

**FINAL REPORT**

**REMEDIAL INVESTIGATION  
22-ACRE FORMER ALAMEDA  
BELT LINE RAIL YARD  
ALAMEDA, CALIFORNIA**

*Prepared for*  
Sun Country Partners, LLC  
5000 Hopyard Road, Suite 170  
Pleasanton, California 94588

June 1999

***URS Greiner Woodward Clyde***

500 12th Street, Suite 200  
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Ms. Madhulla Logan  
Hazardous Materials Specialist  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94503

**Subject: Remedial Investigation of the 22- acre Former Alameda Belt Line Rail Yard,  
Alameda, California**

Dear Ms. Logan:

On behalf of Sun Country Partners, LLC (Sun Country), URS Greiner Woodward Clyde (URSGWC) is pleased to submit for your review and approval the attached report entitled Remedial Investigation of the 22-acre Former Alameda Belt Line Rail Yard, Alameda, California. The report describes the findings and recommendations of the Remedial Investigation activities.

We look forward to receiving your comments on this report. If you have any questions, please call Al Ridley at (510) 874-3125 or Marco Lobascio at (510) 874-3254.

Sincerely,

**URS Greiner Woodward Clyde**



Albert P. Ridley, C.E.G.  
Project Manager



Marco C. Lobascio, P.E., R.E.A.  
Project Engineer

cc: Mr. Mike Valley, Sun Country

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**1.1 INTRODUCTION**

This report presents the results of a Remedial Investigation (RI) performed by URS Greiner Woodward Clyde (URSGWC) at the Former Alameda Belt Line 22-acre Parcel (the site), on behalf of Sun Country Partners, LLC (Sun Country). Sun Country intends to redevelop the site for residential use.

The purpose of the RI was to perform sampling and analysis of ballast rock and shallow groundwater in selected areas of the site, as described in the work plan (URSGWC 1999). These areas were identified based on the results of a Phase II Environmental Site Assessment (ESA) presented in a report dated March 9, 1999 (URSGWC 1999). The ultimate goal is to satisfy the requirements of the Alameda County Department of Environmental Health (the County) and other relevant government agencies for residential development of the site.

On April 6, 1999, in a telephone communication with Mr. Marco Lobascio, Ms. Madhulla Logan of the County discussed and approved the findings and recommendations of the ESA report. According to the conclusions of the ESA, the site may be used for the planned residential development provided that the recommended investigation activities are performed to address the identified environmental issues and appropriate remedial actions are implemented, if necessary. The site environmental concerns identified in the ESA are summarized below:

- Lead was detected in ballast rock at a maximum reported concentration of 380 mg/kg at location SS-1. This concentration exceeds the revised California EPA-modified residential PRG of 300 mg/kg. Additional exploration of the extent of the area where lead exceeds 300 mg/kg was recommended near location SS-1.
- TPH-gasoline was detected at 0.43 mg/l, and TPH-diesel at 3.7 mg/l in groundwater from Boring B-10. BTEX and PNAs, the "risk drivers" for TPH (ASTM 1995), were non-detectable. While there is no regulatory guidance (MCL, Action Level, or tap water PRG) for TPH diesel or gasoline in groundwater, further exploration of the extent of TPH in shallow groundwater was recommended following the County's directives.
- The concentration of 1,2-DCE (cis) in groundwater from Boring B-6 exceeded the MCL of 0.006 mg/l. This exceedance is likely to be of minor concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water. Even in the unlikely case the shallow groundwater may be used as a drinking water source, the 1,2-DCE detection should be averaged with the 12 non-detects to obtain a concentration representing the overall site conditions. Conservatively assuming that the non-detects are all at the detection limit of 0.0005 mg/l, the average 1,2-DCE concentration is 0.009 mg/l, exceeding the MCL of 0.006 mg/l by a factor of less than two. This exceedance was evaluated to be not of concern in terms of protection of human health, provided that the recommended additional exploration activity confirms the assumption of relatively limited extent of shallow groundwater impacted by 1,2-DCE.

To address the concerns described above, the following activities were performed in the RI:

1. Exploration of lead in ballast rock near location SS-1.

2. Exploration of TPH in shallow groundwater near location B-10.
3. Exploration of 1,2-DCE and associated VOCs in shallow groundwater near location B-6.

The field exploration sampling activities were conducted from May 19 to 21, 1999. Figure 2 shows the sampling locations. A total of 11 borings were drilled using a XD-1 rig to collect grab groundwater samples. The borings were drilled to an average depth of 9.5 feet, and a grab groundwater sample was collected from each of the borings. Surface ballast rock samples were collected at fourteen locations, at a depth of 0- to 1-foot.

Section 2.1 describes the field exploration activities. The results of the laboratory analyses performed on the samples are presented in Section 2.2. Six of the grab groundwater samples were analyzed for VOCs, methane, carbon dioxide, chloride and total organic carbon (TOC). The other five grab groundwater samples were analyzed for TPH-diesel, TPH-gasoline, MTBE and BTEX, TPH-motor oil, sulfates, nitrates, methane and carbon dioxide. The fourteen ballast rock samples were analyzed for total lead.

Section 3.0 presents the results of the data evaluation activity. Conclusions and recommendations are in Section 4.0. Limitations of this study are summarized in Section 5.0. References are in Section 6.0. The ESA report and the RI work plan are provided in Appendices A and B. Analytical laboratory reports are in Appendix C.

## **1.2 SITE ENVIRONMENTAL SETTING**

The site is located in Alameda, California, occupying an area of approximately 22 acres. The site is about 3000 feet long (east to west) and about 450 feet wide (see Figure 1). The site consists of two parcels: the Alameda Belt Line Railroad owned the larger parcel (see Figure 2), and the Union Pacific Railroad owned the smaller parcel along the south edge of the site.

The site is bounded by the commercial office complex of Marina Village to the north, by Sherman Street to the east, and by residential properties on the southern side. The western boundary of the site is at Constitution Way. Most of the site was once occupied by parallel spur tracks, but as of May 1999 when the RI was performed, only the western half of the site had tracks left on it. The eastern half of the site had stacks of timber formerly used for the tracks. Several fenced tenant spaces are located at Sherman Street, and along the north property line. Boats, trucks, wood, and metal scrap still exist at one tenant space at the north edge of the site. The former tenants have removed vehicles and equipment from the other spaces. The Yard House, a one story wood structure, is located at Sherman Street. Concrete foundations remain from a former above ground fuel tank and the former Maintenance Building at the western end of the site. Two concrete maintenance pits remain at the former Maintenance Building. At the bottom of one pit ponded water was observed. The other pit (northern) has been filled and paved over with asphaltic concrete.

According to the US Geological Survey (USGS, 1980) Oakland West 7.5 minute Quadrangle, the site is located on gently sloping level land, with an elevation of about 10 feet above mean sea level. The Marina Village development, located to the north of the site, was raised by filling. Therefore, the surface drainage is directed towards the west. The nearest body of water is the Encinal Basin, which is located about 800 feet northeast, and it is part of the Oakland Estuary.

The Alameda Belt Line Railway, initially known as the Industrial Railway or the Municipal Railway, was built in 1918 by the City of Alameda. Although it was to be operated by the City's Board of Public Utilities, it was operated from the beginning by Southern Pacific Railroad. In January of 1925, the City proposed to extend the Belt Line west of Grand Street to Encinal Terminal. Western Pacific and Santa Fe Railroad bought the existing tracks, and acquired additional land for the expansion. Construction was delayed by the objections of the residents and neighbors, but on February 1927 the City Council approved the Belt Line Extension. The Belt Line served local customers with spurs between Grand Avenue and Constitution Way.

After the maintenance building, located at the western end of the site near Constitution Way, burned to the ground around 1980, the Belt Line had only one principal building, the Yard House at 1925 Sherman Street. There were at the time of this writing, piles of soil and construction debris with asphaltic concrete and concrete on the north side of the site and west of the tenant spaces.



## 2.1 SUMMARY OF FIELD INVESTIGATION ACTIVITIES

The drilling activities were performed on May 19 to 21, 1999, under the supervision of an engineer from URSGWC. A total of 11 "direct push" soil borings were drilled at the site in the locations described in the work plan. Fourteen bulk surface ballast rock samples were collected at locations selected in a grid pattern in the area where lead was detected. The locations of the borings and the surface ballast rock samples are shown in Figure 2.

At each boring location, a direct 2¼ -inch push sampler was advanced into the ground using the hydraulic capacity of the XD-1 drill rig. At each boring location grab groundwater samples were collected. Sampling equipment was cleaned by pressure washing between sampling events.

The groundwater samples collected from GWDCE-1 through GWDCE-6 were analyzed for VOCs, methane, carbon dioxide, chloride and total organic carbon (TOC). The groundwater samples collected from GWTPH-1 through GWTPH-5 were analyzed for TPH-diesel, TPH-gasoline, MTBE and BTEX, TPH-motor oil, sulfates, nitrates, methane and carbon dioxide. The fourteen ballast rock samples, SSPb-1 through SSPb-16, were analyzed for total lead.

The fourteen ballast rock samples were collected in the vicinity of shallow ballast rock sample location SS-1 from the ESA where lead was detected at a maximum reported concentration of 380 mg/kg. Seventeen samples were located on a 50-foot grid extending from SS-1. Three planned locations at the southern boundary of the Site were not sampled due to access problems. The six groundwater sampling locations, GWDCE-1 through GWDCE-6, were located in the vicinity of Boring B-6 where 1,2-DCE was detected at a concentration exceeding the SSTL of 0.006 mg/l in the ESA. The five groundwater sampling locations, GWTPH-1 through GWTPH-5, were located in the vicinity of Boring B-10 where elevated TPH concentrations were detected in shallow groundwater during the ESA.

Grab groundwater samples were collected from each boring following the installation of a temporary PVC well of 3/4-inch diameter. Groundwater samples were collected using clean teflon tubing and a peristaltic pump. Most borings had a significant recovered volume of groundwater available for sampling, however heavy silting of Boring GWDCE-4 prevented the pumping of enough volume to complete the analytical suite.

Ballast rock and groundwater samples were sealed, individually labeled and stored on ice in an ice chest prior to transportation to Chromalab Analytical Laboratory of Pleasanton, California. Chain-of-custody procedures were used during sampling and transport of these samples. Purge water from the borings was collected and stored on-site in a 55-gallon drum. The drum was appropriately labeled and sealed for proper handling. Grab water samples were collected, labeled PURGE-1, and submitted for analysis. Following receipt of the analytical results the drum shall be appropriately disposed by the drilling subcontractor.

## 2.2 ANALYTICAL RESULTS

This section describes the results of the laboratory analyses performed on the samples collected at the site on May 19 through 21, 1999. Ballast rock samples were analyzed by Chromalab, Inc. of Pleasanton, California for total lead by EPA Method 6010A. Groundwater samples were

analyzed by Chromalab, Inc. for TPH-gasoline, BTEX and MTBE by EPA Method 8015A; TPH-motor oil and TPH-diesel by EPA Method 8020/8015M; and VOCs by EPA Method 8260. Groundwater samples were analyzed by Air Toxics Ltd. of Folsom, California for methane and carbon dioxide. Groundwater samples were analyzed by Sequoia Analytical of Walnut Creek, California for TOC, chloride, sulfates and nitrates.

### ***Ballast Rock Analytical Results***

Table 2-1 presents the results of the laboratory analyses performed on the ballast rock samples from the site. Using EPA Method 6010A, lead was detected in all of the 14 ballast rock samples, ranging in concentration from 7.4 mg/kg to 110 mg/kg (ballast rock sample SSPb-11).

### ***Shallow Groundwater Analytical Results***

Table 2-2 presents the laboratory analyses results for the five grab groundwater samples taken in the vicinity of Boring B-10 where TPH-diesel was detected during the ESA. The samples were analyzed for TPH-gasoline, -diesel and -motor oil; BTEX and MTBE using EPA Method 8020A. TPH-diesel was detected in only one grab groundwater sample analyzed, at a concentration of 0.080 mg/l in Boring GWTPH-5. However, the laboratory reported that the detection was in the diesel range, but did not exhibit a pattern characteristic of a hydrocarbon. BTEX, TPH-gasoline, TPH-motor oil and MTBE were not detected in any of the samples.

Table 2-3 presents the laboratory analyses results for the seven (including one duplicate) grab groundwater samples taken in the vicinity of Boring B-6 where 1,2-DCE was detected during the ESA. The samples were analyzed for VOCs using EPA Method 8260A. 1,2-DCE was not detected in any of the samples. Acetone was detected in three samples, ranging in concentration from 0.055 mg/l to 0.069 mg/l. Ethylbenzene was detected once at a concentration of 0.00058 mg/l (Boring GWDCE-5). Total xylenes were detected in two samples at concentrations of 0.0013 mg/l (Boring GWDCE-1) and 0.0028 mg/l (Boring GWDCE-5).

Additional analyses were performed on the groundwater samples to assess the physical, chemical and biological composition of the subsurface environment. These studies were conducted in order to assess the potential for natural attenuation due to microbial activity in the site subsurface occurring at the site. Table 2-4 presents the natural attenuation parameter results.

## **2.3 DATA VALIDATION**

The analytical results of the ballast rock and groundwater samples collected on May 19 to 21, 1998 were reviewed and validated following QA/QC procedures for accuracy and applicability for the evaluation of site conditions. A total of 14 ballast rock samples and 12 groundwater samples (including a duplicate sample) were collected. In addition, 1 equipment blank, a purge water sample and 1 trip blank were also analyzed. The review evaluated the following items:

- Holding times were checked for exceedences of prescribed extraction and analysis criteria.
- Equipment blanks, trip blanks and laboratory method blanks were reviewed to evaluate potential sample contamination.

- Matrix Spikes (MS), Matrix Spike Duplicates (MSD), Laboratory Control Samples (LCS), Laboratory Control Sample Duplicates (LCSD) and Surrogate Spikes were reviewed to evaluate for analytical accuracy and precision.

The criteria for the evaluation were based on the USEPA's National Functional Guidelines for Organic and Inorganic Data Review (USEPA 1994).

### ***Holding Time Review***

The extraction and analysis holding time for each sample was reviewed for exceedances. No exceedances of method holding times were found.

### ***Blank Review***

Equipment, trip and laboratory method blank results were reviewed for detections of target analytes, which may indicate sample contamination. Blank samples are analyzed in the same manner as field samples. The equipment blank is prepared in the field using laboratory supplied "blank" distilled water, and is used to assess the potential for sample contamination as a result of sample collection, handling, storage and analysis. The trip blank is prepared by the laboratory and is brought but not opened in the field, and is used to assess the potential for sample contamination during sample handling and analysis. Laboratory method blanks consist of reagents specific to each individual analytical method that were prepared and analyzed by the laboratory to assess potential sample contamination within the laboratory.

