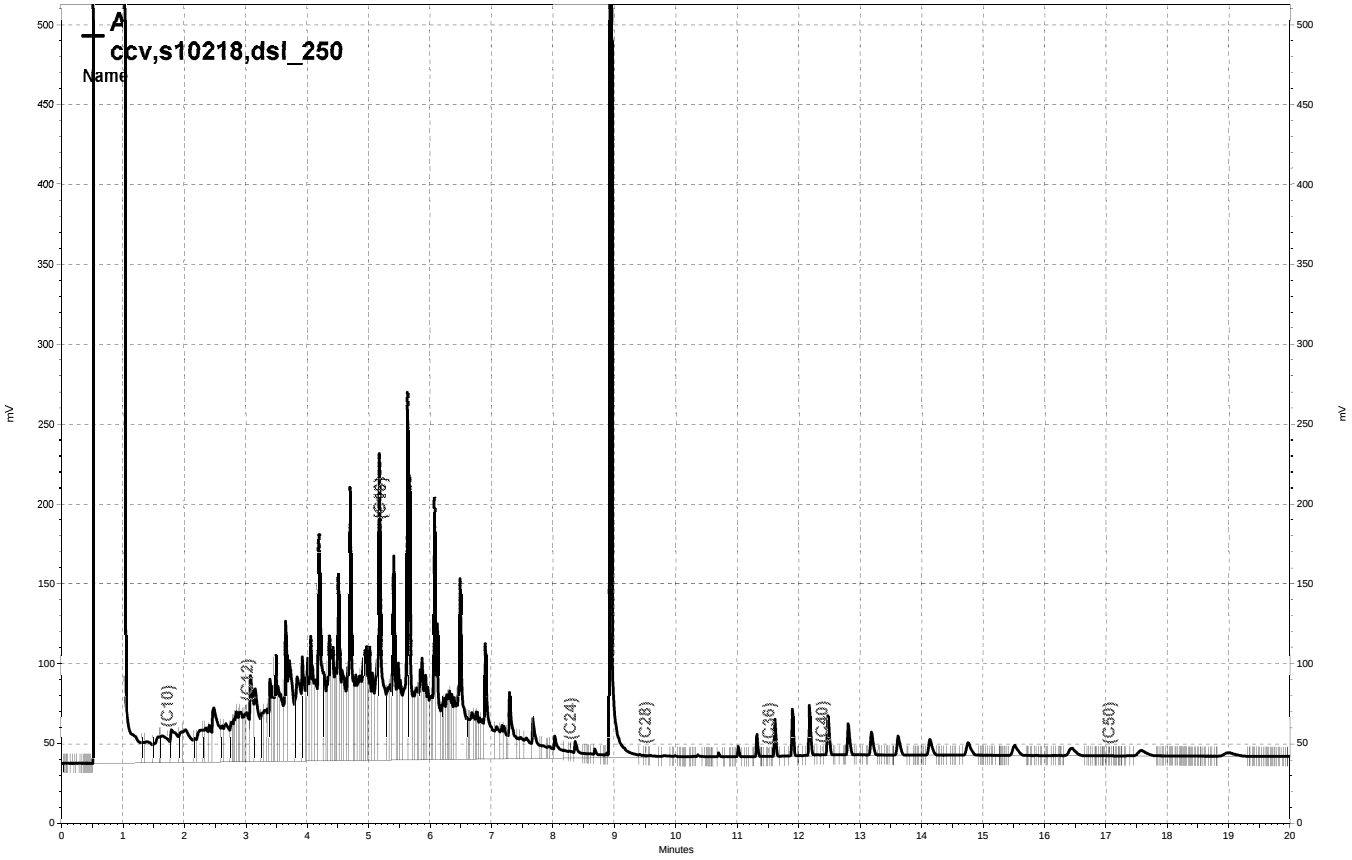

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Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-12	Batch#:	143120
Lab ID:	206386-003	Sampled:	09/25/08
Matrix:	Water	Received:	09/25/08
Units:	ug/L	Analyzed:	10/01/08
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Ethanol	ND	1,000
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-125
1,2-Dichloroethane-d4	104	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	107	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-11	Batch#:	143122
Lab ID:	206386-006	Sampled:	09/25/08
Matrix:	Water	Received:	09/25/08
Units:	ug/L	Analyzed:	10/01/08
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Ethanol	ND	1,000
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	106	80-125
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	106	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-13	Batch#:	143125
Lab ID:	206386-009	Sampled:	09/25/08
Matrix:	Water	Received:	09/25/08
Units:	ug/L	Analyzed:	10/01/08
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Ethanol	ND	1,000
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-125
1,2-Dichloroethane-d4	108	80-137
Toluene-d8	96	80-120
Bromofluorobenzene	102	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-14	Batch#:	143125
Lab ID:	206386-011	Sampled:	09/25/08
Matrix:	Water	Received:	09/25/08
Units:	ug/L	Analyzed:	10/01/08
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	3.3	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Ethanol	ND	1,000
Toluene	1.8	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	1.1	0.5
m,p-Xylenes	2.8	0.5
o-Xylene	1.7	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-125
1,2-Dichloroethane-d4	107	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	106	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-15	Batch#:	143125
Lab ID:	206386-015	Sampled:	09/25/08
Matrix:	Water	Received:	09/25/08
Units:	ug/L	Analyzed:	10/01/08
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	3.1	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Ethanol	ND	1,000
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-125
1,2-Dichloroethane-d4	111	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	102	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	143120
Units:	ug/L	Analyzed:	10/01/08
Diln Fac:	1.000		

Type: BS Lab ID: QC462987

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	150.0	162.8	109	59-152
MTBE	30.00	32.97	110	70-125
Isopropyl Ether (DIPE)	30.00	29.33	98	67-126
Ethyl tert-Butyl Ether (ETBE)	30.00	33.10	110	69-127
1,2-Dichloroethane	30.00	34.47	115	78-132
Benzene	30.00	26.24	87	80-120
Methyl tert-Amyl Ether (TAME)	30.00	31.08	104	80-122
Toluene	30.00	28.44	95	80-120
1,2-Dibromoethane	30.00	29.40	98	80-120
Ethylbenzene	30.00	33.14	110	80-122
m,p-Xylenes	60.00	63.49	106	80-126
o-Xylene	30.00	30.96	103	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-125
1,2-Dichloroethane-d4	99	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	102	80-122

Type: BSD Lab ID: QC462988

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	150.0	169.7	113	59-152	4	20
MTBE	30.00	34.68	116	70-125	5	20
Isopropyl Ether (DIPE)	30.00	32.26	108	67-126	10	20
Ethyl tert-Butyl Ether (ETBE)	30.00	35.05	117	69-127	6	20
1,2-Dichloroethane	30.00	35.60	119	78-132	3	20
Benzene	30.00	29.09	97	80-120	10	20
Methyl tert-Amyl Ether (TAME)	30.00	30.74	102	80-122	1	20
Toluene	30.00	29.07	97	80-120	2	20
1,2-Dibromoethane	30.00	31.03	103	80-120	5	20
Ethylbenzene	30.00	32.04	107	80-122	3	20
m,p-Xylenes	60.00	66.17	110	80-126	4	20
o-Xylene	30.00	31.41	105	80-120	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-125
1,2-Dichloroethane-d4	100	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	96	80-122

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC462989	Batch#:	143120
Matrix:	Water	Analyzed:	10/01/08
Units:	ug/L		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Ethanol	ND	1,000
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	92	80-125
1,2-Dichloroethane-d4	98	80-137
Toluene-d8	107	80-120
Bromofluorobenzene	115	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC462994	Batch#:	143122
Matrix:	Water	Analyzed:	10/01/08
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	100.0	89.38	89	59-152
MTBE	20.00	20.61	103	70-125
Isopropyl Ether (DIPE)	20.00	17.48	87	67-126
Ethyl tert-Butyl Ether (ETBE)	20.00	18.91	95	69-127
1,2-Dichloroethane	20.00	22.53	113	78-132
Benzene	20.00	21.09	105	80-120
Methyl tert-Amyl Ether (TAME)	20.00	20.48	102	80-122
Toluene	20.00	21.27	106	80-120
1,2-Dibromoethane	20.00	21.58	108	80-120
Ethylbenzene	20.00	20.28	101	80-122
m,p-Xylenes	40.00	39.19	98	80-126
o-Xylene	20.00	19.20	96	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-125
1,2-Dichloroethane-d4	85	80-137
Toluene-d8	97	80-120
Bromofluorobenzene	94	80-122

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC462996	Batch#:	143122
Matrix:	Water	Analyzed:	10/01/08
Units:	ug/L		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Ethanol	ND	1,000
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-125
1,2-Dichloroethane-d4	89	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	99	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	143125
Units:	ug/L	Analyzed:	10/01/08
Diln Fac:	1.000		

Type: BS Lab ID: QC463005

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	100.0	89.24	89	59-152
MTBE	20.00	16.78	84	70-125
Isopropyl Ether (DIPE)	20.00	18.92	95	67-126
Ethyl tert-Butyl Ether (ETBE)	20.00	20.07	100	69-127
1,2-Dichloroethane	20.00	20.52	103	78-132
Benzene	20.00	20.74	104	80-120
Methyl tert-Amyl Ether (TAME)	20.00	21.26	106	80-122
Toluene	20.00	20.02	100	80-120
1,2-Dibromoethane	20.00	19.71	99	80-120
Ethylbenzene	20.00	21.33	107	80-122
m,p-Xylenes	40.00	42.48	106	80-126
o-Xylene	20.00	21.01	105	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-125
1,2-Dichloroethane-d4	106	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	99	80-122

Type: BSD Lab ID: QC463006

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	100.0	89.50	90	59-152	0	20
MTBE	20.00	16.37	82	70-125	2	20
Isopropyl Ether (DIPE)	20.00	18.14	91	67-126	4	20
Ethyl tert-Butyl Ether (ETBE)	20.00	20.50	102	69-127	2	20
1,2-Dichloroethane	20.00	19.97	100	78-132	3	20
Benzene	20.00	19.58	98	80-120	6	20
Methyl tert-Amyl Ether (TAME)	20.00	20.73	104	80-122	3	20
Toluene	20.00	20.04	100	80-120	0	20
1,2-Dibromoethane	20.00	19.48	97	80-120	1	20
Ethylbenzene	20.00	21.13	106	80-122	1	20
m,p-Xylenes	40.00	43.23	108	80-126	2	20
o-Xylene	20.00	19.79	99	80-120	6	20

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-125
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	98	80-122

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC463007	Batch#:	143125
Matrix:	Water	Analyzed:	10/01/08
Units:	ug/L		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Ethanol	ND	1,000
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-125
1,2-Dichloroethane-d4	105	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	99	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	143125
MSS Lab ID:	206379-015	Sampled:	09/24/08
Matrix:	Water	Received:	09/25/08
Units:	ug/L	Analyzed:	10/02/08
Diln Fac:	1.000		

Type: MS Lab ID: QC463107

Analyte	MSS Result	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	<2.015	125.0	97.08	78	65-150
MTBE	<0.1543	25.00	19.14	77	74-124
Isopropyl Ether (DIPE)	<0.1648	25.00	22.84	91	73-127
Ethyl tert-Butyl Ether (ETBE)	<0.1427	25.00	24.55	98	74-125
1,2-Dichloroethane	<0.1266	25.00	24.71	99	80-133
Benzene	<0.1121	25.00	25.92	104	80-121
Methyl tert-Amyl Ether (TAME)	<0.1000	25.00	26.94	108	80-120
Toluene	<0.1078	25.00	25.84	103	80-120
1,2-Dibromoethane	<0.1097	25.00	23.76	95	80-120
Ethylbenzene	<0.1000	25.00	28.38	114	80-120
m,p-Xylenes	<0.1257	50.00	57.85	116	80-121
o-Xylene	<0.1000	25.00	26.56	106	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-125
1,2-Dichloroethane-d4	110	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	104	80-122