Chloroform, barium, copper and zinc were detected in the equipment blank. No VOCs were detected in the trip blank. The presence of chloroform, barium, copper and zinc may be due to inadequate equipment cleaning procedures.

### ***MS/MSD, LCS/LCSD and Surrogate Spike Review***

Matrix spike and matrix spike duplicate samples are prepared at the laboratory by dividing a control sample into two aliquots, then spiking each with identical concentrations of specific analytes. The spike samples are then analyzed separately and the results are compared to evaluate the effects of the sample matrix on the analytical accuracy and precision. Accuracy is assessed by calculating the relative percent recovery (RPR) and precision is assessed by calculating the relative percent difference (RPD). US EPA considers an RPR between 25% to 130%, and an RPD value less than 20% to be acceptable (USEPA, 1994).

Laboratory control sample (LCS) recoveries and duplicate relative percent differences (RPDs) were reviewed as a check for analytical accuracy and precision. The LCS is a known sample made by the laboratory for a specific analyte that is analyzed by the laboratory, and the percent recovery is compared to the original added amount of the analyte. The LCS is created by the laboratory by taking a control sample of soil/water and adding a specific analyte, analyzing it, and then comparing the percent recovery to the original analysis of the soil/water sample.

Surrogate spike recoveries were reviewed to determine the efficiency of the sample preparation and the analytical process. Surrogate spike samples are samples containing organic constituents

# SECTION TWO

# Summary of Field Sampling and Laboratory Analyses

not expected to be detected in the environmental media and are added to every sample and QC at a known concentration. Recoveries and RPDs for the different analytical methods can be found in the following table.

**TABLE 2-3 QUALITY ASSURANCE/QUALITY CONTROL REVIEW**

Compound	LCS Recovery (%)	LCSD Recovery (%)	RPD for LCSD Recovery (%)	MS Recovery (%)	MSD Recovery (%)	RPD for MSD Recovery (%)
<b>EPA Method 6010A</b>						
Lead in ballast rock	95.3	93	2.4	87.6	87.5	0
Metals in water	92-98	9-98	0-4.2	89.1-98.9	89.7-98.1	0-0.8
<b>EPA Method 7470A/7471A</b>						
Mercury in water	--	--	--	82	85	3.6
<b>EPA Method 8015M</b>						
Diesel and Motor Oil in Water	88.9	85.6	3.8	--	--	--
Surrogates	119.8	117.6	--	--	--	--
<b>EPA Method 8020/8015M</b>						
Gasoline/BTEX/MTBE in Water	82.6-102.2	88.1-99.5	0.1-11.5	88.9-141.7	89.8-136.4	0.1-1.7
Surrogates	87.3-101.5	83.6-103.1	--	92.7-112.5	94.7-106.9	--
<b>EPA Method 8260A</b>						
VOCs in Water	82.2-110.2	84.6-113.8	0.2-4.5	94.4-106.9	88.5-103.1	3.3-6.5
Surrogates	86.6-105.8	81.3-105.9	--	91.6-101.7	91.6-102.9	--
<b>Modified SW-846 Method 3810</b>						
Methane & CO <sub>2</sub> in Water	--	--	--	74-115	--	--
<b>Conventional Chemistry Parameters</b>						
TOC in Water	101	--	--	89.6	91.6	2.21
Chloride in Water	92.7	--	--	92.8	91.5	1.41
Sulfate as SO <sub>4</sub> in Water	96.7	--	--	96.7	97.3	0.619

Note: RPRs outside of laboratory control limits are bolded.

The LCS and MS recoveries for Method 6010 were within laboratory control limits and indicate acceptable analytical accuracy and precision. The MS recovery for Method 7470A/7471A for mercury in water was within laboratory control limits, and therefore indicates acceptable analytical accuracy and precision.

RPRs and RPDs for EPA Method 8015M were within laboratory control limits and indicate acceptable analytical accuracy and precision. However, detections of diesel in groundwater samples GWTPH-5 and PURGE 1 do not exhibit a pattern characteristic of hydrocarbon.

## **SECTION TWO**

## **Summary of Field Sampling and Laboratory Analyses**

The MS and MSD recoveries for EPA Method 8020/8015M exceeded the laboratory control limits for gasoline, however associated laboratory control spike recoveries were within control limits. The LCS and MS recoveries for Method 8260A were within laboratory control limits and indicate acceptable analytical accuracy and precision. The surrogate recoveries for EPA Method 8260A were higher than QC limits due to matrix interference.

### **Overall QA/QC Assessment**

All of the QA/QC criteria were satisfied, except for the presence of chloroform, barium, copper and zinc in the equipment blank indicating contamination of the tubing used for the peristaltic pump or the blank "distilled" water. In general, if the detections in the field samples are less than five times the concentration detected in the equipment blank, then it may be assumed that the detections are due to equipment contamination. Chloroform was not detected in any of the field groundwater samples, therefore there is no concern with this analyte. Barium, copper and zinc were detected in the purge water sample (PURGE 1), however the detections are less than five times the detected concentrations in the equipment blank. Therefore, the detections of the compounds in the equipment blank do not appear to be a result of groundwater contamination at the site, but instead a result of equipment contamination. Based on the above considerations, it is concluded that the results of the QA/QC analysis for soil and water indicate acceptable levels of analytical precision and accuracy.

This section describes the evaluation of the results of the field sampling and laboratory analysis activities. The purpose of this evaluation is to indicate if soil and groundwater conditions may be of concern regarding protection of human health and the environment based on long-term exposure to low-levels of contaminants. Considering that the site is planned for residential development, the results of this evaluation will be used to support decisions about the need (if any) and extent of further characterization and/or remedial actions necessary for the future land use.

For ballast rock, the evaluation was based on comparing detected ballast rock concentrations to the U.S. EPA Region 9 Preliminary Remedial Goals (PRGs). The PRGs are conservative, non-site-specific, risk-based concentrations corresponding to a cancer risk of one-in-a-million or a unit (one) non-cancer hazard quotient for residential or commercial/industrial receptor exposure scenarios (USEPA 1998). The soil PRGs assume exposure to chemicals due to incidental ingestion, dermal contact, inhalation of particulates, and inhalation of vapor emissions into ambient air (VOCs only). For instance, a very conservative hypothesis of the soil PRGs is that there is and will be no barrier between the contaminated soil and the receptor. Due to their conservatism, the PRGs are used as screening-level criteria. If representative site concentrations do not exceed PRGs, and the site has been adequately investigated, no further action is generally warranted in terms of protection of human health. If PRGs are exceeded, a more refined, site-specific evaluation of potential risk may need to be performed.

The California EPA residential target level for lead of 130 mg/kg is being updated by the Department of Toxic Substances Control, and the new level is 300 mg/kg (personal communication between Dr. Kimi Klein/DTSC and Mr. Marco Lobascio/URSGWC, March 3, 1999). The reason for the revision is due to the change of the expected dietary concentration of lead in food with respect to the value recommended in the DTSC Supplemental Guidance for Human Health Multimedia Risk Assessment (1992). Based on the results of the FDA Market Basket Study (Gunderson, Ellis L. FDA Total Diet Study, July 1986-April 1991, Dietary Intakes of Pesticides, Selected Elements, and Other Chemicals. Journal of AOAC International, Vol. 78, No. 6, 1995), this concentration changes from 0.01 to 0.00256 mg-lead/kg-diet. URSGWC ran the LeadSpread model with the new value of dietary concentration (Appendix D), and obtained a residential soil lead concentration of 300 mg/kg instead of 130 mg/kg. The model estimates that this soil concentration is protective of children at the 99 percent confidence level. As shown in Appendix D, the estimated child target blood lead concentration of 0.01 mg-lead/dl-blood (DTSC 1992) is not exceeded when the on-site ballast rock concentration is 300 mg/kg.

For groundwater, detected concentrations were compared to drinking water criteria, represented by the MCL (DTSC 1994), the AL (DTSC 1994), or the Region 9 tap water PRGs (USEPA 1998), in order of priority. The MCL and AL are state and/or federal drinking water standards. The tap water PRGs are drinking water concentrations corresponding to a cancer risk of  $1 \times 10^{-6}$  (one-in-a-million) or to a unit (1.0) non-cancer hazard quotient for a residential exposure scenario. The screening used the drinking water standards due to the lack of groundwater criteria for uses other than potable. This was done only to focus on the most important chemicals, and does not imply that the shallow groundwater at the site should be considered a viable source of drinking water. In case of significant exceedance of the stringent drinking water standards, a more refined evaluation of the potential uses of the shallow groundwater may be warranted to

develop appropriate site-specific groundwater criteria that are protective of human health and the environment for the exposure scenarios corresponding to those uses.

### ***Evaluation of Ballast Rock Samples Lead Analysis Results***

Table 2-1 presents the detected ballast rock concentrations. Lead was detected in all of the 14 ballast rock samples, ranging in concentration from 7.4 mg/kg to 110 mg/kg (ballast rock sample SSPb-11). This concentration is well below the revised California EPA-modified residential PRG of 300 mg/kg. Additionally, based on the exploration results, it appears that the extent of the area where lead exceeded 300 mg/kg in the ballast rock near location SS-1 is small, since no exceedances were found in the surrounding areas. Based on the above considerations, lead detected in ballast rock does not warrant further consideration related to protection of human health.

### ***Evaluation of Shallow Groundwater Samples TPH Analysis Results***

The laboratory analyses results for the five samples taken in the vicinity of Boring B-10 where TPH-diesel was detected during the ESA are presented in Table 2-2. The grab groundwater samples were analyzed for TPH-gasoline, -diesel and -motor oil; BTEX and MtBE. TPH-diesel was detected in only one of the samples, at a concentration of 0.080 mg/l in Boring GWTPH-5. In regards to this detection, the laboratory reported that the detected compound was in the diesel range, but did not exhibit a pattern characteristic of a hydrocarbon. BTEX, TPH-gasoline, TPH-motor oil and MtBE were not detected in any of the samples.

Since TPH is a mixture of many hydrocarbons, water quality criteria or risk-based PRGs are not available. Therefore, the evaluation of detected TPH-diesel and TPH-motor oil was performed by comparing detected concentrations of relevant TPH indicator compounds, the BTEX and the PNAs, with their respective risk-based criteria (ASTM 1995). As reported in the previous sections, the BTEX compounds were non-detectable in the samples analyzed. Concerning the PNAs, we estimated the benzo(a)pyrene (BaP) and naphthalene expected water concentration corresponding to the maximum detected TPH-diesel concentration according to the California LUFT manual corrected as referenced in Calabrese (1993) and Guerin (1984). The estimated BaP concentration is  $0.07 \times 10^{-6} \text{ mg/kg-diesel} * 3.7 \text{ mg-diesel/L} = 0.26 \times 10^{-6} \text{ mg/l}$ , which is significantly lower than the detection limit of  $0.5 \times 10^{-4} \text{ mg/l}$ . The estimated naphthalene concentration is  $0.13 \times 10^{-2} \text{ mg/kg-diesel} * 3.7 \text{ mg-diesel/L} = 0.0048 \text{ mg/l}$ , which is lower than the tap water PRG of 0.0062 mg/l (there is no MCL for this chemical).

Based on the above considerations, it is concluded that TPHs detected in shallow groundwater at the site do not represent a human health concern. In addition, the RI investigation results indicate that the extent of shallow groundwater near B-10 that may be affected by TPH is not significant with respect to protection of human health and the environment.

### ***Evaluation of Shallow Groundwater Samples 1,2-DCE Analysis Results***

The laboratory analyses results for the seven (including one duplicate) grab groundwater samples taken in the vicinity of Boring B-6 where 1,2-DCE was detected during the ESA are presented in

Table 2-3. The samples were analyzed for VOCs using EPA Method 8260A. 1,2-DCE was not detected in any of the samples. Acetone was detected in three samples, ranging in concentration from 0.055 mg/l to 0.069 mg/l, one order of magnitude lower than the tap water PRG of 0.602 mg/l. Ethylbenzene was detected once at a concentration of 0.00058 mg/l (Boring GWDCE-5), barely exceeding the detection limit of 0.0005 mg/l, and well below the MCL of 0.7 mg/l. Total xylenes were detected in two samples at concentrations of 0.0013 mg/l (Boring GWDCE-1) and 0.0028 mg/l (Boring GWDCE-5), well below the MCL of 1.75 mg/l. The RI investigation results indicate that the extent of shallow groundwater near B-6 that may be affected by 1,2-DCE is not significant with respect to protection of human health and the environment.

During the ESA, 1,2-DCE was detected in one out of 13 samples at a concentration of 0.11 mg/l, exceeding the MCL of 0.006 mg/l. This exceedance is likely to be of minor concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water. Even in the unlikely case that the shallow groundwater may be used as a drinking water source, the 1,2-DCE detection should be averaged with the 12 non-detects to obtain a concentration representing the overall site conditions. Conservatively assuming that the non-detects are all at the detection limit of 0.0005 mg/l, the average 1,2-DCE concentration is 0.009 mg/l, exceeding the MCL of 0.006 mg/l by a factor of less than two. This exceedance is evaluated to be not of concern in terms of protection of human health, considering that the results of the RI confirmed the assumption of relatively limited extent of area impacted by 1,2-DCE.



**4.1 CONCLUSIONS**

Based upon our review of field exploration and laboratory analysis of ballast rock and groundwater samples collected at the Alameda Belt Line site during the environmental site assessment and the remedial investigation, we conclude the following:

***Ballast Rock Conditions***

The maximum concentrations of the chemical compounds detected in ballast rock samples did not exceed residential soil PRGs, with the exception of lead detected in shallow ballast rock at a maximum reported concentration of 380 mg/kg at location SS-1. This concentration exceeds the revised California EPA-modified residential PRG of 300 mg/kg. Additional exploration of the extent of the area where lead exceeded 300 mg/kg was performed. This extent was found to be very small, and a re-sample of the previous maximum concentration location (380 mg/kg at SS-1) resulted in a detection of only 7.4 mg/kg lead (see Figure 3). Based on the results of the exploration it is concluded that no remedial action related to lead in ballast rock near location SS-1 is warranted.

***Groundwater Conditions - TPH***

TPH-gasoline was detected at 0.43 mg/l, and TPH-diesel at 3.7 mg/l in groundwater from Boring 10. BTEX and PNAs, the "risk drivers" for TPH (ASTM 1995), were non-detectable. While there is no regulatory guidance (MCL, Action Level, or tap water PRG) for TPH diesel or gasoline in groundwater, further exploration of the extent of TPH impact was performed. The area where TPH was detected was found to be very small (see Figure 4), since no significant concentration was detected during the RI. Based on the results of the exploration it is concluded that no remedial action related to TPH in groundwater near location B-10 is warranted.