Type: MSD Lab ID: QC463108

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	111.7	89	65-150	14	20
MTBE	25.00	20.50	82	74-124	7	20
Isopropyl Ether (DIPE)	25.00	23.03	92	73-127	1	20
Ethyl tert-Butyl Ether (ETBE)	25.00	24.82	99	74-125	1	20
1,2-Dichloroethane	25.00	25.21	101	80-133	2	20
Benzene	25.00	25.39	102	80-121	2	20
Methyl tert-Amyl Ether (TAME)	25.00	25.91	104	80-120	4	20
Toluene	25.00	25.68	103	80-120	1	20
1,2-Dibromoethane	25.00	23.85	95	80-120	0	20
Ethylbenzene	25.00	26.50	106	80-120	7	20
m,p-Xylenes	50.00	54.01	108	80-121	7	20
o-Xylene	25.00	26.41	106	80-120	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-125
1,2-Dichloroethane-d4	108	80-137
Toluene-d8	97	80-120
Bromofluorobenzene	100	80-122

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Dil'n Fac:	3.333
MSS Lab ID:	206318-005	Batch#:	143122
Matrix:	Water	Sampled:	09/24/08
Units:	ug/L	Received:	09/25/08

Type: MS Analyzed: 10/01/08
Lab ID: QC463109

Analyte	MSS Result	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	13.15	416.7	455.6	106	65-150
MTBE	<0.2000	83.33	98.74	118	74-124
Isopropyl Ether (DIPE)	<0.2000	83.33	90.87	109	73-127
Ethyl tert-Butyl Ether (ETBE)	<0.2000	83.33	94.91	114	74-125
1,2-Dichloroethane	<0.2000	83.33	123.0	148 *	80-133
Benzene	<0.2000	83.33	99.66	120	80-121
Methyl tert-Amyl Ether (TAME)	<0.2000	83.33	93.27	112	80-120
Toluene	<0.2000	83.33	98.55	118	80-120
1,2-Dibromoethane	<0.2000	83.33	96.84	116	80-120
Ethylbenzene	<0.2000	83.33	91.87	110	80-120
m,p-Xylenes	<0.2088	166.7	175.2	105	80-121
o-Xylene	<0.2000	83.33	85.17	102	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	109	80-125
1,2-Dichloroethane-d4	107	80-137
Toluene-d8	105	80-120
Bromofluorobenzene	94	80-122

Type: MSD Analyzed: 10/02/08
Lab ID: QC463110

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	416.7	415.4	97	65-150	9	20
MTBE	83.33	94.20	113	74-124	5	20
Isopropyl Ether (DIPE)	83.33	86.05	103	73-127	5	20
Ethyl tert-Butyl Ether (ETBE)	83.33	90.22	108	74-125	5	20
1,2-Dichloroethane	83.33	113.7	136 *	80-133	8	20
Benzene	83.33	95.31	114	80-121	4	20
Methyl tert-Amyl Ether (TAME)	83.33	89.66	108	80-120	4	20
Toluene	83.33	94.46	113	80-120	4	20
1,2-Dibromoethane	83.33	93.57	112	80-120	3	20
Ethylbenzene	83.33	88.89	107	80-120	3	20
m,p-Xylenes	166.7	169.0	101	80-121	4	20
o-Xylene	83.33	83.78	101	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-125
1,2-Dichloroethane-d4	100	80-137
Toluene-d8	102	80-120
Bromofluorobenzene	96	80-122

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-12-7	Diln Fac:	0.9940
Lab ID:	206386-001	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	99
MTBE	ND	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Ethanol	ND	990
Toluene	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	86	75-129
1,2-Dichloroethane-d4	100	74-133
Toluene-d8	107	80-120
Bromofluorobenzene	91	79-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-12-10.5	Diln Fac:	0.9560
Lab ID:	206386-002	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	96
MTBE	ND	4.8
Isopropyl Ether (DIPE)	ND	4.8
Ethyl tert-Butyl Ether (ETBE)	ND	4.8
1,2-Dichloroethane	ND	4.8
Benzene	ND	4.8
Methyl tert-Amyl Ether (TAME)	ND	4.8
Ethanol	ND	960
Toluene	ND	4.8
1,2-Dibromoethane	ND	4.8
Ethylbenzene	ND	4.8
m,p-Xylenes	ND	4.8
o-Xylene	ND	4.8

Surrogate	%REC	Limits
Dibromofluoromethane	87	75-129
1,2-Dichloroethane-d4	100	74-133
Toluene-d8	109	80-120
Bromofluorobenzene	90	79-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-11-7	Diln Fac:	0.9276
Lab ID:	206386-004	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	93
MTBE	ND	4.6
Isopropyl Ether (DIPE)	ND	4.6
Ethyl tert-Butyl Ether (ETBE)	ND	4.6
1,2-Dichloroethane	ND	4.6
Benzene	ND	4.6
Methyl tert-Amyl Ether (TAME)	ND	4.6
Ethanol	ND	930
Toluene	ND	4.6
1,2-Dibromoethane	ND	4.6
Ethylbenzene	ND	4.6
m,p-Xylenes	ND	4.6
o-Xylene	ND	4.6

Surrogate	%REC	Limits
Dibromofluoromethane	88	75-129
1,2-Dichloroethane-d4	102	74-133
Toluene-d8	107	80-120
Bromofluorobenzene	91	79-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-11-10.5	Diln Fac:	0.9363
Lab ID:	206386-005	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	94
MTBE	ND	4.7
Isopropyl Ether (DIPE)	ND	4.7
Ethyl tert-Butyl Ether (ETBE)	ND	4.7
1,2-Dichloroethane	ND	4.7
Benzene	ND	4.7
Methyl tert-Amyl Ether (TAME)	ND	4.7
Ethanol	ND	940
Toluene	ND	4.7
1,2-Dibromoethane	ND	4.7
Ethylbenzene	ND	4.7
m,p-Xylenes	ND	4.7
o-Xylene	ND	4.7

Surrogate	%REC	Limits
Dibromofluoromethane	86	75-129
1,2-Dichloroethane-d4	98	74-133
Toluene-d8	107	80-120
Bromofluorobenzene	90	79-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-13-7	Diln Fac:	0.9960
Lab ID:	206386-007	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	100
MTBE	ND	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Ethanol	ND	1,000
Toluene	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	87	75-129
1,2-Dichloroethane-d4	101	74-133
Toluene-d8	108	80-120
Bromofluorobenzene	94	79-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-13-11	Diln Fac:	1.000
Lab ID:	206386-008	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	100
MTBE	ND	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Ethanol	ND	1,000
Toluene	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	88	75-129
1,2-Dichloroethane-d4	100	74-133
Toluene-d8	109	80-120
Bromofluorobenzene	92	79-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-14-7	Diln Fac:	0.9766
Lab ID:	206386-010	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	98
MTBE	ND	4.9
Isopropyl Ether (DIPE)	ND	4.9
Ethyl tert-Butyl Ether (ETBE)	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Methyl tert-Amyl Ether (TAME)	ND	4.9
Ethanol	ND	980
Toluene	ND	4.9
1,2-Dibromoethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	42 *	75-129
1,2-Dichloroethane-d4	100	74-133
Toluene-d8	107	80-120
Bromofluorobenzene	93	79-127

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-15-7.5	Diln Fac:	0.9901
Lab ID:	206386-012	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	99
MTBE	ND	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Ethanol	ND	990
Toluene	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	88	75-129
1,2-Dichloroethane-d4	98	74-133
Toluene-d8	107	80-120
Bromofluorobenzene	93	79-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-15-11	Diln Fac:	0.9804
Lab ID:	206386-013	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	98
MTBE	ND	4.9
Isopropyl Ether (DIPE)	ND	4.9
Ethyl tert-Butyl Ether (ETBE)	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Methyl tert-Amyl Ether (TAME)	ND	4.9
Ethanol	ND	980
Toluene	ND	4.9
1,2-Dibromoethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	87	75-129
1,2-Dichloroethane-d4	100	74-133
Toluene-d8	105	80-120
Bromofluorobenzene	91	79-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-15-15	Diln Fac:	1.000
Lab ID:	206386-014	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	100
MTBE	ND	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Ethanol	ND	1,000
Toluene	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	87	75-129
1,2-Dichloroethane-d4	99	74-133
Toluene-d8	107	80-120
Bromofluorobenzene	92	79-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC462522	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143025
Units:	ug/Kg	Analyzed:	09/29/08

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	100
MTBE	ND	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Ethanol	ND	1,000
Toluene	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	87	75-129
1,2-Dichloroethane-d4	95	74-133
Toluene-d8	108	80-120
Bromofluorobenzene	91	79-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Type:	LCS	Basis:	as received
Lab ID:	QC462523	Diln Fac:	1.000
Matrix:	Soil	Batch#:	143025
Units:	ug/Kg	Analyzed:	09/29/08

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	119.9	96	58-141
MTBE	25.00	24.51	98	67-127
Isopropyl Ether (DIPE)	25.00	23.44	94	68-126
Ethyl tert-Butyl Ether (ETBE)	25.00	24.88	100	66-128
1,2-Dichloroethane	25.00	24.67	99	72-127
Benzene	25.00	28.50	114	80-123
Methyl tert-Amyl Ether (TAME)	25.00	27.22	109	73-130
Toluene	25.00	29.22	117	80-124
1,2-Dibromoethane	25.00	28.07	112	80-122
Ethylbenzene	25.00	26.17	105	80-127
m,p-Xylenes	50.00	52.87	106	80-125
o-Xylene	25.00	26.14	105	80-122

Surrogate	%REC	Limits
Dibromofluoromethane	91	75-129
1,2-Dichloroethane-d4	87	74-133
Toluene-d8	105	80-120
Bromofluorobenzene	91	79-127

Curtis & Tompkins, Ltd.

Batch QC Report

BTXE & Oxygenates

Lab #:	206386	Location:	801 Maritime
Client:	R&M Environmental	Prep:	EPA 5030B
Project#:	4009	Analysis:	EPA 8260B
Field ID:	RM-12-7	Dil'n Fac:	0.9940
MSS Lab ID:	206386-001	Batch#:	143025
Matrix:	Soil	Sampled:	09/25/08
Units:	ug/Kg	Received:	09/25/08
Basis:	as received	Analyzed:	09/30/08

Type: MS Lab ID: QC462669

Analyte	MSS Result	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	<19.88	248.5	279.0	112	41-130
MTBE	<0.9940	49.70	45.70	92	51-121
Isopropyl Ether (DIPE)	<0.9940	49.70	42.37	85	48-120
Ethyl tert-Butyl Ether (ETBE)	<0.9940	49.70	45.46	91	49-122
1,2-Dichloroethane	<0.9940	49.70	45.95	92	50-120
Benzene	<0.9940	49.70	50.98	103	54-120
Methyl tert-Amyl Ether (TAME)	<0.9940	49.70	47.46	95	52-124
Toluene	<0.9940	49.70	52.62	106	50-120
1,2-Dibromoethane	<0.9940	49.70	52.30	105	50-120
Ethylbenzene	<0.9940	49.70	46.28	93	46-120
m,p-Xylenes	<0.9940	99.40	92.87	93	44-120
o-Xylene	<0.9940	49.70	46.88	94	45-120

Surrogate	%REC	Limits
Dibromofluoromethane	91	75-129
1,2-Dichloroethane-d4	87	74-133
Toluene-d8	103	80-120
Bromofluorobenzene	90	79-127

Type: MSD Lab ID: QC462670

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	248.5	282.4	114	41-130	1	37
MTBE	49.70	48.29	97	51-121	6	29
Isopropyl Ether (DIPE)	49.70	44.77	90	48-120	6	29
Ethyl tert-Butyl Ether (ETBE)	49.70	47.87	96	49-122	5	29
1,2-Dichloroethane	49.70	47.68	96	50-120	4	25
Benzene	49.70	52.71	106	54-120	3	25
Methyl tert-Amyl Ether (TAME)	49.70	50.81	102	52-124	7	27
Toluene	49.70	54.73	110	50-120	4	28
1,2-Dibromoethane	49.70	53.99	109	50-120	3	28
Ethylbenzene	49.70	47.84	96	46-120	3	29
m,p-Xylenes	99.40	97.20	98	44-120	5	30
o-Xylene	49.70	48.69	98	45-120	4	30

Surrogate	%REC	Limits
Dibromofluoromethane	90	75-129
1,2-Dichloroethane-d4	86	74-133
Toluene-d8	103	80-120
Bromofluorobenzene	91	79-127

RPD= Relative Percent Difference

APPENDIX C

DRILLING PERMIT DOCUMENTATION

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 09/16/2008 By jamesy

Permit Numbers: W2008-0672
Permits Valid from 09/25/2008 to 09/25/2008

Application Id: 1221596272496
City of Project Site: Oakland
Site Location: 801 Maritime Street,
Oakland, CA
Project Start Date: 09/25/2008
Completion Date: 09/25/2008
Requested Inspection: 09/25/2008
Scheduled Inspection: 09/25/2008 at 11:30 AM (Contact your inspector, Ron Smalley at (510) 670-5407, to confirm.)