***Groundwater Conditions - 1,2-DCE***

The concentrations of VOCs in groundwater did not exceed either the California MCL or the USEPA PRG for tap water in groundwater samples from the exploratory borings, with the exception of 1,2-DCE. The laboratory reported that the concentration of 1,2-DCE (cis) in groundwater from Boring 6 exceeded the MCL of 0.006 mg/l. This exceedance is evaluated to be of minor concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water, and the lateral extent is very small (see Figure 5).

Even in the unlikely case the shallow groundwater may be used as a drinking water source, the 1,2-DCE detection should be averaged with the 12 non-detects to obtain a concentration representing the overall site conditions. Conservatively assuming that the non-detects are all at the detection limit of 0.0005 mg/l, the average 1,2-DCE concentration is 0.009 mg/l, exceeding the MCL of 0.006 mg/l by a factor of less than two. This exceedance is evaluated to be not of concern in terms of protection of human health, since the additional exploration activity confirmed the assumption of relatively limited extent of area impacted by 1,2-DCE.

***Overall Conclusions***

It is our opinion that this site may be used for the planned residential development. Since one tenant space was not accessible at this time, an inspection to confirm that the same conclusions apply to the space is recommended as soon as feasible.

**4.2 RECOMMENDATIONS**

Recommendations for the intended residential use of the site are:

***Ballast Rock and Shallow Groundwater***

No further action for ballast rock and shallow groundwater is recommended.

***Site Preparation - Removal of Rails and Ties and Tenant Materials***

We understand that it is the responsibility of the seller to have the tenant remove the stored vehicles, boats, equipment, wood and debris that remains in one of the tenant spaces. In addition, we understand that the seller will remove the existing tracks and wooden railroad ties. We recommend that the removal of rails and ties be observed and documented by a representative of Sun Country Partners, LLP. We also recommend that removal of the tenant materials be observed and documented by a representative of Sun Country Partners, LLP. A URSGWC representative should visit the site to document the removal of tenant materials and observe the surface conditions in the tenant space.

***Site Preparation - Removal of Maintenance Pits***

We recommend that a URSGWC representative observe the demolition of the two maintenance pits. Samples of soil should be collected from adjacent to these pits, and be analyzed in the laboratory for TPH-motor oil, diesel, gasoline and BTEX. If the field observations indicate evidence of petroleum in groundwater during the pit demolition, such as a visible sheen on the water in the excavations, samples of water from the excavations should be collected and submitted to the laboratory for analysis for TPH-motor oil, diesel, gasoline and BTEX. If laboratory analyses of soil samples indicate that soil adjacent to the pit walls is impacted with TPH exceeding 1,000 mg/kg, these soils should be excavated and either disposed off-site, or managed on-site by placement under pavement areas. The management of soils with potential TPH contamination should be approved by the County.

It would be extremely expensive, and perhaps impossible, to conduct a site reconnaissance or investigation which would ensure detection of materials at the subject property which now or in the future might be considered hazardous. Our failure to discover hazardous materials through a reasonable and mutually agreed-upon limited scope of work does not guarantee that hazardous materials do not exist on an area. Similarly, an area which in fact is unaffected by hazardous materials at the time of our assessment may later, due to natural phenomena or human intervention, become contaminated.

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- USEPA. 1994. National Guidelines for Inorganic Data Review. February.
- USEPA. 1998. Region 9 Preliminary Remediation Goals (PRGs). May.
- URSGWC 1999. Workplan for Phase II Site Characterization. February 10.
- URSGWC 1999. Phase II Site Characterization Report. March 9.
- URSGWC 1999. Workplan for Remedial Investigation. May 10.

**TABLE 2-1**  
**SUMMARY OF LABORATORY ANALYSIS RESULTS FOR LEAD IN BALLAST ROCK [mg/kg]**

Sample ID	ABL-SSPb-1	ABL-SSPb-2	ABL-SSPb-3	ABL-SSPb-4	ABL-SSPb-5	ABL-SSPb-6	ABL-SSPb-7	ABL-SSPb-8	ABL-SSPb-9	ABL-SSPb-10	ABL-SSPb-11	ABL-SSPb-13	ABL-SSPb-14	ABL-SSPb-16
Lead	7.4	22	16	83	17	50	39	10	36	17	110	56	66	7.8

**NOTE:**

Ballast rock samples are a composite of 1 foot of soil.

**TABLE 2-2**  
**SUMMARY OF LABORATORY ANALYSIS RESULTS FOR WATER SAMPLES**  
**ANALYZED FOR PETROLEUM PRODUCTS [mg/l]**

Sample ID	ABL-GWTPH-1	ABL-GWTPH-2	ABL-GWTPH-3	ABL-GWTPH-4	ABL-GWTPH-5
Sampling Depth [ft]	9.5	9.5	9.0	8.5	12.5
BTEX, TPHg, TPHd, TPHmo, MTBE by EPA Method 8020A					
<b>Benzene</b>	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
<b>Toluene</b>	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
<b>Ethylbenzene</b>	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
<b>Total Xylenes</b>	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
<b>TPH-Gasoline</b>	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
<b>TPH-Diesel</b>	< 0.05	< 0.05	< 0.05	< 0.081	<b>0.08 nhc</b>
<b>TPH-Motor Oil</b>	< 0.5	< 0.5	< 0.5	< 0.81	< 0.5
<b>MTBE</b>	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

**Notes:**

Results above detection limit are **bolded**.

nhc = Compounds reported are in the Diesel range, but they do not exhibit a pattern characteristic of hydrocarbon.

**TABLE 2-3**  
**SUMMARY OF LABORATORY ANALYSIS RESULTS FOR WATER SAMPLES**  
**ANALYZED FOR VOCs [mg/L]**

Sample ID	ABL-GWDCE-1	ABL-GWDCE-2	ABL-GWDCE-3	DUPLICATE ABL-GWDCE-3D	ABL-GWDCE-4	ABL-GWDCE-5	ABL-GWDCE-6
<b>Sampling Depth</b>	9.5	9.5	9.5	9.5	9.5	9.5	9.5
<b>VOCs by EPA Method 8260A (1,2-DCE and detected only)</b>							
<b>Acetone</b>	< 0.05	< 0.05	<b>0.069</b>	<b>0.064</b>	<b>0.055</b>	< 0.0005	< 0.05
<b>1,2-Dichloroethene (cis)</b>	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
<b>1,2-Dichloroethene (trans)</b>	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
<b>Ethylbenzene</b>	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	<b>0.00058</b>	< 0.0005
<b>Total Xylenes</b>	<b>0.0013</b>	< 0.001	< 0.001	< 0.001	< 0.001	<b>0.0028</b>	< 0.001

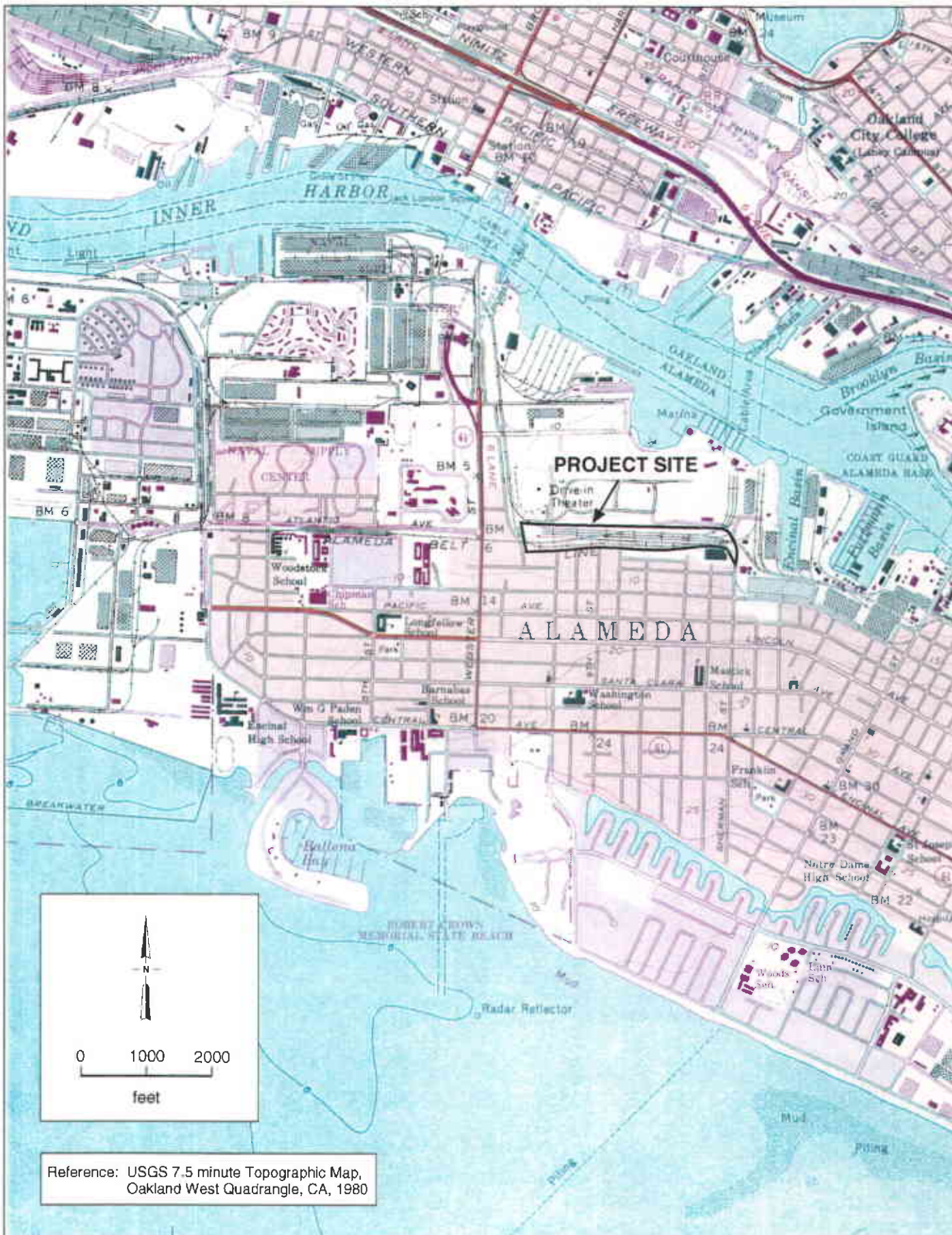
**Notes:**

Results above detection limit are **bolded**.

**TABLE 2-4  
NATURAL ATTENUATION PARAMETERS**

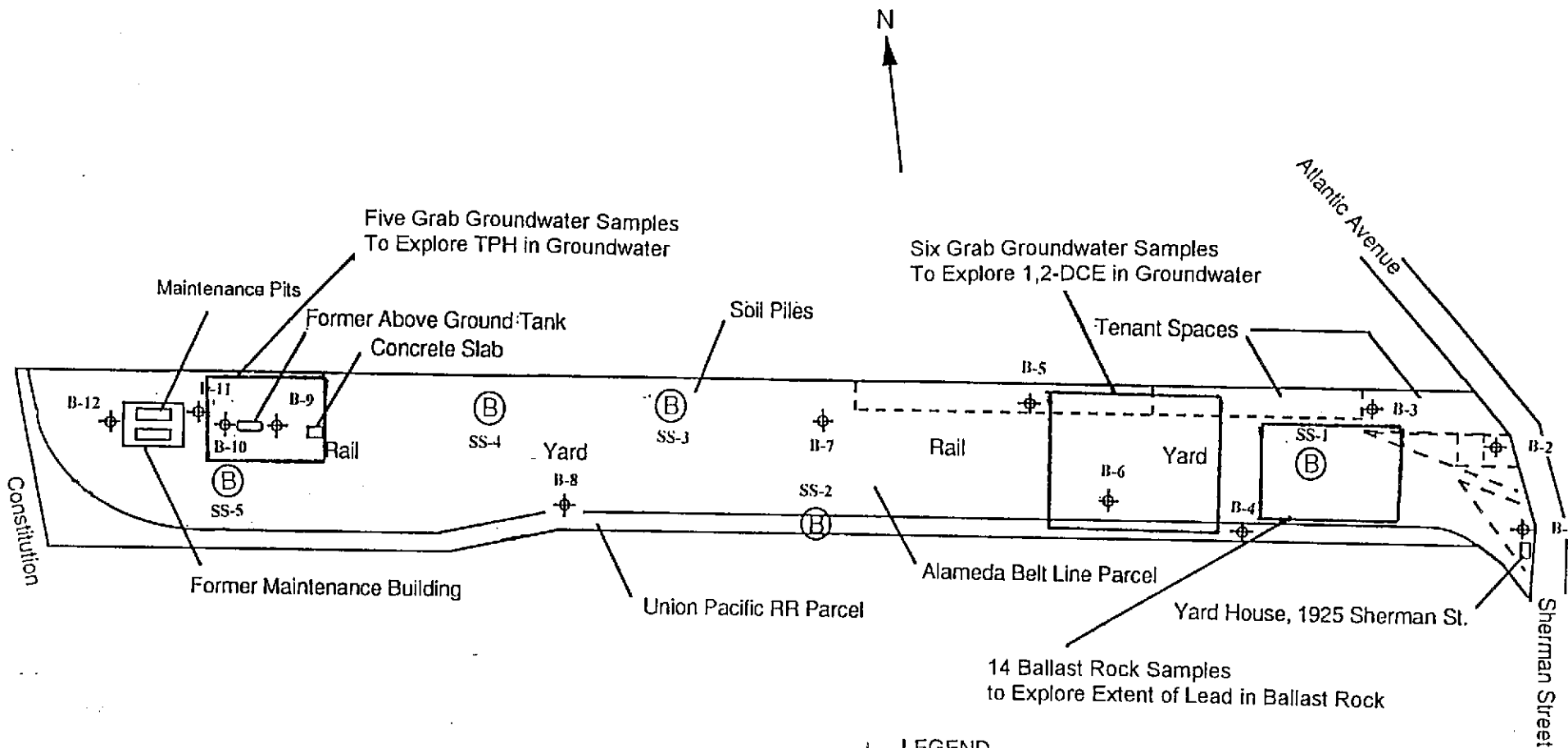
PARAMETER TYPE	PHYSICAL			CHEMICAL								BIOLOGICAL	
SAMPLE ID	Sample Depth [ft]	Temp. [deg. C]	Cond. [mS/cm]	pH [units]	Salinity [ppt]	TDS [kg/l]	Sulfate as SO <sub>4</sub> [mg/l]	Nitrate as NO <sub>3</sub> [mg/l]	Cl [mg/l]	CH <sub>3</sub> [mg/l]	TOC [mg/l]	D.O. [mg/l]	CO <sub>2</sub> [mg/l]
<b>SAMPLES COLLECTED FROM THE 1,2-DCE IMPACTED AREA</b>													
GWDCE-1	9.5	17.8	2.281	6.55	1.37	0.0017	--	--	420	0.026 J	7.76	4.56	120
GWDCE-2	9.5	17.81	0.82	6.96	0.47	0.0006	--	--	139	0.025 J	3.99	2.44	21
GWDCE-2 (DUPLICATE)	9.5	17.81	0.82	6.96	0.47	0.0006	--	--	--	--	--	2.44	25
GWDCE-3	9.5	22.17	24.44	6.29	15.78	0.0168	--	--	--	--	--	3.51	--
GWDCE-4	9.5	23.09	15.91	6.2	9.54	0.017	--	--	--	--	34	5.49	--
GWDCE-5	9.5	18.55	0.33	6.07	0.18	0.0003	--	--	--	--	--	1.01	--
GWDCE-6	9.5	18.97	1.77	6.88	1.68	0.002	--	--	--	--	--	0.77	--
<b>SAMPLES COLLECTED FROM THE TPH IMPACTED AREA</b>													
GWTPH-1	9.5	18.52	2.027	6.48	1.22	0.0015	68.3	< 1.0	--	10	--	0.09	510
GWTPH-2	9.5	18.84	0.942	6.83	0.55	0.0007	100	< 1.0	--	0.34	--	0.25	83
GWTPH-3	9.0	18.87	1.127	6.83	0.66	0.0009	--	--	--	--	--	0.29	--
GWTPH-4	8.5	20.35	0.745	7.04	0.39	0.0006	140	< 1.0	--	1.5	--	5.54	76
GWTPH-5	12.5	19.88	5.835	6.61	7.93	0.0085	--	--	--	--	--	2.55	--





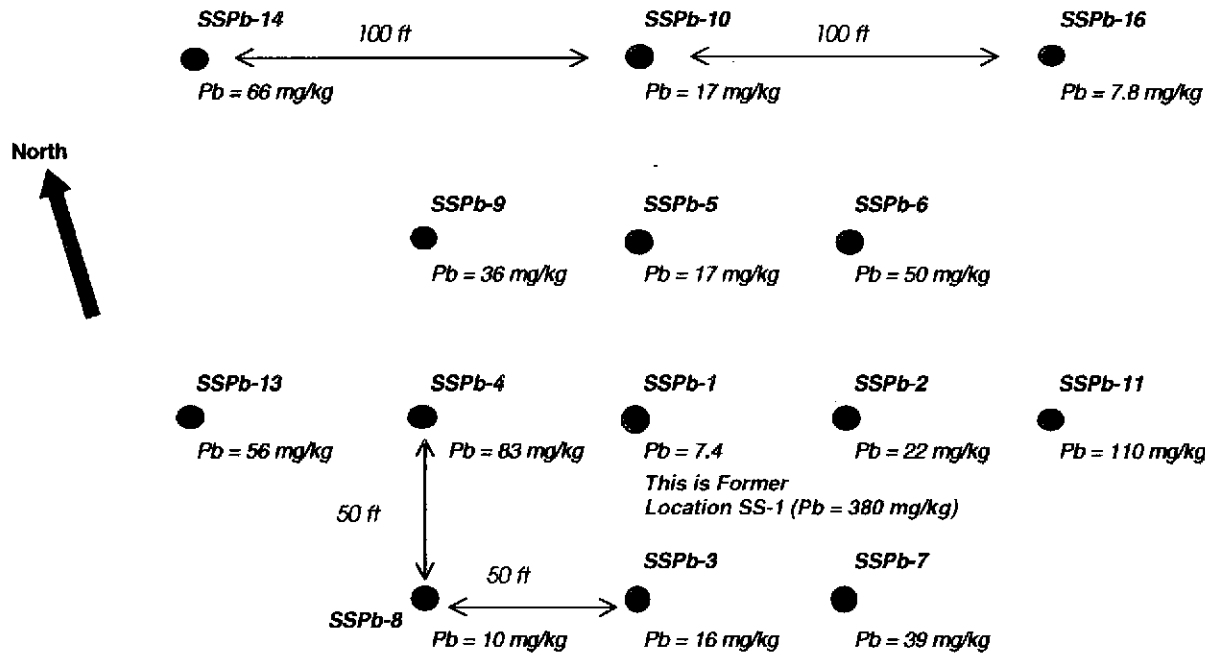
Reference: USGS 7.5 minute Topographic Map, Oakland West Quadrangle, CA, 1980

Project No. 5109967009.00	Sun Country Phase I and II	<b>VICINITY MAP ALAMEDA - CALIFORNIA</b>	February 6, 1999
<b>URS Greiner Woodward Clyde</b>			<b>Figure 1</b>



- LEGEND
- ⊕ ESA Soil Boring
  - Ⓟ ESA Shallow Soil Sample

Project No. 5109967009.00	Alameda Belt Line	REMEDIAL INVESTIGATION SAMPLING LOCATIONS	Figure 2
URS Greiner Woodward Clyde			

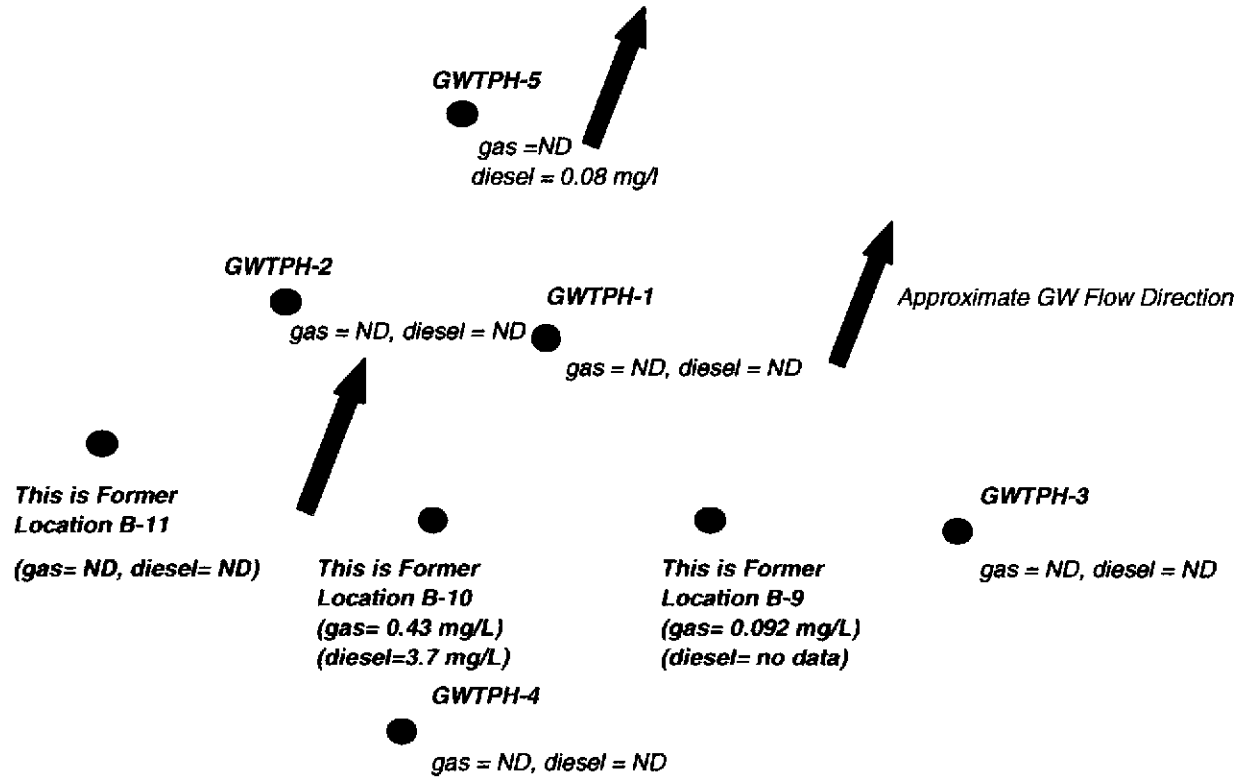


Note: See Figure 1 for reference.

NOT TO SCALE

Project No. 5109967009.00	Alameda Belt Line	ILLUSTRATION OF SAMPLING LOCATIONS - LEAD AREA	Figure 3
URS Greiner Woodward Clyde			

North



Note: See Figure 1 for reference.

NOT TO SCALE

Project No. 5109967009.00	Alameda Belt Line	ILLUSTRATION OF SAMPLING LOCATIONS - TPH-d and TPH-g AREA	Figure 4
URS Greiner Woodward Clyde			

North



This is Former  
Location B-5  
(1,2-DCE = ND)

GWDCE-5  
1,2-DCE = ND

GWDCE-6  
1,2-DCE = ND

GWDCE-1  
1,2-DCE = ND

Approximate GW Flow Direction

GWDCE-2  
1,2-DCE=ND

GWDCE-3  
1,2-DCE = ND

This is Former  
Location B-6  
(1,2-DCE = 0.11 mg/L)

This is Former  
Location B-4  
(1,2-DCE = ND)

GWDCE-4  
1,2-DCE =ND

Note: See Figure 1 for reference.

NOT TO SCALE

Project No. 5109967009.00	Alameda Belt Line	ILLUSTRATION OF SAMPLING LOCATIONS - 1,2-DCE AREA	Figure 5
URS Greiner Woodward Clyde			

**Appendix A**  
**Phase II Environmental Assessment Report**

**URS Greiner Woodward Clyde**

*A Division of URS Corporation*

500 12th Street, Suite 200  
Oakland, CA 94607-4014  
Tel: 510.893.3600  
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*Offices Worldwide*

March 9, 1999  
5109967009.00

Mr. Mike Valley  
Sun Country Partners, LLC  
5000 Hopyard Road, Suite 170  
Pleasanton, California 94588

**Subject: Phase II Environmental Assessment, Alameda Belt Line Yard  
Alameda, California**

Dear Mr. Valley:

We are pleased to present our Phase II Environmental Assessment report for the Alameda Belt Line Yard property, located at 1925 Sherman Street, Alameda, California. This study was prepared in accordance with the scope of work in our agreement dated January 26, 1999. Mr. Marco Lobascio, Ms. April Ann Giangerelli and Mr. Paul Scherbak assisted in the preparation of this report.

This report summarizes the findings and our conclusions and recommendations regarding the potential for a significant environmental concern at this site. Please call if you have any questions.

Sincerely,

URS Greiner Woodward Clyde



Albert P. Ridley, C.E.G.  
Project Manager

Attachment: Phase II ESA Report

**FINAL REPORT**

**PHASE II  
ENVIRONMENTAL ASSESSMENT  
22-ACRE FORMER ALAMEDA  
BELT LINE RAIL YARD  
ALAMEDA, CALIFORNIA**

*Prepared for*  
Sun Country Partners, LLC  
5000 Hopyard Road, Suite 170  
Pleasanton, California 94588

March 1999

***URS Greiner Woodward Clyde***

500 12th Street, Suite 200  
Oakland, California 94607

5109967009.00



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Appendix B	Phase II Work Plan Highlights
Appendix C	Boring Logs
Appendix D	Analytical Laboratory Reports
Appendix E	Lead Risk Assessment Spreadsheet

## 1.1 INTRODUCTION

This report presents the results of an Environmental Site Assessment (ESA) for soil and shallow groundwater performed by URS Greiner Woodward Clyde (URSGWC) at the Former Alameda Belt Line 22-acre Parcel (the Site), on behalf of Sun Country Partners, LLC (Sun Country). It is our understanding that Sun Country intends to redevelop the site for residential use.

The purpose of the ESA was to collect site-specific data and use the information to evaluate the potential for contamination of soil and groundwater that might impact the intended use of the site. The results of the evaluation will support decisions about the need (if any) and extent of further characterization and/or remedial actions for the protection of human health related to the future residential use of the site. The ultimate goal is to satisfy the requirements of the Alameda County Department of Environmental Health (the County) and the City of Alameda (the City) for residential development of the site.

The preliminary results of a Phase I Environmental Assessment were presented to Ms. Madhulla Logan, of the Alameda County Department of Environmental Health, on February 9, 1999. A Phase I report was later issued on February 12, 1999 (see highlights in Appendix A). Mr. Mike Valley, of Sun Country, and Messrs. Albert Ridley and Marco Lobascio of URSGWC met with Ms. Logan at the County's offices to discuss the plan for a residential development at the site and the proposed scope of the ESA work plan. The recommendations made by Ms. Logan were incorporated into the revised scope of work detailed in the work plan submitted to the County on February 10, 1999. The work plan highlights can be found in Appendix B of this report.

The site characterization activities described in this report involved:

- 1) record search and preparation of the field exploration work plan,
- 2) field exploration to collect soil and shallow groundwater samples,
- 3) laboratory analysis of the samples collected and QA/QC of the results, and
- 4) data interpretation and reporting.

The results of the record search activity were presented in the Phase I report (Appendix A). The field exploration work plan (URSGWC 1999) was developed based on these results (Appendix B). The field exploration sampling activities were conducted on February 15 and 16, 1999. Figure 2 shows the sampling locations. A total of 12 borings were drilled using a Geoprobe rig to collect soil and grab groundwater samples. The soil samples were collected from a depth of 0 to 1 foot and from 2 to 3 feet. A grab groundwater sample was collected from each of the borings. Surface soil samples were collected at five additional random locations. Section 2.1 describes the field exploration activities.

The results of the laboratory analyses performed on the samples are presented in Section 2.2. The samples were analyzed for TPH-diesel, TPH-gasoline, MTBE and BTEX, TPH-motor oil, VOCs, SVOCs, PCBs, and CAM 17 metals.

Section 3.0 presents the results of the data evaluation activity. Conclusions and recommendations are in Section 4.0. Limitations of this study are summarized in Section 5.0. References are in Section 6.0.

As mentioned above, highlights of the Phase I report and of the revised work plan are provided in Appendices A and B. Appendix C contains the boring logs. Analytical laboratory reports are in Appendix D. Appendix E contains the lead risk assessment spreadsheet.

## **1.2 SITE ENVIRONMENTAL SETTING**

The site is located in Alameda, California, occupying an area of approximately 22 acres. The site is about 3000 feet long (east to west) and about 450 feet wide (see Figure 1). The site consists of two parcels: the Alameda Belt Line Railroad owned the larger parcel (see Figure 1), and the Union Pacific Railroad owned the smaller parcel along the south edge of the site.

The site is bounded by the commercial office complex of Marina Village to the north, by Sherman Street to the east, and by residential properties on the southern side. The western boundary of the site is at Constitution Way. Most of the site is occupied by parallel spur tracks. Several fenced tenant spaces are located at Sherman Street, and along the north property line. Boats, trucks, wood, and metal scrap still exist at one tenant space at the north edge of the site. The former tenants have removed vehicles and equipment from the other spaces. The Yard House, a one story wood structure, is located at Sherman Street. Concrete foundations remain from a former above ground fuel tank and the former Maintenance Building at the western end of the site. Two concrete maintenance pits remain at the former Maintenance Building. At the bottom of one pit ponded water was observed. The other pit (northern) has been filled and paved over with asphaltic concrete.