Applicant: R&M Environmental - Rafael Carranza
7994 Capwell Drive, Oakland, CA 94621
Phone: 510-553-2144
Property Owner: Port of Oakland Port of Oakland
530 Water Street, Oakland, CA 94607
Phone: 510-627-1373
Client: ** same as Property Owner **
Contact: Rafael Carranza
Phone: 510-553-2149
Cell: 510-364-4431

Total Due: $230.00
Receipt Number: WR2008-0329 **Total Amount Paid:** $230.00
Payer Name : Dr Masood Ghassemi Paid By: VISA **PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 5 Boreholes
Driller: Gregg Drilling - Lic #: 485165 - Method: DP **Work Total: $230.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2008-0672	09/16/2008	12/24/2008	5	2.00 in.	15.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact Ron Smalley for an inspection time at 510-670-5407 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Permitte, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled,

properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

6. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

7. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

8. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

APPENDIX D

BORING LOGS

BORING LOG

R&M EIE, Inc. **Borehole No: RM-11** **Date: 9/25/08**

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): Brandon Moses
Project No: 4009	Coring Equipment: DP-12
Logged By: Jim Gribi, PG	Sampler (Type/Diameter): 2" dual-tube linners
Reviewed By:	Borehole Diameter:

Sample ID	Time of Sampling	Depth (ft-bgs)	PID (ppm)	Water Level (approx.)	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Backfill Material [2]
		-1			GP	0-6.5' Grey-brown sandy gravel, loose, some asphalt pieces, no odor, no staining	C
		-2					
		-3					
		-4					
		-5					
		-6					
RM-11-7	8:50	-7	0		SP	6.5-10.5' Tan-light brown sand, fine-medium sized, loose, wet @ 8', no odor, no staining	
RM-11 (water)	9:10	-8		8'			
		-9					
RM-11-10.5	8:55	-10	0				
		-11			SM	10.5-15' Olive grey silty sand, very fine-medium sized, wet, no odor, no staining	
		-12					
		-13					
		-14					
		-15	0			Stopped at 15 ft	

1. Referencing USCS Chart
2. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc. **Borehole No: RM-12** **Date: 9/25/08**

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): Brandon Moses
Project No: 4009	Coring Equipment: DP-12
Logged By: Jim Gribi, PG	Sampler (Type/Diameter): 2" dual-tube linners
Reviewed By:	Borehole Diameter:

Sample ID	Time of Sampling	Depth (ft-bgs)	PID (ppm)	Water Level (approx.)	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Backfill Material [2]
		-1			GP	0-6.5' brown-grey brown sandy gravel, loose, moist, some large clasts, some asphalt pieces, no odor	C
		-2					
		-3					
		-4					
		-5					
		-6					
RM-12-7	8:05	-7	0		SP	6.5-10.5' brown-grey brown sand, fine-medium sized, loose, wet @ ~8', no odor, no staining	
RM-12 (water)	8:25	-8		8'			
		-9					
RM-12-10.5	8:10	-10	0				
		-11			ML	10.5-11.5' dark grey sandy clay, soft, wet, no odor, no staining	
		-12			SP	11.5-15' grey sand, fine-medium sized, loose, wet, no odor, no staining	
		-13					
		-14					
		-15	0			Stopped at 15 ft	

1. Referencing USCS Chart
2. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc. **Borehole No: RM-13** **Date: 9/25/08**

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): Brandon Moses
Project No: 4009	Coring Equipment: DP-12
Logged By: Jim Gribi, PG	Sampler (Type/Diameter): 2" dual-tube linners
Reviewed By:	Borehole Diameter:

Sample ID	Time of Sampling	Depth (ft-bgs)	PID (ppm)	Water Level (approx.)	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Backfill Material [2]
		-1			GP	0-7.5' brown-grey brown sandy gravel, loose-firm, some concrete clasts, no odor, no staining	C
		-2					
		-3					
		-4					
		-5					
		-6					
RM-13-7	10:15	-7	0				
RM-13 (water)	11:00	-8		7.5'	SP	7.5-15' olive-grey sand, fine-medium sized, loose-firm, wet @ 7.5', no odor, no staining (NOTES: 9:35 - had to move boring location 9' south of original boring due to refusal @ 3.5'; 9:50 - had to move boring once again 6' east of original boring due to refusal @ 6.5')	
		-9					
		-10					
RM-13-11.5	10:20	-11	0				
		-12					
		-13					
		-14					
		-15	0			Stopped at 15 ft	

1. Referencing USCS Chart
2. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc. **Borehole No: RM-14** **Date: 9/25/08**

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): Brandon Moses
Project No: 4009	Coring Equipment: DP-12
Logged By: Jim Gribi, PG	Sampler (Type/Diameter): 2" dual-tube linners
Reviewed By:	Borehole Diameter:

Sample ID	Time of Sampling	Depth (ft-bgs)	PID (ppm)	Water Level (approx.)	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Backfill Material [2]
		-1			GW	0-6' asphalt and grey brown gravel, loose, some asphalt and concrete pieces, no odor, no staining	C
		-2					
		-3					
		-4					
		-5					
		-6					
RM-14-7	11:00	-7	0		concrete fill	6-8' light grey concrete rubble, dry, no odor, no staining	
RM-14 (water)	11:20	-8					
		-9			no recovery	8-12' no recovery	
		-10					
		-11					
		-12				Stopped at 12 ft	

1. Referencing USCS Chart
2. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

BORING LOG

R&M EIE, Inc. **Borehole No: RM-15** **Date: 9/25/08**

SITE INFORMATION	SUBCONTRACTOR INFORMATION
Name: Additional Site Investigation	Drilling Company: Gregg Drilling
Location: 801 Maritime Street, Oakland, CA	Driller(s): Brandon Moses
Project No: 4009	Coring Equipment: DP-12
Logged By: Jim Gribi, PG	Sampler (Type/Diameter): 2" dual-tube linners
Reviewed By:	Borehole Diameter:

Sample ID	Time of Sampling	Depth (ft-bgs)	PID (ppm)	Water Level (approx.)	UNIFIED SOIL CLASSIFICATION SYSTEM [1] Group Symbol	SOIL DESCRIPTION	Backfill Material [2]
		-1			GM	0-7.5' asphalt and light reddish brown gravel, sandy, silty, dry-moist, no odor, no staining	C
		-2					
		-3					
		-4					
		-5					
		-6					
RM-15-7.5	12:00	-7	0				
RM-15 (water)	12:35	-8		8'	SC	7.5-16' olive grey clayey sand, silty, very fine-fine sized, wet @ 8', loose, no odor, no staining	
		-9					
		-10					
RM-15-11	12:05	-11	0				
		-12					
		-13					
		-14					
RM-15-15	12:10	-15	0				
		-16				Stopped at 16 ft	

1. Referencing USCS Chart
2. Bentonite (B); Cement (C); Sand (S); Asphalt (A)

APPENDIX E

LETTER FROM ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY TO PORT OF OAKLAND (DECEMBER 20, 2006)

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

December 20, 2006

Mr. John Prall
Port of Oakland
530 Water St.
Oakland, CA 94604-2064

Dear Mr. Prall:

Subject: Fuel Leak Case RO0000019, Port of Oakland, 801 Maritime Street, Oakland, CA 94607

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the referenced site and your May 31, 2006 response letter to the County's March 24, 2006 technical request letter. We have determined that additional information is needed to progress this site to closure. We request that you address the following technical comments and submit the technical report requested below.

TECHNICAL COMMENTS

1. Installation of Monitoring Wells- Although one monitoring well was installed down-gradient of the former underground tanks, we believe that the lone well is insufficient to assess potential releases from the three former underground tanks. Therefore, we request that a minimum of two additional wells be installed to determine site-specific gradient and start quarterly monitoring.

2. The limits of soil contamination were unable to be determined during the tank removal. Soil boring contamination in B-2 and C-2 were reported as 3600 ppm and 1600 ppm TPHd, respectively. Because of the absence of any additional data, we request that borings be advanced to define the extent of petroleum contamination in these areas.

TECHNICAL REPORT REQUEST

Please submit the requested report according to the following schedule:

- January 30, 2007- Work plan for delineation of soil contamination and monitoring well installations.
- April 30, 2007- Monitoring well installation and sampling report

ELECTRONIC SUBMITTAL OF REPORTS

Effective **January 31, 2006**, the Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) required submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

Submission of reports to the Alameda County ftp site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the

SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground

storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

In order to facilitate electronic correspondence, we request that you provide up to date electronic mail addresses for all responsible and interested parties. Please provide current electronic mail addresses and notify us of future changes to electronic mail addresses by sending an electronic mail message to me at barney.chan@acgov.org.

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "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." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification.

Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

If you have any questions, please call me at (510) 567-6765.

Sincerely,

Barney M Chan

Barney M. Chan
Hazardous Materials Specialist

cc: files, D. Drogos

12_19_06 801 Maritime

APPENDIX F

LETTER FROM ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY TO PORT OF OAKLAND (JULY 28, 2008)

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

July 28, 2008

Port of Oakland
Mr. John Prall
530 Water Street, 4th floor
Oakland, CA 94607-3524

Subject: Fuel Leak Case No. RO000019 (Global ID # T0600101102), Port of Oakland, 801 Maritime Street, Oakland CA

Dear Mr. Prall:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site and the document entitled, "Response to Comments," received February 11, 2008. As stated previously in a correspondence from ACEH dated March 2006, the limits of soil contamination were unable to be determined after the UST removal. Residual contamination in soil boring B-2 and C-2 detected TPHd at concentrations up to 3,600 ppm and 1,600 ppm, at 9.5 feet bgs. Therefore, ACEH requests that additional soil samples be collected in the source area to define the vertical extent of contamination in the source area.

We request that you perform the proposed work, and send us the reports described below. Please provide 72-hour advance written notification to this office (e-mail preferred to steven.plunkett@acgov.org) prior to the start of field activities.

TECHNICAL COMMENTS

1. **Source Area Characterization**. Currently, the vertical extent of contamination in the source area is undefined. Residual contamination beneath the former USTs was detected at 9.5 feet bgs, which was the maximum depth of the excavation. The purpose of contaminant source characterization is to determine the nature and extent of petroleum impacted soils (residual phase), and hydrocarbons dissolved in groundwater (aqueous phase). We request that one soil boring be installed between B-2 and C-2 to a depth of 15 feet bgs and soil and samples must be collected at five foot intervals until the total depth of 15 feet.

2. **Soil and Groundwater Plume Definition**. ACEH agrees that supplemental soil and groundwater data downgradient of RM-5 will be useful to help define the downgradient extent of the dissolved phase contamination plume. We concur with the Port's recommendation to install four soil borings downgradient of RM-5. Report the results of your work in the Soil and Water Investigation Report requested below.

3. **Soil Sampling and Analysis**. ACEH requests soil samples be collected from all soil borings at changes in lithology, areas of obvious hydrocarbon contamination or when elevated PID readings occurs. If no changes in lithology, obvious contamination or elevated PID reading

occurs, soil samples shall be collected at 5 feet interval until the total depth of 15 feet bgs has been reached. All soil samples are to be submitted for the following laboratory analysis; TPHg, TPHd, BTEX and MtBE. Please present results from soil sampling in the Soil and Groundwater Investigation Report requested below.