According to the US Geological Survey (USGS, 1980) Oakland West 7.5 minute Quadrangle, the site is located on gently sloping level land, with an elevation of about 10 feet above mean sea level. The Marina Village development, located to the north of the site, was raised by filling. Therefore, the surface drainage is directed towards the west. The nearest body of water is the Encinal Basin, which is located about 800 feet northeast, and it is part of the Oakland Estuary.

The Alameda Belt Line Railway, initially known as the Industrial Railway or the Municipal Railway, was built in 1918 by the City of Alameda. Although it was to be operated by the City's Board of Public Utilities, it was operated from the beginning by Southern Pacific Railroad. In January of 1925 the City proposed to extend the Belt Line west of Grand Street to Encinal Terminal. Western Pacific and Santa Fe Railroad bought the existing tracks, and acquired additional land for the expansion. Construction was delayed by the objections of the residents and neighbors, but on February 1927 the City Council approved the Belt Line Extension. The Belt Line served local customers with spurs between Grand Avenue and Constitution Way.

After the maintenance building, located at the western end of the site near Constitution Way, burned to the ground around 1980, the Belt Line had only one principal building, the Yard House at 1925 Sherman Street. There are piles of soil and construction debris with asphaltic concrete and concrete on the north side of the site and west of the tenant spaces.

**2.1 SUMMARY OF FIELD INVESTIGATION ACTIVITIES**

The drilling activities were performed on February 15, 1999, under the supervision of an engineer from URSGWC. A total of 12 "direct push" soil borings were drilled at the site in the locations described in the work plan. Five bulk surface soil samples were collected at locations selected randomly in a grid pattern. The locations of the borings and the surface soil samples are shown in Figure 2.

At each boring location, a direct 2¼ -inch push sampler was advanced into the ground using the hydraulic capacity of the truck-mounted drill rig. At each boring location 2 soil samples were collected including a surface soil sample at a depth of 0- to 1- foot and a subsurface soil sample at a depth of 2 -to 3- feet (see boring logs provided in Appendix C). Soil samples were collected from within the sampler by removing the polycarbonate sample liner and capping each end with teflon tape and plastic endcaps. Sampling equipment was cleaned by pressure washing between sampling events.

All of the soil samples taken at a depth 0 to 1-foot from Borings 1 through 12 (Figure 2) were analyzed for TPH-gasoline and diesel, BTEX, MTBE, VOCs, PCBs and CAM 17 metals. The soil samples collected at 2- to 3-feet from Borings 1 through 12 were analyzed for TPH-diesel and motor oil, and CAM 17 metals. The 5 shallow soil samples, SS-1 through SS-5, were collected from the ballast rock, and were analyzed for TPH-diesel and motor oil, PCBs and CAM 17 metals.

The 5 shallow soil samples and Borings 6 and 7 were randomly located on a grid. Shallow soil sample SS-3 was collected from one of the soil piles to evaluate potential for petroleum product, solvent and metals contamination. Borings 1, 2, 3 and 5 were collected at the tenant spaces to investigate for potential contamination. Borings 4 and 8 and shallow soil sample SS-2 were collected to evaluate potential impacts from the adjacent Union Pacific Railroad parcel. Borings 11 and 12 were collected from each end of the former maintenance pit area and the former maintenance building at the west end of the site. Borings 9 and 10 were located on each end of the former above ground diesel storage tank.

Grab groundwater samples were collected from each boring following the installation of a temporary PVC well of 3/4-inch diameter. Groundwater samples were collected using clean teflon tubing and a peristaltic pump. Groundwater samples for metals were field filtered using 0.45µm disposable Quickfilter™ filters prior to transfer into sample bottles pre-preserved with nitric acid. The groundwater samples were analyzed for TPH-gasoline and diesel, BTEX, MTBE, VOCs and CAM 17 metals. Most borings had a significant recovered volume of groundwater available for sampling, however heavy silting of Boring 9 prevented the pumping of enough volume to complete the analytical suite.

Soil and groundwater samples were sealed, individually labeled and stored on ice in an ice chest prior to transportation to Chromalab Analytical Laboratory of Pleasanton, California. Chain-of-custody procedures were used during sampling and transport of these samples.

Drill cuttings from the soil borings were collected and stored on-site in a 20 gallon drum. The drum was appropriately labeled and sealed for proper handling. A single composite sample of

the material within the drum, soil sample DC01, was collected and submitted for analysis. Following receipt of the analytical results the drum shall be appropriately disposed by the drilling subcontractor.

### ***Observations of Subsurface Conditions***

On-site materials were predominantly a silty sand overlain by sandy clay fill and coarse ballast gravel at the surface, as shown on the boring logs in Appendix C. Surface soils in the vicinity of samples SS-1, SS-2 and SS-5 were predominantly a coarse rail ballast gravel with silty sand at approximately 4- to 12-inches below the surface.

Stockpiled fill materials on the northeastern side of the site in the vicinity of surface sample location SS-3 were predominantly a sandy clay with large fragments of green glass, brick and minor charcoal fragments. Surface soils at location SS-4 were predominantly a dense, cohesive, clay with minor gravel and sand.

The depth to groundwater ranged from about one foot to a depth of about four feet. The shallow groundwater conditions may have been a result of recent precipitation during this winter season. The depth to groundwater is noted on the boring logs in Appendix C.

## **2.2 ANALYTICAL RESULTS**

This section describes the results of the laboratory analyses performed on the samples collected at the site on February 15 and 16, 1999. Soil and groundwater samples were analyzed by Chromalab, Inc. of Pleasanton, California for TPH-gasoline, BTEX and MTBE, TPH-motor oil, and TPH-diesel by EPA Method 8020A; VOCs by EPA Method 8260; PCBs by EPA Method 8080A; and CAM 17 metals by EPA Method 3050A/6010A/7471A.

### ***Soil Analytical Results***

Table 2-1 presents the results of the laboratory analyses performed on the soil samples from the site. The table is organized by analysis type and sample ID, and only those VOCs, PNAs, PCBs and CAM 17 metals detected in at least one sample are listed on the table. Results above the detection limit are bolded. A dash in the table indicates that the sample was not analyzed for the particular chemical.

Using EPA Method 8020A, TPH-diesel was detected in 21 of the 24 soil samples, ranging in concentration from < 1 mg/kg to 39 mg/kg (Boring 1). TPH-motor oil was detected in 5 of the 24 soil samples, and concentrations ranged from < 50 mg/kg to 350 mg/kg (Boring 1). Since polynuclear aromatic hydrocarbons (PNAs) are often associated with elevated detections of TPHs, the shallow soil sample from Boring 1 was analyzed for PNAs by EPA Method 8270A. However, PNAs were not detected in this sample. TPH-diesel was detected in 2 of the 5 shallow grab samples, and concentrations ranged from < 1 mg/kg to 11 mg/kg (SS-3). TPH-motor oil was not detected in the shallow grab samples. TPH-gasoline and BTEX were not detected in any of the soil samples.

Using EPA Method 8260A, VOCs were not detected in any of the soil samples. EPA Method 8080A was used to detect for PCBs, and only Aroclor 1260 was detected in shallow soil sample SS-1 at a concentration of 0.11 mg/kg. Using EPA Methods 3050A/6010A/7471A, the following CAM 17 metals were detected in nearly all of the soil samples: antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, vanadium, zinc and mercury. The metals appear to be distributed throughout the surface soils of the site at background levels, except for lead, which was detected in shallow soil sample SS-1 at a concentration of 380 mg/kg. A citrate waste extraction test (WET) and a deionized (D.I.) water WET test were performed on the 3 shallow soil samples with lead concentrations that exceeded 50 mg/kg. The following concentrations of lead were detected in the citrate WET: Boring 5 < 1 mg/l, Boring 11 = 2.2 mg/l and shallow soil sample SS-1 = 33 mg/l. The D.I. water WET analysis reported that concentrations of lead in all 3 samples were below detection levels.

### ***Shallow Groundwater Analytical Results***

Table 2-2 presents the laboratory analyses results for the water samples from the site. The table is organized by analysis type and sample number, and only the VOCs and CAM 17 metals detected in at least one sample are listed on the table. Results above the detection limit are bolded, and a dash indicates that the sample was not analyzed for the particular chemical. The row "Depth to Water" indicates the depth when water was first encountered during drilling.

EPA Method 8020A was used to analyze for TPH-diesel, TPH-gasoline, BTEX and MTBE in groundwater. A total of 13 water samples (including 1 duplicate sample) were analyzed using EPA Method 8020A. Seven of the water samples detected TPH-gasoline at concentrations ranging from 0.052 mg/l to 0.43 mg/l (Boring 10). TPH-diesel was detected in 3 of the 12 water samples analyzed for diesel, and concentrations ranged from 0.099 mg/l to 3.7 mg/l (Boring 10). MTBE was detected in 2 of the 13 water samples at concentrations of 0.062 mg/l and 0.017 mg/l (Borings 1 and 9, respectively). A silica gel cleanup analysis using EPA Method 8015M was performed on the groundwater sample from Boring 10. This analysis was performed to evaluate if the TPH-diesel concentration of 3.7 mg/l was due to natural organics in the groundwater or a spill of diesel. The silica gel cleanup analysis detected a concentration of 2.4 mg/l TPH-diesel in groundwater from Boring 10, indicating that the detected concentration was TPH as diesel.

EPA Method 8260A was used to analyze for VOCs in the groundwater samples. Carbon disulfide, 1,2-dichloroethene (cis), 1,2-dichloroethene (trans), trichloroethene and total xylenes were found in at least one groundwater sample. Carbon disulfide was found in Borings 1 and 5 at concentrations of 0.0012 mg/l and 0.0024 mg/l, respectively. The Boring 6 groundwater sample had detections of 1,2-dichloroethene (cis) at 0.11 mg/l, 1,2-dichloroethene (trans) at 0.0042 mg/l, and trichloroethene at 0.0029 mg/l. Total xylenes were detected in Boring 8 at a concentration of 0.0024 mg/l. Using EPA Method 3050A/6010A/7471A, the following CAM 17 metals were detected in nearly all of the groundwater samples: antimony, barium, cobalt, copper, molybdenum, nickel, selenium, vanadium and zinc.

### 2.3 DATA VALIDATION

A quality assurance evaluation of the analytical data provided by Chromalab Analytical Laboratory from soil and groundwater samples collected at the Alameda Belt Line site, Alameda California during February of 1999 was undertaken to confirm the accuracy and precision of the laboratory results for use in this report. A total of 24 soil samples (including a soil sample from soil cuttings produced during the investigation), 5 shallow soil samples, and 12 groundwater samples were collected, in addition to a trip blank and a duplicate for groundwater.

Upon receipt of the final laboratory reports, the following steps were taken in accordance with the EPA guidance for data validation. Sample custody documents were cross-checked with laboratory reports for sampling dates and required analyses. Holding times were calculated using analysis date, preparation date, and/or test date in relation to sampling date. The results were reviewed for QA/QC elements of precision, accuracy, reporting limits, and contamination. Also noted were any deviations from plans, protocols, or data quality objectives. Problems and irregularities were discussed with the laboratory, which printed revised reports as necessary. The following QA/QC parameters were reviewed during data evaluation.

- Chains of Custody - Verify that requested analyses were performed and that sampling dates are accurately noted in lab reports.
- Holding Times - Check for holding times in excess of EPA guidelines.
- Method Blanks - Review blank analyses for evidence of potential contamination.
- Matrix Spikes - Review spike and spike duplicate recoveries and relative percent differences (RPDs) as a check for analytical precision and accuracy.
- Laboratory Control Samples - Review control and control duplicate recoveries and relative percent differences (RPDs) as a check for analytical accuracy and precision.
- Surrogates - Review surrogate recoveries as a check for sample specific accuracy.
- Field Blanks - Review field blanks for evidence of potential contamination.
- Field Duplicates - Review field duplicate analyses for agreement of results as a check for analytical precision.
- Trip Blank - Review trip blank as a check for good field technique.

#### ***Chains of Custody***

All analyses were performed as requested and samples were adequately accounted for throughout the transfer from the field to the laboratory.

#### ***Holding Times***

Holding time (the time between sampling and sample preparation/analysis) was not exceeded in any case.



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## Summary of Field Sampling and Laboratory Analyses

### Method Blanks

Method blanks did not reveal any laboratory contamination.

### Matrix Spikes

The recoveries for 1,1-dichloroethene and toluene (133% and 244% respectively) for batch 17524 (VOCs) were out of control limits (65%-135%). All other batch QC elements were in control for the associated samples. Several MS/MSD recoveries were outside control limits for TPH-gasoline, BTEX, and MTBE analyses and are summarized in the table below. Volatiles are not qualified based on MS/MSD alone and no qualification was judged necessary for the associated samples.

#### Out of Control MS/MSD Recoveries for TPH-g, BTEX, and MTBE Analyses

QC Batch	Sample ID	Analyte	MS % Rec.	MSD % Rec.	RPD	Notes
Control Limits for Soil			65-135	65-135	<35	
17514	ABL-SB-12-0-1	gasoline	51.7	52.2	0.96	no qual
		benzene	62.4	62.0	0.64	no qual
		toluene	57.7	54.6	5.52	no qual
		ethylbenzene	51.1	47.4	7.51	no qual
		xylenes	50.7	46.1	9.50	no qual
Control Limits for Water			65-135	65-135	<20	
17501	PZ-1	MTBE	64.5	74.6	14.5	no qual
17547	BE 2/18	xylenes	68.0	87.3	24.8	no qual

Several MS/MSD recoveries were outside control limits for the metals analyses and are summarized in the table on the next page. These irregularities may be due to matrix interference or matrix heterogeneity. Associated data were qualified as noted in the table. All other QC elements were in control for the affected samples and these discrepancies are not expected to invalidate the data.

## Out of Control MS/MSD Recoveries for Metals Analyses

QC Batch	Sample ID	Analyte	MS % Rec.	MSD % Rec.	RPD	Notes
Control Limits			80-120	80-120c	<20	
17453	MW-2	Antimony	53.8	55.8	3.65	J or UJ
		Barium	60.0	38.0	44.9	no qual
		Selenium	78.4	76.5	2.45	J or UJ
		Thallium	75.3	75.5	0.26	J or UJ
		Zinc	80.0	61.0	27.0	no qual
17454	ABL-SB-9-2-3	Antimony	78.4	76.7	2.19	J or UJ
		Selenium	80.6	77.5	3.92	J or UJ
		Zinc	81.4	78.7	3.37	J or UJ
17459	ST2	Antimony	52.9	47.4	11.0	J or UJ
		Lead	151	108	33.2	J or UJ
		Molybdenum	77.0	75.7	1.70	J or UJ
		Selenium	79.5	77.7	2.29	J or UJ
		Silver	74.9	78.7	4.95	J or UJ
		Zinc	89.0	79.0	11.9	J or UJ

no qual -- not qualified because spike concentration was less than 4x sample concentration

**Laboratory Control Samples**

Laboratory control samples (LCS) were periodically analyzed. All LCS and LCS duplicates analyzed had acceptable recoveries.

**Surrogates**Surrogates

Surrogates (1,4-bromofluorobenzene, 1,2-dichloroethane-d4, and toluene-d8) were added to every sample analyzed for volatile organics. Surrogate recoveries for 4-bromofluoro-benzene were out of control for the MS/MSD associated with batch 17552. However, volatile organics are not qualified based on MS/MSD alone and no qualification was judged to be necessary in this case.

Surrogates (trifluorotoluene and 4-bromofluorobenzene) were added to every sample analyzed for TPH-gasoline, BTEX and MTBE. Surrogate recoveries were below control limits for several

## SECTION TWO

## Summary of Field Sampling and Laboratory Analyses

samples and were qualified as estimated J or UJ to indicate potential low bias. The out of control surrogates are summarized in the table on the next page.

### Out of Control Surrogate Recoveries for TPH-g, BTEX, MTBE Analyses

Sample ID	Surrogate	% Recovery	Control Limits	Notes
ABL-SB-2-0-1	4-bromofluorobenzene	55.8	58-124	J or UJ
ABL-SB-5-0-1	4-bromofluorobenzene	37.1	58-124	J or UJ
ABL-SB-11-0-1	4-bromofluorobenzene	33.7	58-124	J or UJ
ABL-SB-12-0-1	4-bromofluorobenzene	41.1	58-124	J or UJ
ABL-GW-4	trifluorotoluene	23.9	58-124	J or UJ
	4-bromofluorobenzene	25.1	50-150	J or UJ

A surrogate (o-terphenyl) was added to every sample analyzed for TPH-diesel. Surrogate recovery for sample ABL-GW-10 was high (306%) compared to control limits (60%-130%) and sample results were qualified as estimated J to indicate potential high bias.

Surrogates (decachlorobiphenyl and 2,4,5,6-tetrachloroxyl) were added to every sample analyzed for PCBs. All surrogate recoveries for PCBs were acceptable.

### Field Duplicates

One set of groundwater duplicates was collected and analyzed (ABL-GW-1 and DUPGW01) for TPH-diesel; TPH-gasoline, BTEX, and MTBE; VOCs; and metals. The results and calculated RPDs are summarized in the attached table. In general, agreement between the duplicates is reasonable. These discrepancies are not expected to invalidate the data.

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## Summary of Field Sampling and Laboratory Analyses

Relative Percent Differences for Water Duplicate Taken on February 15, 1999

Analyte	Units	RL	ABL-GW-1	DUPGW01	RPD
Petroleum Hydrocarbons					
TPH-D	ug/L	50	nd	nd	nc
TPH-G	ug/L	50	79	52	10.3
Benzene	ug/L	0.50	nd	nd	nc
Toluene	ug/L	0.50	nd	nd	nc
Ethylbenzene	ug/L	0.50	nd	nd	nc
Xylenes	ug/L	0.50	nd	nd	nc
MTBE	ug/L	5.0	62	nd	nc
Volatiles	ug/L	0.5-50	nd	nd	nc
Carbon disulfide	ug/L	1.0	nd	1.2	nc
Metals					
Antimony	mg/l	0.0050	nd	nd	nc
Arsenic	mg/l	0.0050	nd	nd	nc
Barium	mg/l	0.0050	0.081	0.026	25.7
Beryllium	mg/l	0.0050	nd	nd	nc
Cadmium	mg/l	0.0020	nd	nd	nc
Chromium	mg/l	0.0050	nd	nd	nc
Cobalt	mg/l	0.0050	nd	nd	nc
Copper	mg/l	0.0050	0.023	nd	nc
Lead	mg/l	0.0050	nd	nd	nc
Mercury	mg/l	0.0005	nd	nd	nc
Molybdenum	mg/l	0.0050	nd	nd	nc
Nickel	mg/l	0.0050	0.053	0.0083	36.5
Selenium	mg/l	0.0050	nd	0.043	nc
Silver	mg/l	0.0050	nd	nd	nc
Thallium	mg/l	0.0050	nd	nd	nc
Vanadium	mg/l	0.0050	nd	0.016	nc
Zinc	mg/l	0.010	0.011	nd	nc

RL = Reporting Limit

## **SECTION TWO**

## **Summary of Field Sampling and Laboratory Analyses**

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RPD = Relative Percent Difference (the difference between the two concentrations divided by the average of the two concentrations)

nd = Not detected above the reporting limit

nc = Not calculated due to nd status of at least one of the samples being compared

### ***Trip Blanks***

One trip blank was sampled and analyzed for VOCs. Target analytes were not detected in the trip blank.

### ***Field QA/QC***

A groundwater duplicate sample (DUPGW01) was collected during the groundwater sampling at Boring 5 and submitted for the same analyses as for the Boring 5 groundwater sample. A laboratory prepared trip blank (TR01) was submitted for VOC analysis only. The trip blank is used to assess the potential for sample contamination due to sample storage and analysis within the laboratory.

### ***Summary***

The data reviewed are of acceptable precision and accuracy for use in this soil and groundwater assessment report.

This section describes the evaluation of the results of the field sampling and laboratory analysis activities. The purpose of this evaluation is to indicate if soil and groundwater conditions may be of concern regarding protection of human health and the environment based on long-term exposure to low-levels of contaminants. Considering that the site is planned for residential development, the results of this evaluation will be used to support decisions about the need (if any) and extent of further characterization and/or remedial actions necessary for the future land use.

For soil, the evaluation was based on comparing detected soil concentrations to the U.S. EPA Region 9 Preliminary Remedial Goals (PRGs). For groundwater, detected concentrations were compared to drinking water criteria.

### ***Evaluation of Soil Samples Results***

Table 3-1 presents the comparison of detected soil concentrations to the PRGs. The maximum detected concentration was conservatively selected for the comparison. The table also presents the number of times the chemicals were analyzed, the number of times they were detected in the soil samples, the average detected concentration, and the sample location where the maximum concentration was detected.

The PRGs are conservative, non-site-specific, risk-based concentrations corresponding to a cancer risk of one-in-a-million or a unit (one) non-cancer hazard quotient for residential or commercial/industrial receptor exposure scenarios (USEPA 1998). The soil PRGs assume exposure to chemicals due to incidental ingestion, dermal contact, inhalation of particulates, and inhalation of vapor emissions into ambient air (VOCs only). For instance, a very conservative hypothesis of the soil PRGs is that there is and will be no barrier between the contaminated soil and the receptor. Due to their conservatism, the PRGs are used as screening-level criteria. If representative site concentrations do not exceed PRGs, and the site has been adequately investigated, no further action is generally warranted in terms of protection of human health. If PRGs are exceeded, a more refined, site-specific evaluation of potential risk may need to be performed.

As shown on Table 3-1, arsenic and lead maximum detected concentrations were the only two exceedences of residential soil PRGs. These exceedences are discussed below.

The average arsenic detected concentration was 3.9 mg/kg. This metal was detected in 26 out of 30 samples. As shown in Table 2-1, sample location SB-8 is the only one with detected concentration above 20 mg/kg. These detected arsenic concentrations and the associated variability are within the expected natural background in Northern California soil. This conclusion is based on the results of background studies (Shaklette, H. T., et al., "Elemental Composition of Surficial Material in the Conterminous United States", 1971), (USGS Professional Paper "Geochemistry of Some Rocks, Soil, Plant and Vegetables in the Conterminous United States", 1975), (C. Scott, "Background Metal Concentrations in Soils in Northern Santa Clara County, California", MS Thesis, USF 1991.). These studies indicate that in Santa Clara County the arsenic mean soil concentration was found to be about 2.9 mg/kg, and the upper range of arsenic soil background concentrations in the Western U.S. is well above 150

mg/kg, with a mean of 11 mg/kg. Recently, background threshold levels in the order of 15 to 20 mg/kg were approved by Cal/EPA and other local Agencies for Bay Area sites such as the Hamilton Army Airfield in Novato, the FMC site in San Jose, and the San Francisco International Airport in San Mateo. In the PRG document (USEPA 1998), the Agency states that the published PRGs are not applicable in case they exceed the soil background concentration. Based on the above considerations, it is concluded that arsenic detected in the soil samples does not warrant any further consideration from the standpoint of human health protection.

The average detected soil lead concentration was 36 mg/kg. This concentration is well below the California-modified residential soil PRG of 130 mg/kg (USEPA 1998). This indicates that lead is not a concern when considered on a site-wide basis. However, the mean lead concentration is higher than the concentration of 11.5 mg/kg expected for soil lead background according to the Santa Clara study (Scott 1991). The reported soluble lead concentration from the Waste Extraction Test of sample SS-1 is 33 mg/l, which exceeds the STLC of 5 mg/l and would characterize this soil as a hazardous waste. However, reported soluble lead is less than the reporting limit of 0.5 mg/l using de-ionized water for the Waste Extraction Test.

The California EPA residential target level of 130 mg/kg is being updated by the Department of Toxic Substances Control, and the new level is 300 mg/kg (personal communication between Dr. Kimi Klein/DTSC and Mr. Marco Lobascio/URSGWC, March 3, 1999). The reason for the revision is due to the change of the expected dietary concentration of lead in food with respect to the value recommended in the DTSC Supplemental Guidance for Human Health Multimedia Risk Assessment (1992). Based on the results of the FDA Market Basket Study (Gunderson, Ellis L. FDA Total Diet Study, July 1986-April 1991, Dietary Intakes of Pesticides, Selected Elements, and Other Chemicals. Journal of AOAC International, Vol. 78, No. 6, 1995), this concentration changes from 0.01 to 0.00256 mg-lead/kg-diet. URSGWC ran the LeadSpread model with the new value of dietary concentration (Appendix E), and obtained a residential soil lead concentration of 300 mg/kg instead of 130 mg/kg. The model estimates that this soil concentration is protective of children at the 99 percent confidence level. As shown in Appendix E, the estimated child target blood lead concentration of 0.01 mg-lead/dl-blood (DTSC 1992) is not exceeded when the on-site soil concentration is 300 mg/kg.

The maximum detected concentration of 380 mg/kg at location SS-1 warrants further consideration due to the exceedance of the revised California PRG of 300 mg/kg. The California PRG is based on very stringent exposure assumptions about children's potential intake and bioavailability of lead in soil. It should also be noted that the Federal PRG for lead of 400 mg/kg is not exceeded in the site samples. One of the main assumptions of the lead exposure model used to develop the PRGs is that children are exposed by direct contact (including incidental ingestion and dermal contact) with soil containing a constant lead concentration for six years. This can happen only in case the area of soil affected by lead is sufficiently large, which corroborates the assumption that all of the soil ingested is impacted by lead. In addition, it is assumed that there are and will be no barriers limiting the potential for direct contact exposure with the affected soil. Based on these considerations, it is concluded that the soil near location SS-1 needs to be delineated to evaluate the significance of the exceedance of the lead PRG. Depending on the extent of the delineated area impacted by lead it will be possible to make recommendations about the need (if any) for remedial action.

Since TPH is a mixture of many hydrocarbons, a risk-based PRG is not available. Therefore, the evaluation of detected TPH-diesel and TPH-motor oil was performed by comparing detected concentrations of relevant TPH indicator compounds with their respective PRGs, namely the BTEX and the PNA compounds (ASTM 1995). As reported in the previous sections, the BTEX and PNA compounds were non-detectable in the samples analyzed. Therefore, it is concluded that soil TPHs detected at the site do not represent a concern to human health.

### ***Evaluation of Shallow Groundwater Samples Results***

For shallow groundwater, the maximum detected concentration was compared to the MCL (DTSC 1994), the AL (DTSC 1994), or the Region 9 Tap Water PRGs (USEPA 1998), in order of priority. The MCL and AL are state and/or federal drinking water standards. The Tap Water PRGs are drinking water concentrations corresponding to a cancer risk of  $1 \times 10^{-6}$  (one-in-a-million) or to a unit (1.0) non-cancer hazard quotient for a residential exposure scenario. The screening used the drinking water standards due to the lack of groundwater criteria for uses other than potable. This was done only to focus on the most important chemicals, and does not imply that the shallow groundwater at the site should be considered a viable source of drinking water. In case of significant exceedance of the stringent drinking water standards, a more refined evaluation of the potential uses of the shallow groundwater may be warranted to develop appropriate site-specific groundwater criteria that are protective of human health and the environment for the exposure scenarios corresponding to those uses.

Table 3-2 presents the comparison of the maximum detected groundwater concentration to water quality criteria. As shown on the table, MTBE, 1,2-dichloroethene (1,2-DCE), antimony, nickel, and selenium maximum detected concentration exceeded the drinking water standards.

MTBE was detected in 2 of the 13 samples at concentrations of 0.062 and 0.017 mg/l, only marginally exceeding the AL of 0.035 mg/l. This exceedance is evaluated to be of no concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water.

1,2-DCE was detected in one out of 13 samples at a concentration of 0.11 mg/l, exceeding the MCL of 0.006 mg/l. This exceedance is likely to be of minor concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water. Moreover, there is evidence of natural attenuation occurring in that area of the site. Evidence shows that reductive dechlorination of TCE into 1,2-DCE (cis) and 1,2-DCE (trans) is occurring. This process generally occurs in an anaerobic, methane-rich environment by methanogenic bacteria. However, additional delineation and confirmation needs to be performed near location GW-6 to support the above conclusion.

Even in the unlikely case that the shallow groundwater may be used as a drinking water source, the 1,2-DCE detection should be averaged with the 12 non-detects to obtain a concentration representing the overall site conditions. Conservatively assuming that the non-detects are all at the detection limit of 0.0005 mg/l, the average 1,2-DCE concentration is 0.009 mg/l, exceeding the MCL of 0.006 mg/l by a factor of less than two. This exceedance is evaluated to be not of concern in terms of protection of human health, provided that the recommended additional



delineation activity confirms the assumption of relatively limited extent of area impacted by 1,2-DCE.

Antimony was detected in 3 out of 12 samples at concentrations of 0.0098, 0.0084, and 0.0069 mg/l, only marginally exceeding the MCL of 0.006 mg/l. This exceedance is evaluated to be of no concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water.

Nickel was detected in one out of 12 samples at a concentration of 0.27 mg/l, slightly exceeding the MCL of 0.1 mg/l. This exceedance is evaluated to be of no concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water.

Selenium was detected in one out of 12 samples at a concentration of 0.051 mg/l, barely exceeding the MCL of 0.05 mg/l. This exceedance is evaluated to be of no concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water.