4. **Groundwater Sampling and Analysis.** The water samples are to be analyzed for TPHg and TPHd by EPA Method 8015M or 8260, BTEX, EDB, EDC, MtBE, TAME, ETBE, DIPE, TBA and EtOH by EPA Method 8260. Please present the results from groundwater sampling in the Soil and Groundwater Investigation Report requested below.

5. **Hydrogeologic Cross Sections.** Please incorporate historical soil boring and monitoring well data including soil and groundwater analytical data, static water level and first water encountered, well screen interval, distinct geologic contacts and the location of former UST tank pit and appurtenance into a minimum of two cross sections that are parallel and perpendicular to groundwater flow. Please present the cross sections in the Soil and Groundwater Investigation Report requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Steve Plunkett), according to the following schedule:

- **September 28, 2008** – Soil and Groundwater Investigation Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "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." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please feel free to call me at (510) 383-1767.

Sincerely,

Steven Plunkett
Hazardous Materials Specialist

Donna Drogos, PE
Supervising Hazardous Materials Specialist

cc: Masood Ghassemi
R & M Environmental and Infrastructure Engineering, Inc.
7996 Capwell Drive
Oakland, Ca 94612-2015

Donna Drogos, ACEH, Steven Plunkett, ACEH, File

APPENDIX G

LETTER FROM PORT OF OAKLAND TO ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY (MAY 31, 2006)

PORT OF OAKLAND

May 31, 2006

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency,
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **UST Site, 801 Maritime Street**
Port of Oakland, Oakland, CA
Fuel Leak Case RO0000019

Dear Mr. Chan:

The Port of Oakland (Port) is in receipt of your March 27th letter regarding the former underground storage tank (UST) site, known as 801 Maritime Street ("Site"). We appreciate your effort in naming this site as a candidate for regulatory closure and the time extension for completing this letter report.

Before responding to the information requested by the County, we briefly recapitulate the site history. 801 Maritime Street was the site of a warehouse and a fueling dispenser. Three underground storage tanks that supplied the dispenser were installed circa 1959 and were designated by the Port as CF-06, CF-07, and CF-35. All three tanks were of single wall steel construction and each tank was strapped to a concrete slab (due to shallow groundwater conditions). CF-06 had a capacity of 10,000 gallons and was used to store diesel fuel. Tanks CF-07 and CF-35 had capacities of 20, 000 and 10,000 gallons respectively and both were also used to store diesel fuel although both tanks were configured for the storage of gasoline. The three tanks were removed from the ground on February 16, 1989 and no evidence of corrosion, punctures or leaks was noted.

During the tank removal, discolored soils and petroleum odors were noted. Groundwater accumulated in the excavation contained oil and exhibited sheen. Floating product was not present. The impacted groundwater was pumped out of the pit and hauled away for proper disposal. Soil excavation then continued until a final pit dimension of approximately 52 by 64 by 12 feet deep was achieved. The impacted soils were stockpiled near to the excavation (approximately 1,500 cubic yards) and bioremediated on site. All of the tank removal and bioremediation activities at the time were conducted under the lead of Alameda County Health Care Services Agency. Originally this site was assigned a site identification number STID #3780 and is now assigned a new identification as #RO0000019.

The information requested is presented below following the County's question noted in italics:

1. Please clarify the address and APN (Assessor Parcel Number) for this site. Please provide a copy of the Assessor map indicating both the parcel number and the address of this site as requested below.

The Site is identified as 801 Maritime Street; an address that no longer exists. Prior to 1989, the underground storage tanks at this site lay adjacent to a large warehouse used by a tenant for the temporary storage of bailed cotton. The warehouse and yard were separate from the nearby Berth 24 maritime shipping terminal, see Figure 1. Since 1989, the warehouse has been demolished, fences have been removed, and the local streets have been abandoned or reconfigured until the earlier land usage has been completely obliterated. Today, the 801 Maritime site is now part of an expanded Berth 24 container terminal and the only trace of the former land use is in reports and old aerial photographs. The current street address of the Berth 24 terminal is 909 Maritime Street.

The Assessors Parcel Number (APN) for the 801 Maritime Site: the Site does not have a unique APN. The 801 Maritime Site is part of a much larger tax assessor parcel that includes approximately 445 acres of land about evenly split between dry land and submerged land. The APN is 000-0320-001-00, see Figure 2.

2. It appears that only one monitoring well was required for this investigation. This was based upon the abundance of wells and information at the neighboring Berth 24 (Mobil/Ashland) site. Please provide a gradient rose diagram for this site, a site map showing well locations, and a summary of the groundwater data for this site as requested below. We are aware that the SFRWQCB is now the lead on this site.

In 1996, the Port installed a solitary monitoring well, MW-1, located downgradient of the former under ground storage tanks at the Site. This well is one of approximately 54 wells located in Berths 23 and 24 area; the 53 other wells are the groundwater monitoring network for the former Mobil Oil and Ashland Oil Bulk Fuel Facilities (i.e., tank farms). Both Facilities are petroleum release sites that have a large and combined dissolved phase plume located in the shallow water-bearing unit (the same unit MW-1 is constructed in). The attached Map (Figure 3) and Table (Table 5) contain the information requested.

The determination of ground water flow directions normally are not possible using a single well. In this situation, the numerous down gradient wells can be used in conjunction with MW-1 to determine the local flow direction at the 801 Maritime Site. The local hydraulic gradients, however, could not be determined because the past

groundwater monitoring activities at the tank farm and at 801 Maritime have been conducted at significantly different calendar dates. The attached Figure 4 depicts the groundwater flow directions for seven time periods. It is noted that the local flow direction is uniformly toward the west and that the 801 Maritime Site well was placed down gradient of the former USTs.

3. We understand that approximately 1,500 cy of spoils was generated during the tank removal activities. The soil was bio-remediated and approximately 400 cy reused as fill on this site. Was the remaining remediated soil reused elsewhere on Port properties? We understand that groundwater from the tank pit was removed by H&H Ship Services. How much groundwater was disposed?

Some additional information was found on the disposition of soil and groundwater generated during the removal of the underground storage tanks. Baseline Environmental Consulting prepared a brief report in March 1990 that indicated the petroleum impacted soils were subjected to on site bioremediation. After the remediation work was completed, the soil was transported by truck to the Oakland Airport, North Field to the site of former building, L-615. At this location, the soils were used as fill material at the ground surface.

The amount of water that was removed by H&H Ship Services from the UST excavation and hauled away for disposal is unknown. Both the Port and Baseline have searched their files for a record of the removal and/or disposal but nothing was found.

4. The limits of soil contamination were unable to be determined during the tank removal. Soil boring contamination in B-2 reported 3,600 ppm and C-2 reported 1,600 ppm TPH-d. Is there additional data, which defines the limit of TPH-d in these areas?

There are no additional data.

I declare under penalty of perjury, that the information and/or recommendations contained in this letter report and attachments are true and correct to the best of my knowledge. Please contact me at 627-1176 or the Port Project Manager, Mr. John Prall at 6271373 or at jprall@portoakland.com regarding any questions or clarifications.

Sincerely,

Roberta Reinstein
Manager, Port Environment and Safety Department

Cc: Jeffrey Jones
John Prall

Bcc: Michele Heffes
Deborah Ballati

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-13	4/16/2003	64	810	330 J	<0.5	<0.5	0.95	0.5	<2.5	<100
	7/31/2003	63	1400 j	800 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	190	110 Jj	<0.5	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/18/2004	<50	290	200 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/22/2004	<50	36 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21 uj
	8/17/2004	<50	<34	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004	<50	94	95 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004(Duplicate)	<50	110	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/23/2005	<50	31 J	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-14	4/15/2003	<50	91	<490	<0.5	<0.5	<0.5	<0.5	<2.5	17 J
	7/31/2003	<50	110 j	<480 uj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/21/2003	<50	340	300 J	<0.5	<0.5 uj	<0.5	<0.5	<0.081	<8 uj
	2/17/2004	<50	94 u	<76	<0.5	<0.5	<0.5	<0.5	<0.5	11 J
	4/20/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/16/2004	<50	170	<53	<0.5	<0.5	<0.5	<0.5	<0.5	24 J
	8/16/2004 (Duplicate)	58	190	62 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/17/2004	<50	220	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/21/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS

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(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-15	4/16/2003	100	490	170 J	<0.5	0.81	0.91	<0.5	<2.5	<100
	6/23/2003	79	390	160 Jj	2.4 j	<0.5	<0.5	0.53	<0.5	NA
	6/24/2003	72	370	170 Jj	1 j	<0.5	<0.5	<0.5	<0.5	NA
	8/1/2003	<50	440 j	400 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	<50	310	200 J	<0.5	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/18/2004	<50	200	250 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/20/2004	<50	140	95 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/18/2004	<50	37 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	21 J
	12/16/2004	<50	40 J	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/21/2005	82	1600	470 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
	3/21/2005 (Duplicate)	76	1600	460 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-16	4/15/2003	<50	88	87 J	<0.5	<0.5	<0.5	<0.5	<2.5	16 J
	4/15/2003 (Duplicate)	<50	64	<490	<0.5	<0.5	<0.5	<0.5	<2.5	9.8 J
	7/30/2003	<50	83 u	<480	<0.5	<0.5	<0.5	<0.5	0.62	NA
	11/24/2003	<50	83	<74	<0.5 uj	0.8 j	<0.5	<0.5	<0.081	<8
	2/18/2004	<50	140	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/22/2004	<50	41 J	<53	<0.5	<0.5	<0.5	0.81	<0.5	<21 uj
	8/18/2004	<50	45 J	<56	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/17/2004	<50	44 J	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/21/2005	<50	120	100 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

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(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-17	4/15/2003	<50	120	110 J	<0.5	<0.5	<0.5	<0.5	<2.5	9.1 J
	7/30/2003	<50	210	210 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/18/2004	<50	79	<75	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	4/20/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/16/2004	<50	95	93 J	<0.5	<0.5	<0.5	<0.5	<0.5	21 J
	12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/21/2005	<50	310	270 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-18	4/15/2003	<50	170	300 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	8/1/2003	<50	110 uj	140 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	<50	270	290 J	<0.5	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/17/2004	<50	52 u	<77	<0.5	<0.5	<0.5	<0.5	<0.5	8.8 Jj
	4/21/2004	<50	130	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	11 Ju
	8/18/2004	<50	44 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	47	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	140	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-24	4/15/2003	<50	88	82 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	7/30/2003	<50	100	89 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	71	<73 uj	<0.5	<0.5	<0.5	<0.5	<0.081	15 Jj
	2/17/2004	<50	30 Ju	<75	<0.5	<0.5	<0.5	<0.5	<0.5	39 J
	4/22/2004	<50	<33	<53	<0.5	<0.5	<0.5	0.72	<0.5	<21 uj
	8/17/2004	<50	42 J	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004	<50	110	96 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/21/2005	<50	43 J	<91	<0.5	<0.5	<0.5	<0.5	<0.5	15 J

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(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-25	4/15/2003	<500	590	320 J	<5	<5	<5	<5	<25	33 J
	7/31/2003	<50	550 j	340 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/17/2004	<50	110 u	<77	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	2/17/2004 (Duplicate)	<50	97 u	<74	<0.5	<0.5	<0.5	<0.5	<0.5	9.1 J
	4/21/2004	<50	1000	680	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/17/2004	<50	230	130 J	<0.5	<0.5	<0.5	<0.5	<0.5	22 J
	12/14/2004	<50	770	500	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/21/2005	<50	410	310 J	<0.5	<0.5	<0.5	<0.5	0.7	20 J
MW-26	4/15/2003	<50	100 u	96 J	<0.5	<0.5	<0.5	<0.5	<2.5	21 J
	7/31/2003	<50 uj	110 j	140 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	<50	140	130 J	<0.5	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/17/2004	<50	46 Ju	<77	<0.5	<0.5	<0.5	<0.5	<0.5	8.1 Jj
	4/20/2004	<50	49	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/18/2004	<50	63	<470	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	12/15/2004	<50	150	130 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/21/2005	<50	63	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

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CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-2B	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/24/2003	<50	110	200 J	<0.5 uj	1.5 j	<0.5	<0.5	<0.081	<48
	2/19/2004	<50	140	390 J	<0.5	0.78	<0.5	<0.5	<0.5	14 J
	4/20/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/17/2004	<50	38 J	84 J	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	12/16/2004	<50	97	280 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/23/2005	<50	180	490	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-34	6/25/2003	140	42 Juj	<470	13 j	<10 uj	<10	<10	<10	18 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	<50	76	95 J	3.2	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/20/2004	60	76 u	<74	<2.5	<2.5	<2.5	<2.5	<2.5	22 J
	4/20/2004	<50	84	59 J	3.3	<2.5	<2.5	<2.5	<2.5	<8
	8/16/2004	57	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	8/16/2004 (Duplicate)	<50	<33	<54	<0.5	<0.5	<0.5	<0.5	<0.5	21 J
	12/13/2004	55	61	<91	3.8	<0.5	<0.5	<0.5	<0.5	<21
	3/21/2005	80	92	<92	2.2 j	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

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CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-35	6/25/2003	87	57 u	<480	13 j	1.2 j	2.8	12	<0.5	<2000
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	100	240	170 J	3.3	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/19/2004	58	360	210 J	0.92	<0.5	<0.5	0.59	<0.5	<8
	4/20/2004	69	270	170 J	1.8	<0.5	<0.5	<0.5	<0.5	8.5 J
	8/16/2004	96	96	<53	3.6	<0.5	<0.5	<0.5	<0.5	<21
	12/13/2004	120	410	250 J	2.7	<0.5	<0.5	<0.5	<0.5	<21
	3/21/2005	300	320	220 J	2.7	<0.5	<0.5	<0.5	<0.5	<15
MW-36	6/25/2003	380	210 j	<480	26 j	2 j	4.8	18	<0.5	40 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	600	210	120 J	100	0.65	1.8	<0.5	<0.081	<8 uj
	2/19/2004	190	370	170 J	4.8	<0.5	<0.5	0.51	<0.5	<8
	4/20/2004	430	410	190 J	30	<0.5	1.2	<0.5	<0.5	<8
	8/16/2004	610	170	<53	23	<0.5	1.2	<0.5	<0.5	<21
	12/13/2004	480	640	320 J	15	<0.5	0.76	<0.5	<0.5	<21
	3/22/2005	620	370	210 J	30	<0.5	1.2	<0.5	<0.5	17 J

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-37A	6/23/2003	4000	680	330 J	1100	<25	<25	66	<25	41 J
	6/23/2003 (Duplicate)	4700	920	420 j	1100	<25	<25	68	<25	26 Jj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	6700	1300	970	1100 j	34	84	100	<0.81	16 Jj
	2/20/2004	3800	860 j	1400 j	81	3.6	5.2	14	<2.5	14 J
	4/20/2004	2400	2700 j	3500 j	470	9.5	12	20	<2.5	<8
	8/16/2004	5100	470	550	900	<50	<50	<50	<50	37000
	12/13/2004	130	650	1500	4.5	<0.5	<0.5	0.55	<0.5	<21
	3/24/2005	1800	430 j	1000 j	57	1.9	8.3	14	<0.5	<15
MW-37B	6/23/2003	89	140	210	28	0.75	<0.5	2.2	<0.5	240 j
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	<50	79	<74	<0.5 uj	<0.5	<0.5	<0.5	<0.081	46 Jj
	2/20/2004	<50	99	250 J	<0.5	<0.5	<0.5	<0.5	<0.5	26 J
	4/22/2004	<50	42 J	<53	<0.5	0.58	<0.5	0.57	<0.5	<130
	4/22/2004 (Duplicate)	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<130
	8/16/2004	<50	<33	<54	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<100
	12/13/2004	<50	100	150 J	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	3/24/2005	<50	450 j	1300 j	<0.5	<0.5	<0.5	<0.5	<0.5	<15
	3/24/2005 (Duplicate)	<50	330	900	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-37C	6/23/2003	<50	18 Ju	<470	5.5	<0.5	<0.5	<0.5	0.5	110 j
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	<50	19 J	<73	<0.5 uj	<0.5	<0.5	<0.5	<0.081	73 Jj
	2/19/2004	<50	46 Ju	<74	<0.5	<0.5	<0.5	0.5	<0.5	53 J
	4/22/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	190 J
	8/16/2004	<50	68	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/13/2004	<50	31 J	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	3/24/2005	<50	38 J	<96	<0.5	<0.5	<0.5	<0.5	<0.5	160 J
MW-38	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/19/2004	1300	1100	280 J	310	5.3	<5	5.2	<5	<8
	4/20/2004	1600	1100	290 J	560	<10	<10	<10	<10	<8
	8/17/2004	1200	790	170 J	440	<5	<5	<5	<5	<21
	8/17/2004 (Duplicate)	1200	830	180 J	370	<5	<5	<5	<5	<42
	12/14/2004	310	760	240 J	62	0.63	<0.5	<0.5	<0.5	<21
	3/22/2005	280	700	240 J	60 j	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-39	6/25/2003	5200	1100 j	290 J	2000 j	<50 uj	<50	<50	<8.1	25 J
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/20/2004	1500	850	310 J	330	13	<5	12	<5	<8
	8/17/2004	540	350	97 J	390	13	<5	15	<5	22 J
	12/14/2004	89	490	370 J	3.9	<0.5	<0.5	<0.5	<0.5	<21
	3/22/2005	870	750	350 J	130 j	1.2	1.7	2.4	<0.5	16 J
MW-40	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/20/2004	9900	5100 j	1800 Jj	3900	<50	140	68	<50	16 J
	8/17/2004	4700	2300	960	1900	11	47	24	<10	<21
	12/14/2004	1100	6000	4500 J	410	<5	6.8	5	<5	<21
	3/23/2005	3100	17000 j	11000 Jj	17	0.81	12	60	<0.5	28 J
MW-41	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/18/2004	3800	3800	2000	490	27	11	300	<5	22 Jj
	4/21/2004	5500	6100 j	3600 j	1900	25	<25	38	<25	15 Ju
	8/17/2004	2000	2000	740 J	280	15	<5	27	<5	<21
	12/14/2004	2500	2000	830 J	510	12	<5	28	<0.5	<21
	3/23/2005	230	520	420 J	14	1.2	<0.5	4.3 j	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-42A	6/25/2003	11000	830 j	230 J	2800 j	140 j	220	1200	<50	14 J
	6/25/2003 (Duplicate)	8200	2100 j	280 J	2200	100	170	890	<50	17 J
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2003	6800	2300	690 J	2000	90	92	580	5.5 J	<8 uj
	2/18/2004	11000	2800	830 J	2400	65	220	1300	<50	<8 uj
	4/22/2004	2700	1100	130 J	550	13	18	88	<10	<21 uj
	8/17/2004	2400	840	170 J	360	6.4	<5	52	<5	<21
	12/14/2004	2100	1000	410 J	520	<10	11	58	<2.5	<21
	3/22/2005	310	630	440 J	6.7	1	1.6	31	<0.5	56 J
MW-42B	6/25/2003	310	1500 j	170 J	50 j	4.3 j	6.6	32	<0.5	38 J
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2003	160	590	360 J	0.58 j	<0.5 uj	1.6	<0.5	<0.081	<8 uj
	11/21/2003(Duplicate)	160	670	420 J	0.51	<0.5	1.5	0.58	<0.081	<8 uj
	2/18/2004	55	270	140 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	2/18/2004 (Duplicate)	100	240	130 J	<0.5	<0.5	<0.5	<0.5	<0.5	11 Jj
	4/22/2004	110	110	<53	<0.5	<0.5	<0.5	0.66	<0.5	<21 uj
	8/17/2004	220	480	220 J	<1	<1	<1	<1	<1	<21
	12/14/2004	130	570	300 J	<0.5	<0.5	0.83	0.66	<0.5	<21
	3/22/2005	140	470	280 J	<0.5	<0.5	1	0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-42C	6/25/2003	88 u	50 u	<470	19 j	1.8 j	3.1	14	<0.5	420 J
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/21/2003	<50	140	<75	0.52 j	<0.5 uj	<0.5	<0.5	<0.081	<48 uj
	2/18/2004	<50	54	89 J	<0.5	<0.5	<0.5	<0.5	<0.5	31 Jj
	4/22/2004	<50	35 Jj	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<130
	4/22/2004 (Duplicate)	<50	140 j	310 J	<0.5	<0.5	<0.5	<0.5	<0.5	<130
	8/17/2004	<50	<33	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	12/14/2004	<50	60	96 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	69	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	<45
	3/22/2005 (Duplicate)	<50	48 J	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<45
MW-43	6/25/2003	920	1200 j	350 J	160 j	6.9 j	<2.5	13	<2.5	25 J
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2003	680	1000	470 J	70	4.6	<0.5	8.9	<0.081	<8 uj
	2/19/2004	1100	1400	700 J	280	13	<5	15	<5	<8
	4/21/2004	1900	1000	260 J	300	16	<5	23	<5	<8
	8/17/2004	1600	1300	300 J	48	17	1.4	38	<0.5	<21
	12/15/2004	2200	1400	440 J	140	15	2.1	29	<0.5	<210
	3/22/2005	<50	480	400 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
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(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-44	6/24/2003	<50	67 u	<490	3.6 j	<0.5	<0.5 uj	<0.5 uj	<0.5	30 Ju
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	<50	48	<73	<0.5 uj	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/19/2004	<50	58 u	<74	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/20/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	11 Ju
	8/16/2004	<50	<35	<56	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/13/2004	<50	59	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/13/2004(Duplicate)	<50	120	92 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/22/2005	<50	42 J	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-45	6/24/2003	4300	1100 j	220 J	2200 j	<50	<50 uj	<50 uj	<50	<100 uj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2003	3200	1900	360 J	1200	<25	34	82	<4	<8 uj
	2/19/2004	150	770	180 J	33	0.51	1.3	1.6	<0.5	<16
	4/22/2004	3100	1800	290 J	1600	<25	32	<25	<25	<21 uj
	8/17/2004	630	1000	300 J	220	<5	<5	<5	<5	<21
	12/16/2004	250	390	180 J	52	<0.5	0.8	0.65	<0.5	<210
	3/22/2005	3200	2600	500 J	1600 j	12 j	29	19	<0.5	22 J

TABLE 5

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CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-46A	6/24/2003	9900	1300 j	370 J	4100 j	57	270 j	340 j	<50	<100 u
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	17000	2200	930 J	6500	<50	310	330	<8.1	<8
	2/19/2004	20000	3000	1200 J	6300	<50	370	400	<50	14 J
	4/21/2004	4100	1700	350 J	1500	<50	<50	72	<50	<21
	8/17/2004	730	810	160 J	190	<5	8.3	9.1	<5	<21
	12/15/2004	3300	860	180 J	970	9.1	30	60	<0.5 uj	<210
	3/23/2005	450	290	140 J	95	1.3	2.3	14 j	<0.5	<15
MW-46B	6/24/2003	110	100	<480	46 j	0.66	3.6 j	4.1 j	<0.5	<100
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	<50	49	<73	<0.5	<0.5	<0.5	<0.5	<0.081	<16 uj
	2/19/2004	<50	95 u	75 J	<0.5	<0.5	<0.5	<0.5	<0.5	16 J
	4/21/2004	<50	41 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	4/21/2004 (Duplicate)	<50	43 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	25 J
	8/17/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	39 J	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	12/15/2004(Duplicate)	<50	51	<93	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/23/2005	<50	40 J	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<90