Since TPH is a mixture of many hydrocarbons, water quality criteria or risk-based PRGs are not available. Therefore, the evaluation of detected TPH-diesel and TPH-motor oil was performed by comparing detected concentrations of relevant TPH indicator compounds, the BTEX and the PNAs, with their respective risk-based criteria (ASTM 1995). As reported in the previous sections, the BTEX compounds were non-detectable in the samples analyzed. Concerning the PNAs, we estimated the benzo(a)pyrene (BaP) and naphthalene expected water concentration corresponding to the maximum detected TPH-diesel concentration according to the California LUFT manual corrected as referenced in Calabrese (1993) and Guerin (1984). The estimated BaP concentration is  $0.07 \times 10^{-6} \text{ mg/kg-diesel} * 3.7 \text{ mg-diesel/L} = 0.26 \times 10^{-6} \text{ mg/l}$ , which is significantly lower than detection limit of  $0.5 \times 10^{-4} \text{ mg/l}$ . The estimated naphthalene concentration is  $0.13 \times 10^{-2} \text{ mg/kg-diesel} * 3.7 \text{ mg-diesel/L} = 0.0048 \text{ mg/l}$ , which is lower than the tap water PRG of 0.0062 mg/l (there is no MCL for this chemical). Based on the above considerations, it is concluded that TPHs detected in shallow groundwater at the site do not represent a human health concern. Additional delineation of TPH in groundwater may be required by the County for documentation purposes.

#### 4.1 CONCLUSIONS

Based upon our review of field exploration and laboratory analysis of soil and groundwater samples collected at the Alameda Belt Line site during this environmental site assessment, we conclude the following:

##### ***Soil Conditions***

The laboratory analyses results indicate that:

- The VOCs and the SVOCs, in particular BTEX and PNAs, were not detectable in the soil samples.
- The maximum reported concentration of 350 mg/kg Total Petroleum Hydrocarbons (TPH) as motor oil in shallow soil at Boring 1 and 39 mg/kg TPH-diesel are below the Alameda County guidance of a maximum of 1,000 mg/kg TPH motor oil in soil. In addition, the BTEX and the PNAs, that are the "risk drivers" for TPH (ASTM 1995), were non detectable. Therefore, it is concluded that TPH in soil does not warrant further consideration concerning protection of human health from potential exposure to residual chemicals in soil.
- The reported concentrations of arsenic with a maximum detection of 22 mg/kg in shallow soil from Boring 8 are within the expected arsenic background range, based upon our review of the background metals concentrations for this region. Therefore, no further consideration is warranted for arsenic in soil.
- The maximum concentrations of the other chemical compounds detected in soil samples did not exceed residential soil PRGs, with the exception of lead detected in shallow soil at a maximum reported concentration of 380 mg/kg at location SS-1. This concentration exceeds the revised California EPA-modified residential PRG of 300 mg/kg. Additional delineation of the extent of the area where lead exceeds 300 mg/kg is warranted. Based on the results of the delineation it will be possible to draw conclusions about the need (if any) for remedial actions related to lead in soil near location SS-1.

##### ***Groundwater Conditions***

The laboratory analyses results indicate that:

- The BTEX and the PNAs were not detectable in the shallow groundwater samples, except for an isolated detection of total xylenes (well below the MCL) and MTBE, which is addressed below. The PNA concentrations were estimated from TPH-diesel based on the method of Calabrese (1993) and Guerin (1984).
- The laboratory reports detection of TPH gasoline at 0.43 mg/l, and diesel at 3.7 mg/l in groundwater from Boring 10. BTEX and PNAs, the "risk drivers" for TPH (ASTM 1995), were non-detectable. While there is no regulatory guidance (MCL, Action Level, or tap water PRG) for TPH diesel or gasoline in groundwater these detections may require further delineation following review by the Alameda County Department of Environmental Health.

- The laboratory reports that the concentration of MTBE in groundwater from Boring 1 of 0.062 mg/l MTBE slightly exceeds the Action Level of 0.035 mg/l. This exceedance is evaluated to be of no concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water.
- The concentration of VOCs in groundwater do not exceed either the California MCL or the USEPA PRG for tap water in groundwater samples from the exploratory borings, with the exception of 1,2-DCE. The laboratory reports that the concentration of 1,2-DCE (cis) in groundwater from Boring 6 exceeds the MCL of 0.006 mg/l. This exceedance is likely to be of minor concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water.

Moreover, there is evidence of natural attenuation occurring in that area of the site. Evidence shows that reductive dechlorination of TCE into 1,2-DCE (cis) and 1,2-DCE (trans) is occurring. This process generally occurs in an anaerobic, methane-rich environment by methanogenic bacteria. However, additional delineation and confirmation needs to be performed near location GW-6 to support the above conclusion.

Even in the unlikely case the shallow groundwater may be used as a drinking water source, the 1,2-DCE detection should be averaged with the 12 non-detects to obtain a concentration representing the overall site conditions. Conservatively assuming that the non-detects are all at the detection limit of 0.0005 mg/l, the average 1,2-DCE concentration is 0.009 mg/l, exceeding the MCL of 0.006 mg/l by a factor of less than two. This exceedance is evaluated to be not of concern in terms of protection of human health, provided that the recommended additional delineation activity confirms the assumption of relatively limited extent of area impacted by 1,2-DCE.

- The concentration of metals in groundwater do not exceed either the California MCL or the USEPA PRG for tap water, with the exception of slight exceedances of antimony in groundwater from Boring 4, selenium from Boring 7, and nickel from Boring 8. The reported concentration of antimony at 0.0098 mg/l slightly exceeds the MCL of 0.006 mg/l, selenium reported at 0.051 mg/l slightly exceeds the MCL of 0.05 mg/kg, and nickel at 0.27 mg/l slightly exceeds the MCL of 0.10 mg/l. Since drinking water at the future site development will be supplied by the local public water supply, and there is a low potential for incidental contact of construction workers or future residents to the relatively low concentrations, it is concluded that no further consideration is warranted for metals in groundwater at this site.

### **Overall Conclusions**

- It is our opinion that this site may be used for the planned residential development provided that the additional investigation activities and appropriate remedial actions recommended below are developed and performed to address the environmental issues identified in this study.

**4.2 RECOMMENDATIONS**

Recommendations for the intended residential use of the site are:

***Recommended Actions for Site Soils***

We recommend that additional soil sampling be performed in the vicinity of shallow soil sample location SS-1 and laboratory testing be performed on these samples for total lead to evaluate the extent of lead impacted soils. Remedial actions are recommended for soil containing lead at concentrations exceeding the revised California/EPA of 300 mg/kg for residential exposure scenario. A soil management plan should be developed for lead impacted soils. The remedial alternatives for lead impacted soils include:

- Excavation of soils exceeding the revised California/EPA PRG of 300 mg/kg lead and disposal of these excavated soils at an off-site approved waste management site, or
- Excavation of soils exceeding 300 mg/kg lead and placement of these soils beneath a capping layer of clean soil or asphaltic concrete pavement or concrete pavement. Possible placement under the street areas or parking might be considered. This option may require a notification be placed on file at the City of Alameda to identify the area of placed soils with lead for future subsurface site activities.
- Excavation of soils exceeding 300 mg/kg lead and on-site treatment to reduce the soluble lead concentrations to levels acceptable to Alameda County.
- Performance of a site-specific risk-based evaluation for potential exposure to lead in soil.

***Recommended Actions for Site Groundwater***

Since it is unlikely that groundwater at the site will be used for drinking water, no active remediation of impacted groundwater is recommended. It is assumed that the drinking water for the planned development will be supplied by the local public water supply. In addition there is a low potential for incidental contact of construction workers and future residents at the site with groundwater. We recommend the following:

- Exploration of the extent of impacted groundwater with 1,2-DCE exceeding the MCL of 0.11 mg/l in the vicinity of Boring 6.
- Exploration of the extent of impacted groundwater with TPH gasoline and diesel in the vicinity of Boring 10.
- Installation of groundwater monitoring wells and documentation of stability of the plume and natural attenuation is the recommended long-term approach for areas affected by 1,2-DCE, and TPH-gasoline and diesel.
- No further actions for metals in groundwater is recommended.

***Site Preparation - Removal of Rails and Ties and Tenant Materials***

We understand that it is the responsibility of the seller to have the tenant remove the stored vehicles, boats, equipment, wood and debris that remains in one of the tenant spaces. In addition, we understand that the seller will remove the existing tracks and wooden railroad ties. We recommend that the removal of rails and ties be observed and documented by a representative of Sun Country Partners, LLP. We also recommend that removal of the tenant materials be observed and documented by a representative of Sun Country Partners, LLP. A URSGWC representative should visit the site to document the removal of tenant materials and observe the surface conditions in the tenant space.

***Site Preparation - Removal of Maintenance Pits***

We recommend that a URSGWC representative observe the demolition of the two maintenance pits. Samples of soil should be collected from adjacent to these pits, and be analyzed in the laboratory for TPH-motor oil, diesel, gasoline and BTEX. If the field observations indicate evidence of petroleum in groundwater during the pit demolition, such as a visible sheen on the water in the excavations, samples of water from the excavations should be collected and submitted to the laboratory for analysis for TPH-motor oil, diesel, gasoline and BTEX. If laboratory analyses of soil samples indicate that soil adjacent to the pit walls is impacted with TPH exceeding 1,000 mg/kg, these soils should be excavated and either disposed off-site, or managed on-site by placement under pavement areas. The management of soils with potential TPH should be approved by the County.

It would be extremely expensive, and perhaps impossible, to conduct a site reconnaissance or investigation which would ensure detection of materials at the subject property which are now or in the future might be considered hazardous. Our failure to discover hazardous materials through a reasonable and mutually agreed-upon limited scope of work does not guarantee that hazardous materials do not exist on an area. Similarly, an area which in fact is unaffected by hazardous materials at the time of our assessment may later, due to natural phenomena or human intervention, become contaminated.

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TABLE 2-1. SUMMARY OF LABORATORY ANALYSIS RESULTS FOR SOIL SAMPLES [mg/kg]