TABLE 5

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CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-46C	6/24/2003	53	63 u	<470	24 j	<0.5	2.2 j	2.4 j	<0.5	<200 u
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	<50	22 J	<73	<0.5	<0.5	<0.5	<0.5	<0.081	38 Juj
	2/19/2004	<50	46 Ju	<74	6.5	<0.5	<0.5	<0.5	<0.5	76 J
	4/21/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<130
	8/17/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	8/17/2004 (Duplicate)	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	12/15/2004	<50	<20	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/23/2005	<50	24 J	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<90
MW-47	6/24/2003	350	290 j	120 J	26 j	1.8	<0.5 uj	1.1 j	<0.5	<100 u
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	460	400	150 J	26 j	2.3	<0.5	1.6	0.1 J	21 Jj
	2/18/2004	51	310	210 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	4/21/2004	110	380	250 J	<0.5	<0.5	<0.5	<0.5	<0.5	13 Ju
	8/17/2004	260	360	150 J	1	1.2	<0.5	0.72	<0.5	<21
	12/16/2004	69	170	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	110	740	490	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-48A	6/24/2003	4600	1500 j	220 J	470 j	26	<5 uj	28 j	<5	<100
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2003	250	2000	750 J	1000	30	<25	26	<4	<8 uj
	2/19/2004	3100	1600	640 J	92	14	<5	17	<5	<8
	4/22/2004	5400	1300	94 J	220	32	11	36	<10	<21 uj
	8/18/2004	4100	1200	140 J	310	23	6.59	27	<2.5	<21
	12/15/2004	3600	1100	150 J	92	15	2.4	18	<1	<210
	3/21/2005	4900	2100	820 J	240	31	6.8	42	<0.5	<15
MW-48B	6/24/2003	150	100 u	<490	8.5 j	0.57	0.52 j	0.52 j	<0.5	<100 u
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2003	130	130	<74	<0.5	<0.5	1.2	<0.5	0.17 J	<8 uj
	11/20/2003(Duplicate)	130	150	<75	<0.5	<0.5	1	<0.5	0.18 J	<8 uj
	2/19/2004	140	290	120 J	<0.5	<0.5	1	0.66	<0.5	<8
	2/19/2004 (Duplicate)	150	300	130 J	<0.5	<0.5	<0.5	0.6	<0.5	<16
	4/22/2004	52	69	<53	<0.5	<0.5	<0.5	0.59	<0.5	<21
	8/18/2004	190	97	<54	<0.5	<0.5	<0.5	0.57	<0.5	<21
	12/15/2004	120	91	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/21/2005	110	300	150 J	<0.5	<0.5	0.96	<0.5	<0.5	22 J

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-48C	6/24/2003	<50	63 u	<480	4.6 j	<0.5	<0.5 uj	<0.5 uj	<0.5	<200 uj
	6/24/2003 (Duplicate)	<50	<48	<480	2.1	<0.5	<0.5	<0.5	<0.5	<1000 uj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/20/2003	<50	24 J	<74	<0.5	<0.5	<0.5	<0.5	<0.081	<24 uj
	2/19/2004	<50	25 Ju	<74	0.59	<0.5	<0.5	0.6	<0.5	<24
	4/22/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<130
	8/18/2004	<50	<33	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	12/15/2004	<50	36 J	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	12/15/2004(Duplicate)	<50	43 J	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/21/2005	<50	25 J	<93	<0.5	<0.5	<0.5	<0.5	<0.5	200 J
MW-49	6/25/2003	2200	760 j	190 J	430 j	15 j	31	40	<10	20 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/24/2003	3900 j	1800 j	660 Jj	410 j	27 j	31	29 j	<1.6	<8 uj
	2/18/2004	1500	540	720	60	3.4	<2.5	<2.5	<2.5	<8 uj
	4/21/2004	4800 j	1100	190 J	1800	81	79	95	<50	<21
	8/17/2004	2600	540	170 J	250	16	12	27	<5	<21
	12/15/2004	3800	710	210 J	770	44	44	46	<0.5	<210
	3/21/2005	2100	1200	280 J	100	2.3	6.8	3.1	<1	25 J

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-50	4/16/2003	<50	270	170 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	8/1/2003	<50	200 j	190 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	<50	210	170 J	<0.5	<0.5	<0.5	<0.5	<0.081	15 Jj
	2/18/2004	<50	130	89 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	4/20/2004	<50	130	80 J	<0.5	<0.5	<0.5	<0.5	<0.5	12 Ju
	8/18/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	93	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	170	140 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-51	4/16/2003	260	2200	710 J	8	1.6	0.56	<0.5	<2.5	<100
	8/1/2003	300	3000 j	1900 j	6 j	<0.5	<0.5	0.66	<0.5	NA
	11/18/2003	63	900	480	1.4	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/18/2004	<50	220	160 J	<0.5	<0.5	<0.5	<0.5	<0.5	22 J
	4/21/2004	120 j	440	86 J	1.4	<0.5	<0.5	0.57	<0.5	<21
	8/18/2004	<50	53	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	63	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	140	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-52	4/16/2003	160	800	330 J	0.98	1.1	1.3	<0.5	<2.5	<100
	6/23/2003	120	670	300 Jj	1.5 j	<0.5	<0.5	0.61	<0.5	NA
	6/24/2003	86	290	87 Jj	0.89 j	<0.5	<0.5	<0.5	<0.5	NA
	8/1/2003	53	480 j	350 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/18/2003	<50	730	450 J	<0.5	<0.5	<0.5	<0.5	<0.081	23 Jj
	2/18/2004	<50	630	300 J	<0.5	<0.5	<0.5	<0.5	<0.5	18 J
	4/20/2004	<50	190	71 J	<0.5	0.5	<0.5	0.66	<0.5	<8
	8/18/2004	<50	<33	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	59	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	160	130 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-53	4/16/2003	<50	470	290 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	7/31/2003	<50	190 j	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	380	220 Jj	<0.5	<0.5	<0.5	<0.5	<0.081	18 Jj
	11/20/2003(Duplicate)	<50	300	160 J	<0.5	<0.5	<0.5	<0.5	<0.081	<8 uj
	2/18/2004	<50	430	320 J	<0.5	<0.5	<0.5	<0.5	<0.5	15 J
	4/20/2004	<50	270	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/18/2004	<50	64	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/15/2004	<50	63	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	160	130 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-54	4/16/2003	63	750	300 J	1.6	<0.5	0.56	<0.5	<2.5	<100
	4/16/2003 (Duplicate)	<50	570	260 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	7/31/2003	<50	420 j	210 Jj	0.62 j	<0.5	<0.5	<0.5	<0.5	NA
	7/31/2003 (Duplicate)	<50 uj	620	470 Jj	0.52 j	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	1500 j	1500 j	0.52	<0.5 uj	<0.5	<0.5	<0.081	<8 uj
	2/18/2004	<50	340	310 J	<0.5	<0.5	<0.5	<0.5	<0.5	10 J
	4/20/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/18/2004	<50	220	220 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/13/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/21/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-55	4/15/2003	<50	380	270 J	<0.5	<0.5	<0.5	<0.5	<2.5	<100
	7/31/2003	<50	330 j	140 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	170	<74 uj	<0.5	<0.5	<0.5	<0.5	0.09 J	12 Jj
	2/18/2004	<50	240	170 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/20/2004	<50	210	91 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/20/2004 (Duplicate)	<50	210	88 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/17/2004	<50	<33	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004	<50	140	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/23/2005	<50	40 J	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-56	4/16/2003	93	490	210 J	<0.5	<0.5	1.4	<0.5	<2.5	32 J
	7/31/2003	<50 uj	320 j	250 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/20/2003	<50	320	200 Jj	<0.5	<0.5	<0.5	<0.5	<0.081	13 Jj
	2/18/2004	<50	100	84 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	4/20/2004	<50	700	370 J	<0.5	<0.5	<0.5	<0.5	<0.5	9.1 Ju
	8/17/2004	<50	48	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004	<50	230	150 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/23/2005	<50	79	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<90
MW-57	4/16/2003	94	170	110 J	1.6	<0.5	<0.5	<0.5	<2.5	<100
	7/30/2003	<50	360	310 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	7/30/2003 (Duplicate)	<50	350	300 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11/24/2003	<50	180	150 J	<0.5 uj	<0.5 uj	<0.5	<0.5	0.09 J	36 J
	2/19/2004	<50	150	110 J	<0.5	<0.5	<0.5	<0.5	<0.5	27 J
	2/19/2004 (Duplicate)	<50	160	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	24 J
	4/20/2004	<50	250	200 J	<0.5	<0.5	<0.5	<0.5	<0.5	8.3 Ju
	8/17/2004	<50	50	<54	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/14/2004	<50	260	180 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/23/2005	<50	77	<94	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-58	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2003	<50	87 j	<470	<0.5	<0.5	<0.5	<0.5	0.62 j	<100
	11/21/2003	<50	120	95 J	<0.5	<0.5 uj	<0.5	<0.5	0.45	<8 uj
	2/18/2004	<50	150	<73	<0.5	<0.5	<0.5	<0.5	<0.5	17 J
	4/21/2004	<50	39 J	<53	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	4/21/2004 (Duplicate)	<50	57	77 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/18/2004	<50	<33	<53	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<21
	12/15/2004	<50	36 J	<92	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	62	<91	<0.5	<0.5	<0.5	<0.5	<0.5	<15
MW-59	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2003	<50	210 uj	200 Juj	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	8/7/2003 (Duplicate)	<50	250 j	200 Juj	<0.5	<0.5	<0.5	<0.5	<0.5	<100
	11/21/2003	<50	380	360 J	<0.5	<0.5 uj	<0.5	<0.5	<0.081	<8 uj
	2/17/2004	<50	83 u	<74	<0.5	<0.5	<0.5	<0.5	<0.5	17 J
	4/21/2004	<50	140	76 J	<0.5	0.54	<0.5	0.61	<0.5	<8
	8/18/2004	<50	150	99 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/16/2004	<50	180	98 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	<50	180	150 J	2 j	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-60	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2003	58	1700 j	1000	1.4 j	<0.5	<0.5	<0.5	<0.5	<100
	11/24/2003	290 j	2300 j	1600 j	12 j	11 j	<0.5	0.97 j	<0.081	<8 uj
	2/17/2004	62	200	110 J	<0.5	3.5	0.57	<0.5	<0.5	8.6 J
	4/21/2004	85	960	650	<0.5	0.69	<0.5	<0.5	<0.5	17 Ju
	8/17/2004	60	590	290 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	8/17/2004 (Duplicate)	54	610	310 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	12/16/2004	77	540	280 J	<0.5	<0.5	<0.5	<0.5	<0.5	<21
	3/23/2005	<50	83	<91	<0.5	<0.5	<0.5	<0.5	<0.5	17 J
MW-61	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2003	230	990 j	570	29 j	<0.5	2.2	7	<0.5	<100
	11/24/2003	64	1200	930	<0.5 uj	<0.5 uj	<0.5	<0.5	<0.081	<8
	2/17/2004	160	600	250 J	<0.5	<0.5	<0.5	<0.5	<0.5	<8 uj
	4/21/2004	270 j	2500 j	1300 Jj	<0.5	<0.5	<0.5	<0.5	<0.5	<8
	8/18/2004	<50	270	140 J	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<0.5 uj	<21
	12/16/2004	<50	240	120 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/22/2005	110	1400	370 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
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WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-62	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2003	9400	2000 j	700 Jj	2400 j	<50	86	680	<50	<100
	11/24/2003	10000 j	2500 j	1100 j	4200 j	<50 uj	540	700 j	<8.1	<8 uj
	2/17/2004	15000	1400	150 J	2800	<50	370	690	<50	74 Jj
	4/21/2004	15000	3100	830 J	7000	<50	750	240	<50	17 Ju
	8/17/2004	7200	1200	360 J	3500	<50	350	<50	<50	<21
	12/16/2004	2800	620	220 J	520	6.5	180	18	<0.5	<210
	3/23/2005	9600	7600	<1800	1100	<25	520	1300 j	<25	<15
	3/23/2005 (Duplicate)	9500	7800	<1800	1100	30	550	1300	<25	24 J
MW-A1	6/25/2003	570	1900 j	690 J	7.6	2.6 j	2	10	<0.5	34 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/24/2003	690	2200	890 J	2.8 j	4 j	<0.5	6.3	<0.081	<8
	2/17/2004	810	880	120 J	3	2.9	<0.5	6	<0.5	<8 uj
	4/21/2004	1500 j	1300	240 J	19	5.9	0.74	9.1	<0.5	<8
	8/18/2004	1400	1300	330 J	16	2.7	0.51	5.1	<0.5	<21
	12/16/2004	820	920 j	280 J	<0.5	0.69	<0.5	1.6	<0.5	<210
	12/16/2004(Duplicate)	780	510 j	120 J	<0.5	0.65	<0.5	1.7	<0.5	<210
	3/23/2005	65	110	96 J	<0.5	<0.5	<0.5	<0.5	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
MW-A2	6/25/2003	1100	1500 j	460 J	78	15 j	5.2	22	<5	21 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/24/2003	490	960	490 J	16 j	15 j	0.96	5.3	<0.081	<8
	2/17/2004	<50	90 u	130 J	0.75	2	<0.5	<0.5	<0.5	<8 uj
	4/21/2004	150	320 j	310 Jj	7.5	1.6	0.76	1.2	<0.5	<8
	8/18/2004	490	1000	1200	67	12	6.6	7.5	<0.5	<21
	12/16/2004	51	280	290 J	<0.5	<0.5	<0.5	<0.5	<0.5	<210
	3/24/2005	150	520	180 J	<0.5	<0.5	<0.5	0.57	<0.5	<15
	3/24/2005 (Duplicate)	140	470	150 J	<0.5	<0.5	<0.5	0.58	<0.5	<15
MW-A3	6/25/2003	210	1300 j	560 J	13	0.98 j	1.3	5.8	<0.5	47 Juj
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/24/2003	91 j	1200 j	320 Jj	0.97 j	<0.5 uj	<0.5	<0.5 uj	0.1 J	9.4 Jj
	11/24/2003(Duplicate)	280 j	1200 j	520 j	11 j	3.2 j	<0.5	1.5 j	<0.081	<8 uj
	2/17/2004	130	290	<73	3.9	0.93	<0.5	1.1	<0.5	<8 uj
	2/17/2004 (Duplicate)	120	310	84 J	3.8	1.1	<0.5	0.91	<0.5	<8 uj
	4/21/2004	210	550	160 J	3.1	0.79	<0.5	1.1	<0.5	13 J
	8/18/2004	220	500	240 J	2.1	<0.5	<0.5	1	<0.5	<21
	12/16/2004	170	460	200 J	1.2	<0.5	<0.5	0.73	<0.5	<210
	3/23/2005	<50	150	<91	<0.5	<0.5	<0.5	<0.5	<0.5	48 J

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

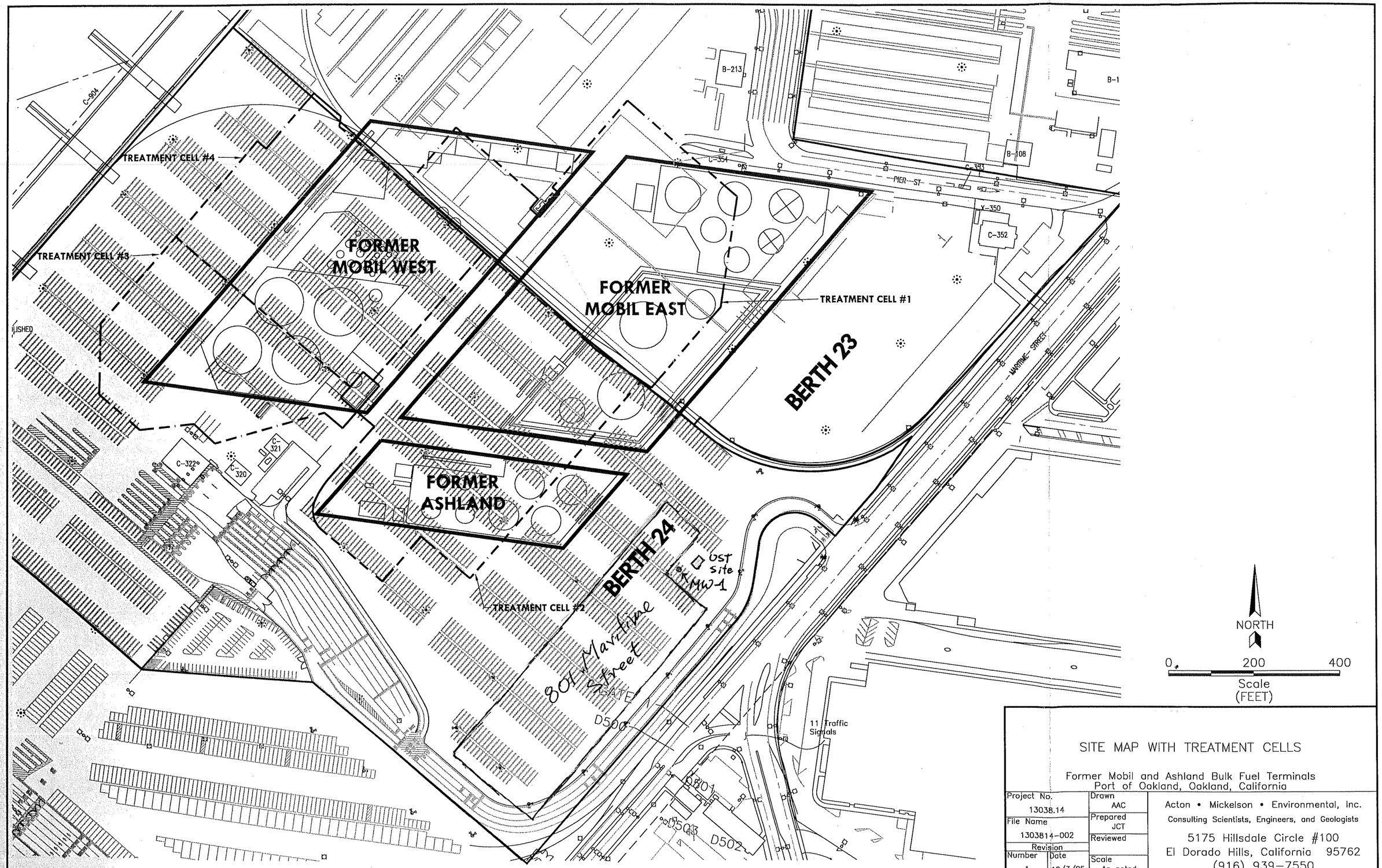
WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD
TW-1BB	4/4/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/30/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/19/2003	400	450	87 J	12 j	0.67	1.7	0.88	0.12 J	23 Jj
	2/18/2004	350	490	120 J	25	1.1	2.7	1.8	<0.5	<24 uj
	4/20/2004	380 j	510	160 J	0.8	<0.5	<0.5	<0.5	<0.5	<8
	8/16/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/2004	2600	3800	<910	13	3.1	60	26	<0.5	24 J
	3/22/2005	1600 j	1800	810 J	15 j	0.85	16	8.6	<0.5	<15

TABLE 5

GROUND WATER ANALYTICAL DATA
CHEMICALS OF POTENTIAL CONCERN
Former Mobil and Ashland Bulk Fuel Terminals, Port of Oakland,
Berths 23 and 24, Oakland, California
(Concentrations in micrograms per liter)

WELL	SAMPLE DATE	TPH GASOLINE	TPH DIESEL	TPH MOTOR OIL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	MTBE	LEAD

Excludes samples collected after air sparging tests from a series of samples collected from monitoring wells MW-15 and MW-52 on June 24 and 25, 2003.
Analyte abbreviations:
TPH = Total petroleum hydrocarbons.
MTBE = Methyl tertiary butyl ether.
< = Concentration as reported by the analytical laboratory is less than the Method Detection Limit (MDL) or the Practical Quantitation Limit (PQL). MDL or PQL listed in micrograms per liter.
NA = Not analyzed.
NS = Not sampled.
Data qualifiers, beginning with 2003 data (analytical laboratory data qualifiers in upper case, data validation qualifiers in lower case):
J or j = Estimated value. The analyte was positively identified, but the associated numerical result is an estimate.
u = Not detected (data validation qualifier only).
uj = Not detected. The associated numerical value is an estimate of the PQL or the MDL (data validation qualifier only).
r = Data rejected. The presence or absence of the analyte cannot be verified (data validation qualifier only).
Analysis Methods:
TPHg analyzed by EPA Method 8015V. Quantified over carbon range C6-C12 before April 2004, C4-C12 beginning with April 2004 samples.
TPHd and TPHo analyzed by EPA Method 8015D with silica gel cleanup by EPA Method 3630.
Benzene, toluene, ethylbenzene, xylenes, and MTBE analyzed by EPA Method 8021B during the April 2003 sampling event.
Benzene, toluene, ethylbenzene, xylenes, and MTBE analyzed by EPA Method 8260B after April 2003.
Lead analyzed by EPA Method 6010A or 6010B.



SITE MAP WITH TREATMENT CELLS

Former Mobil and Ashland Bulk Fuel Terminals
Port of Oakland, Oakland, California

Project No. 13038.14		Drawn AAC	Acton • Mickelson • Environmental, Inc.
File Name 1303814-002		Prepared JCT	Consulting Scientists, Engineers, and Geologists
Revision		Reviewed	5175 Hillsdale Circle #100
Number	Date	Scale	El Dorado Hills, California 95762
1	10/3/05	As noted	(916) 939-7550

Figure 1

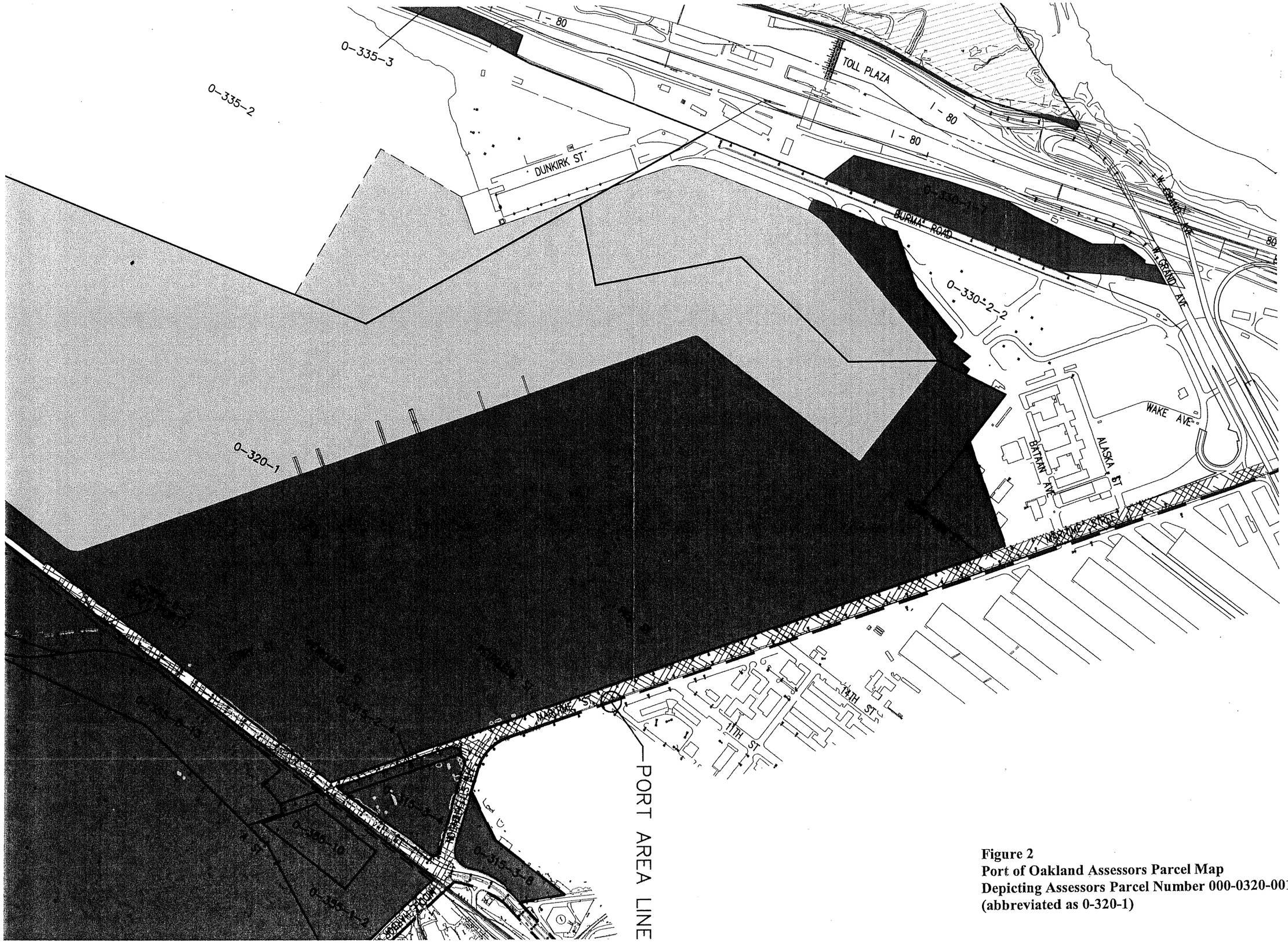
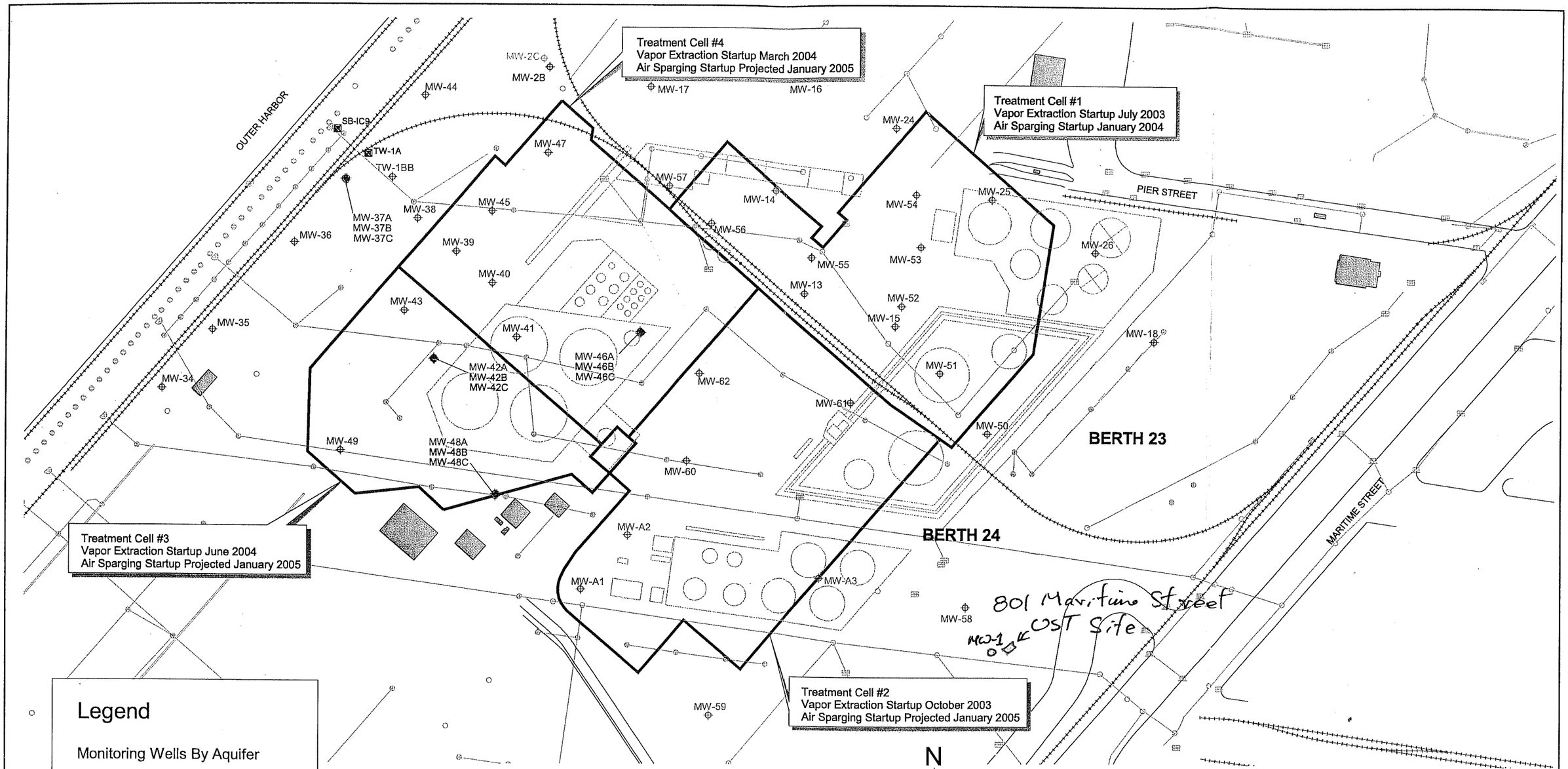


Figure 2
Port of Oakland Assessors Parcel Map
Depicting Assessors Parcel Number 000-0320-001-00
(abbreviated as 0-320-1)



Legend

Monitoring Wells By Aquifer

- Artifical Fill
- Artifical Fill/Young Bay Mud
- San Antonio FM
- Alameda FM
- Historical Sample Location in Artificial Fill
- Storm Drain

Notes:
1. All locations and dimensions are approximate.
2. At monitoring well clusters MW-37, MW-42, MW-46, and MW-48, A denotes Artificial Fill, B denotes upper San Antonio Formation, and C denotes lower San Antonio Formation.

FIGURE 3

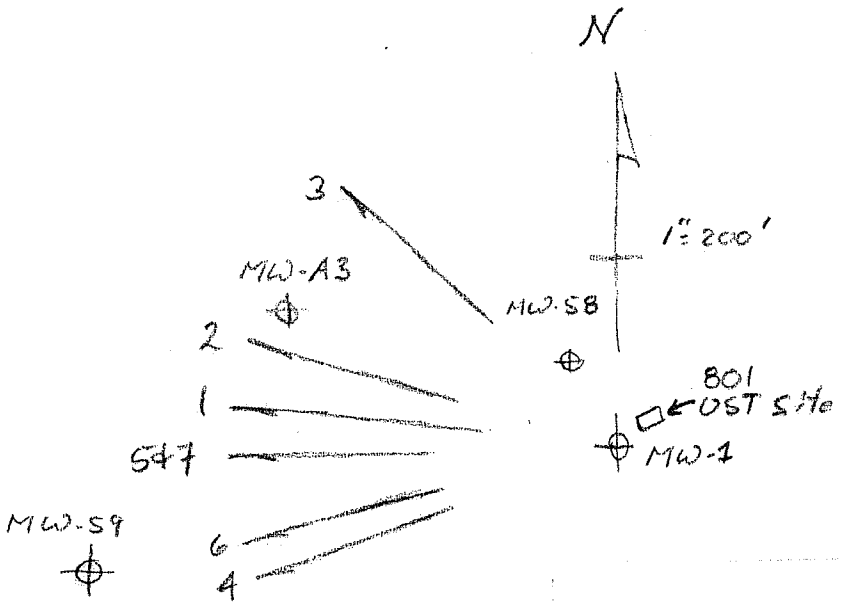
GROUND WATER MONITORING WELL LOCATIONS

Former Mobil and Ashland Bulk Fuel Terminals
Port of Oakland, Oakland, California

Project No. 13038.14	Drawn By AAC
Layout existing	Prepared By JRH
Arcview Project existingwells	Reviewed By
	Scale As Noted

Acton Mickelson Environmental, Inc.
Consulting Scientists, Engineers, and Geologists
5175 Hillsdale Circle #100
El Dorado Hills, California 95762
(916) 939-7550

Figure 4
Groundwater Flow Directions
801 Maritime Street UST Site



Vector No.	Map Date
1	March 21, 2005
2	December 13, 2004
3	August 20, 2004
4	April 19, 2004
5	February 13,2004
6	November 12, 2003
7	August 7, 2003

APPENDIX H

WELL MW-1 SAMPLING SHEET

R&M ENVIRONMENTAL and INFRASTRUCTURE ENGINEERING, INC.
MONITORING WELL SAMPLING SHEET

SITE INFORMATION	
Project Name: 801 Maritime Street	Project Number: 4009
Project Location: 801 Maritime Street, Oakland, CA	Date: 9/25/2008
Personnel: Masood Ghassemi, Rafael Carranza, Jim Gribi	

FIELD MEASUREMENT						EXTRACTION EQUIPMENT USED		
							Purging	Sampling
Depth to Bottom (DTB):	15.20 ft.	**Well ID:**	MW-1			Submersible Pump	☐	☐
Depth to Water (DTW):	7.82 ft.	Casing Diameter:	2"	in.		Peristaltic Pump	■	■
Water Column Height:	7.38 ft.	OVC[1]:	0	ppm		Disposable Bailer	☐	☐
Purged Volume (PV)*:	3.6 gal.	Pump Setting:	15	ft.				

1: Organic Vapor Concentration at Top-of-Casing

GROUNDATER PARAMETERS

Time	CPV[2] (gal)	FR[3] (gal/min)	DTW (ft)	T (^{o}C)	E.C. (mS/cm)	D.O. (mg/L)	pH	ORP (mV)	REMARKS
8:03	0		7.82						clear, steady flow
8:08	1		7.86	23.53	4.714	1.38	11.84	-80.2	
8:11	2		7.88	23.72	4.736	1.12	11.86	-116.1	
8:15	3		7.88	23.82	4.758	0.57	11.83	-142.4	
8:19	4		7.88	23.83	4.777	0.36	11.81	-156.3	

2: Cumulative Purged Volume 3: Flow Rate

SAMPLE OBSERVATION AND REMARKS		SAMPLE INFORMATION
Color:	Yes ☐ No ■	Sample ID: **MW-1**
Odor:	Yes ☐ No ■	Sampling Time: 8:21
Sheen:	Yes ☐ No ■	Field Duplicate ID:
Precipitate:	Yes ☐ No ■	MS/MSD ID:
Floating Particles:	Yes ☐ No ■	Trip Blank ID:
Immiscible Phase:	Yes ☐ No ■	Equipment Rinsate ID:

SAMPLE ANALYSIS

Requested Analysis	No. of Containers	Container Type
Method 8260 for TPH-g, BTEX, MTBE,	6	40-mL w/HCl
Method 8015B for Diesel	1	1-L amber w/ no preservative
Total Dissolved Solids (TDS)	1	250 mL poly w/no preservative

*Purged Water from 0.75-inch Well (gal) = (number of casing volume)(0.023 gal/ft)(water column height, ft)

*Purged Water from 2-inch Well (gal) = (number of casing volume)(0.163 gal/ft)(water column height, ft)

*Purged Water from 4-inch Well (gal) = (number of casing volume)(0.652 gal/ft)(water column height, ft)

NM: Not Measured
NR: No Reading
NA: Not Applicable

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING MW-1

Page 1 of 1

SEE SITE PLAN

ALISTO PROJECT NO: 10-339-01 DATE DRILLED: 07/03/98

CLIENT: Port of Oakland

LOCATION: 801 Maritime Street, Oakland, California

DRILLING METHOD: Hollow-Stem Auger (8")

DRILLING COMPANY: V & W Drilling CASING ELEVATION: 10.61 MSL

LOGGED BY: C. Lead APPROVED BY: Al Senna

BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
						SM SP	silty to gravelly SAND: gray, damp; gravel to 2-inch diameter.
38,50/6"			5			SP	gravelly SAND: gray, wet, very dense; medium- to coarse-grained sand; approximately 30% angular gravel to 1/2-inch.
10,12,32			10			ML	sandy SILT: dark gray, wet; approximately 30% very fine- to fine-grained sand; driftwood (approximately 50% at 11-11.5 foot sample).
2,3,3			15			CL	sandy CLAY: dark gray, wet; approximately 15% very fine- to fine-grained sand.
3,3,3							Same
			20				Stabilized water level measured on July 10, 1998.
			25				
			30				

WELL DIAGRAM: 2" Sch. 40 PVC; 2" 0.010" Slotted PVC Screen; Bentonite Seal; Neat Cement; #2/12 Sand

DESIGNED BY:	CHECKED BY:	LOG OF BORING MW-1 PORT OF OAKLAND 801 MARITIME STREET OAKLAND, CA	DATE: 02/21/2007	FIGURE: 5
DRAWN BY: CA	SCALE:		R&M Environmental	
PROJECT NO:				

Source: Log of Boring MW-1, 801 Maritime Street, Port of Oakland, Alisto Engineering Group, 7/03/98.