Sample ID	ABL-DC01 (Soil Cuttings)	ABL-SS-1-0-1	ABL-SS-2-0-1	ABL-SS-3-0-1	ABL-SS-4-0-1	ABL-SS-5-0-1	ABL-SB-1-0-1	ABL-SB-1-2-3	ABL-SB-2-0-1	ABL-SB-2-2-3	ABL-SB-3-0-1	ABL-SB-3-2-3	ABL-SB-4-0-1	ABL-SB-4-2-3	ABL-SB-5-0-1	ABL-SB-5-2-3	ABL-SB-6-0-1	ABL-SB-6-2-3	ABL-SB-7-0-1	ABL-SB-7-2-3	ABL-SB-8-0-1	ABL-SB-8-2-3	ABL-SB-9-0-1	ABL-SB-9-2-3	ABL-SB-10-0-1	ABL-SB-10-2-3	ABL-SB-11-0-1	ABL-SB-11-2-3	ABL-SB-12-0-1	ABL-SB-12-2-3			
Sampling Date	2/16/99	2/16/99	2/16/99	2/16/99	2/16/99	2/16/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99			
Sampling Depth (ft)	-	0-1	0-1	0-1	0-1	0-1	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3	0-1	2-3			
<b>BTEX, MTBE, TPH, and TPHd by EPA Method 8020A</b>																																	
Benzene	<0.005	-	-	-	-	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-		
Toluene	<0.005	-	-	-	-	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	
Ethylbenzene	<0.005	-	-	-	-	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	
Total Xylenes	<0.005	-	-	-	-	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	<0.005	-	
TPH-Diesel	<1.0	<b>3.5</b>	<1.0	<b>11</b>	<1.0	<1.0	<b>39.0 H</b>	<b>1.1 H</b>	<b>6.8 H</b>	<b>5.8 H</b>	<b>7.6 H</b>	<b>6.2 H</b>	<1.0	<b>6.4 H</b>	<b>16.0 H</b>	<b>10.0 H</b>	<b>7.0 H</b>	<b>6.5 H</b>	<1.0	<b>5.0 H</b>	<b>5.1 H</b>	<b>9.8 H</b>	<b>6.1 H</b>	<1.0	<b>38.0 H</b>	-	<b>36.0 H</b>	<b>5.0 H</b>	<b>36.0 H</b>	<b>4.6 H</b>			
TPH-Motor Oil	-	<50	<50	<50	<50	<50	<b>350.0 H</b>	<50	<50	<50	<50	<50	<50	<50	<b>66.0 H</b>	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<b>72.0 H</b>	<50	<b>280.0 H</b>	<50	<b>180.0 H</b>	<50
TPH-Gasoline	<1.0	-	-	-	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	
<b>VOCs by EPA Method 8260A</b>																																	
None Detected	<5;<50	-	-	-	-	-	<5;<50	-	<5;<50	-	<5;<50	-	<5;<50	-	<5;<50	-	<5;<50	-	<5;<50	-	<5;<50	-	<5;<50	-	<5;<50	-	<5;<50	-	<5;<50	-	<5;<50	-	
<b>SVOCs by EPA Method 8270A</b>																																	
PNAs	-	-	-	-	-	-	<0.05-<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>PCBs by EPA Method 8080A (detected only)</b>																																	
AROCOR 1260	<0.1	<b>0.11</b>	<0.1	<0.1	<0.1	<0.1	<0.66 S	-	<0.1	-	<0.1	-	<0.1	-	<0.66 S	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	
<b>CAM 17 Metals by EPA Method 3050A/ 6010A/ 7471A (detected only)</b>																																	
Antimony	<2.0	<b>5</b>	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Arsenic	<b>1.3</b>	<b>12</b>	<b>6.3</b>	<b>3.4</b>	<b>2.5</b>	<b>3.1</b>	<b>3.1</b>	<b>1.7</b>	<1.0	<1.0	<b>2.7</b>	<b>1.2</b>	<b>3.8</b>	<b>1.8</b>	<b>1.6</b>	<b>2</b>	<b>2.2</b>	<1.0	<b>2.8</b>	<b>1.2</b>	<b>22</b>	<b>3.5</b>	<b>3.4</b>	<b>1.6</b>	<b>4</b>	<1.0	<b>4</b>	<b>2.2</b>	<b>2.2</b>	<b>2.1</b>			
Barium	<b>22</b>	<b>120</b>	<b>60</b>	<b>160</b>	<b>46</b>	<b>62</b>	<b>57</b>	<b>15</b>	<b>11</b>	<b>11</b>	<b>68</b>	<b>24</b>	<b>40</b>	<b>51</b>	<b>62</b>	<b>32</b>	<b>47</b>	<b>9.1</b>	<b>40</b>	<b>48</b>	<b>28</b>	<b>34</b>	<b>190</b>	<b>11</b>	<b>240</b>	<b>9.6</b>	<b>76</b>	<b>25</b>	<b>39</b>	<b>14</b>			
Cadmium	<0.5	<b>3.9</b>	<0.5	<b>0.79</b>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Chromium	<b>17</b>	<b>35</b>	<b>21</b>	<b>18</b>	<b>28</b>	<b>29</b>	<b>29</b>	<b>22</b>	<b>17</b>	<b>16</b>	<b>26</b>	<b>22</b>	<b>28</b>	<b>34</b>	<b>28</b>	<b>30</b>	<b>27</b>	<b>21</b>	<b>21</b>	<b>20</b>	<b>27</b>	<b>30</b>	<b>21</b>	<b>18</b>	<b>47</b>	<b>22</b>	<b>38</b>	<b>29</b>	<b>27</b>	<b>25</b>			
Cobalt	<b>2.5</b>	<b>6.2</b>	<b>4.6</b>	<b>15</b>	<b>5.2</b>	<b>7.1</b>	<b>4.5</b>	<b>2.8</b>	<b>2.5</b>	<b>1.8</b>	<b>6.6</b>	<b>4.4</b>	<b>4.6</b>	<b>6.1</b>	<b>9.2</b>	<b>3.4</b>	<b>4.2</b>	<b>2.2</b>	<b>7.5</b>	<b>5</b>	<b>17</b>	<b>11</b>	<b>9.9</b>	<b>2.4</b>	<b>17</b>	<b>2</b>	<b>9.1</b>	<b>3</b>	<b>4.4</b>	<b>2.4</b>			
Copper	<b>5.5</b>	<b>160</b>	<b>16</b>	<b>15</b>	<b>15</b>	<b>17</b>	<b>12</b>	<b>3.7</b>	<b>3</b>	<b>3.2</b>	<b>52</b>	<b>21</b>	<b>20</b>	<b>9.6</b>	<b>45</b>	<b>14</b>	<b>14</b>	<b>2.6</b>	<b>62</b>	<b>9.3</b>	<b>25</b>	<b>18</b>	<b>14</b>	<b>5</b>	<b>19</b>	<b>2.7</b>	<b>81</b>	<b>10</b>	<b>9.5</b>	<b>4.2</b>			
Lead	<b>2.7</b>	<b>380 *</b>	<b>41</b>	<b>64</b>	<b>11</b>	<b>36</b>	<b>65</b>	<b>2.4</b>	<b>1.6</b>	<b>6.6</b>	<b>50</b>	<b>5.5</b>	<b>88</b>	<b>4.3</b>	<b>50 *</b>	<b>30</b>	<b>29</b>	<b>1.2</b>	<b>24</b>	<b>4.3</b>	<b>7.9</b>	<b>6.8</b>	<b>9.7</b>	<b>6.4</b>	<b>9.6</b>	<b>1.9</b>	<b>93 *</b>	<b>12</b>	<b>5.5</b>	<b>3.2</b>			
Mercury	<0.05	<b>0.26</b>	<b>0.24</b>	<b>0.18</b>	<b>0.21</b>	<b>0.071</b>	<0.05	<0.05	<0.05	<0.05	<b>0.11</b>	<0.05	<b>0.14</b>	<0.05	<b>0.097</b>	<0.05	<0.05	<0.05	<b>0.2</b>	<0.05	<b>0.057</b>	<0.05	<0.05	<0.05	<b>0.052</b>	<0.05	<b>0.058</b>	<b>0.067</b>	<0.05	<0.05			
Molybdenum	<1	<b>1.5</b>	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
Nickel	<b>12</b>	<b>47</b>	<b>24</b>	<b>18</b>	<b>32</b>	<b>45</b>	<b>30</b>	<b>24</b>	<b>19</b>	<b>15</b>	<b>32</b>	<b>20</b>	<b>28</b>	<b>41</b>	<b>33</b>	<b>20</b>	<b>29</b>	<b>17</b>	<b>22</b>	<b>32</b>	<b>24</b>	<b>21</b>	<b>42</b>	<b>19</b>	<b>99</b>	<b>17</b>	<b>59</b>	<b>26</b>	<b>24</b>	<b>17</b>			
Selenium	<2	<b>3.5</b>	<2	<2	<2	<2	<2	<2	<2	<b>2</b>	<2	<b>2</b>	<2	<b>2.7</b>	<b>2.5</b>	<2	<2	<2	<2	<2	<b>2</b>	<b>2</b>	<2	<b>2.1</b>	<b>2.2</b>	<2	<b>2.6</b>	<2	<2	<2			
Vanadium	<b>13</b>	<b>22</b>	<b>18</b>	<b>85</b>	<b>23</b>	<b>20</b>	<b>22</b>	<b>14</b>	<b>10</b>	<b>9.6</b>	<b>24</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>33</b>	<b>22</b>	<b>19</b>	<b>13</b>	<b>23</b>	<b>13</b>	<b>26</b>	<b>24</b>	<b>16</b>	<b>12</b>	<b>20</b>	<b>14</b>	<b>28</b>	<b>23</b>	<b>20</b>	<b>18</b>			
Zinc	<b>11</b>	<b>460</b>	<b>52</b>	<b>72</b>	<b>29</b>	<b>46</b>	<b>210</b>	<b>12</b>	<b>10</b>	<b>12</b>	<b>120</b>	<b>16</b>	<b>70</b>	<b>19</b>	<b>51</b>	<b>26</b>	<b>41</b>	<b>10</b>	<b>30</b>	<b>18</b>	<b>43</b>	<b>34</b>	<b>25</b>	<b>9.7</b>	<b>54</b>	<b>10</b>	<b>230</b>	<b>25</b>	<b>20</b>	<b>13</b>			

Notes:  
 Results above detection limit are bolded.  
 Soil samples are a composite of 1 foot of soil.  
 H = Hydrocarbon does not match the pattern standard or have a characteristic hydrocarbon pattern.  
 \* Samples analyzed for STLC Lead yielded the following concentrations: ABL-SB-5-0-1 = < 1 mg/L, ABL-SB-11-0-1 = 2.2 mg/L, ABL-SS-1-0-1 = 33 mg/L. Samples analyzed for DI Water STLC Lead did not detect concentrations of lead above the reporting limit.



TABLE 2-2. SUMMARY OF LABORATORY ANALYSIS RESULTS FOR WATER SAMPLES [mg/L]

Sample ID	TB01	DUP-GW-1	ABL-GW-1	ABL-GW-2	ABL-GW-3	ABL-GW-4	ABL-GW-5	ABL-GW-6	ABL-GW-7	ABL-GW-8	ABL-GW-9	ABL-GW-10	ABL-GW-11	ABL-GW-12
Sampling Date	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99	2/15/99
Depth to Water [ft]	--	2.7	2.7	2.7	2.1	1.5	3.4	3.6	3.1	9.0	1.3	1.3	3.0	3.2
<b>BTEX, TPHg, TPHd, MTBE by EPA Method 8020A</b>														
Benzene	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Xylenes	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<b>0.0024</b>	<0.0005	<0.0005	<0.0005	<0.0005
TPH-Gasoline	--	<b>0.052 H</b>	<b>0.079 H</b>	<0.050	<b>0.160 H</b>	<0.050	<0.050	<b>0.110 H</b>	<0.050	<b>0.055 H</b>	<b>0.092 H</b>	<b>0.430 H</b>	<0.050	<0.050
TPH-Diesel	--	<0.050	<0.050	<0.050	<0.050	<0.050	<b>0.100 H</b>	<b>0.099 H</b>	<0.050	<0.050	-- *	<b>3.700 H S</b>	<0.050	<0.050
MTBE	--	<0.005	<b>0.062</b>	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.017</b>	<0.005	<0.005	<0.005
<b>VOCs by EPA Method 8260A (detected only)</b>														
Carbon Disulfide	<0.001	<b>0.0012</b>	<0.001	<0.001	<0.001	<0.001	<b>0.0024</b>	<0.001	<0.001	<0.001	-- *	<0.001	<0.001	<0.001
1,2-Dichloroethene (cis)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<b>0.11</b>	<0.0005	<0.0005	-- *	<0.0005	<0.0005	<0.0005
1,2-Dichloroethene (trans)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<b>0.0042</b>	<0.0005	<0.0005	-- *	<0.0005	<0.0005	<0.0005
Trichloroethene	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<b>0.0029</b>	<0.0005	<0.0005	-- *	<0.0005	<0.0005	<0.0005
Total Xylenes	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<b>0.0019</b>	-- *	<0.001	<0.001	<0.001
<b>CAM 17 Metals by EPA Method 3050A/ 6010A/ 7471A (detected only)</b>														
Antimony	--	<0.005	<0.005	<b>0.0057</b>	<0.005	<b>0.0098</b>	<0.005	<b>0.0059</b>	<b>0.0057</b>	<b>0.0052</b>	-- *	<b>0.0084</b>	<b>0.0069</b>	<0.005
Barium	--	<b>0.026</b>	<b>0.081</b>	<b>0.022</b>	<b>0.055</b>	<b>0.067</b>	<b>0.022</b>	<b>0.1</b>	<b>0.019</b>	<b>0.026</b>	-- *	<b>0.019</b>	<b>0.058</b>	<b>0.024</b>
Cobalt	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.06</b>	-- *	<0.005	<0.005	<b>0.0064</b>
Copper	--	<0.005	<b>0.023</b>	<b>0.033</b>	<b>0.043</b>	<b>0.032</b>	<b>0.0023</b>	<b>0.033</b>	<b>0.027</b>	<b>0.063</b>	-- *	<b>0.045</b>	<b>0.019</b>	<b>0.043</b>
Molybdenum	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.0065</b>	<0.005	-- *	<0.005	<b>0.0068</b>	<0.005
Nickel	--	<b>0.0083</b>	<b>0.053</b>	<b>0.0075</b>	<b>0.012</b>	<b>0.0069</b>	<0.005	<b>0.015</b>	<b>0.0056</b>	<b>0.27</b>	-- *	<b>0.018</b>	<b>0.0082</b>	<b>0.012</b>
Selenium	--	<b>0.043</b>	<0.005	<0.005	<b>0.0073</b>	<0.005	<b>0.051</b>	<b>0.0077</b>	<0.005	<b>0.0059</b>	-- *	<0.005	<b>0.013</b>	<b>0.0059</b>
Vanadium	--	<b>0.016</b>	<0.005	<0.005	<0.005	<0.005	<b>0.019</b>	<0.005	<0.005	<0.005	-- *	<0.005	<0.005	<0.005
Zinc	--	<0.01	<b>0.011</b>	<b>0.036</b>	<b>0.013</b>	<b>0.018</b>	<0.01	<b>0.014</b>	<b>0.01</b>	<b>0.24</b>	-- *	<b>0.022</b>	<b>0.027</b>	<b>0.011</b>

Notes:

Results above detection limit are bolded.

\* = Not enough water collected due to silting of borehole.

H = Hydrocarbon does not match the pattern standard or have a characteristic hydrocarbon pattern.

S = Analysis by EPA Method 8015M silica gel cleanup detected a diesel concentration of 2.4 mg/L.

TABLE 3-1. COMPARISON OF SOIL MAXIMUM DETECTIONS WITH U.S.EPA REGION 9 PRGs

Sample ID	Number of Samples Analyzed	Number of Detections	Average Detected Conc. [mg/kg]	Maximum Detection [mg/kg]	Location of Maximum Detection	Residential Soil PRG [mg/kg]	Is Soil PRG Exceeded by Max. Conc. ?
TPH-Diesel	29	23	12.4	39 H	SB-1-0-1	N/A	NO
TPH-Motor Oil	29	5	190	350 H	SB-1-0-1	N/A	NO
AROCLOR 1260	18	1	0.11	0.11	SS-1-0-1	0.2	NO
Antimony	30	1	5.0	5.0	SS-1-0-1	30	NO
Arsenic	30	26	3.9	22	SB-8-0-1	0.377 to 20.8	PRG Exceeded
Barium	30	30	56	240	SB-10-0-1	5,150	NO
Cadmium	30	3	1.9	3.9	SS-1-0-1	9	NO
Chromium	30	30	26	47	SB-10-0-1	211	NO
Cobalt	30	30	6.2	17	SB-10-0-1	3,250	NO
Copper	30	30	24	160	SS-1-0-1	2,780	NO
Lead	30	30	36	380	SS-1-0-1	300* (130)	PRG Exceeded
Mercury	30	13	0.13	0.26	SB-8-0-1	5.45	NO
Molybdenum	30	1	1.5	1.5	SS-1-0-1	375	NO
Nickel	30	30	30	99	SB-10-0-1	150	NO
Selenium	30	11	2.3	3.5	SS-1-0-1	375	NO
Vanadium	30	30	22	85	SS-3-0-1	525	NO
Zinc	30	30	61	460	SS-1-0-1	22,500	NO

Notes:

H = Hydrocarbon does not match the pattern standard or have a characteristic hydrocarbon pattern.

PRG = Preliminary Remedial Goal. USEPA 1998. Region 9 PRG Tables. May.

Exceedances of PRG are bolded.

\* The California-modified PRG of 130 mg/kg was revised based on the updated FDA dietary concentration as explained in Section 3.0 and Appendix E.

TABLE 3-2. COMPARISON OF WATER MAXIMUM DETECTIONS WITH GROUNDWATER QUALITY CRITERIA

Sample ID	Number of Samples Analyzed	Number of Detections	Maximum Detection [mg/L]	Location of Maximum Detection	Water Quality Criteria (WQC) and Reference [mg/L]		Is WQC Exceeded by Max. Detection ?
TPH-Gasoline	13	7	0.43 H	ABL-GW-10	N/A	N/A	NO
TPH-Diesel	12	3	3.7 H	ABL-GW-10	N/A	N/A	NO
MTBE	13	2	0.062	ABL-GW-1	0.035	AL	WQC Exceeded
Total Xylenes	13	1	0.0024	ABL-GW-8	1.75	MCL	NO
Carbon Disulfide	13	2	0.0024	ABL-GW-5	1.04	PRG	NO
1,2-Dichloroethene (cis)	13	1	0.11	ABL-GW-6	0.006	MCL	WQC Exceeded
1,2-Dichloroethene (trans)	13	1	0.0042	ABL-GW-6	0.01	MCL	NO
Trichloroethene	13	1	0.0029	ABL-GW-6	0.005	MCL	NO
Total Xylenes	13	1	0.0019	ABL-GW-8	1.75	MCL	NO
Antimony	12	7	0.0098	ABL-GW-4	0.006	MCL	WQC Exceeded
Barium	12	12	0.1	ABL-GW-6	1	MCL	NO
Cobalt	12	2	0.06	ABL-GW-8	2.19	PRG	NO
Copper	12	11	0.063	ABL-GW-8	1	SEC. DWS	NO
Molybdenum	12	2	0.0068	ABL-GW-11	0.183	PRG	NO
Nickel	12	11	0.27	ABL-GW-8	0.1	MCL	WQC Exceeded
Selenium	12	7	0.051	ABL-GW-5	0.05	MCL	WQC Exceeded
Vanadium	12	2	0.019	ABL-GW-5	0.256	PRG	NO
Zinc	12	10	0.24	ABL-GW-8	5	SEC. DWS	NO

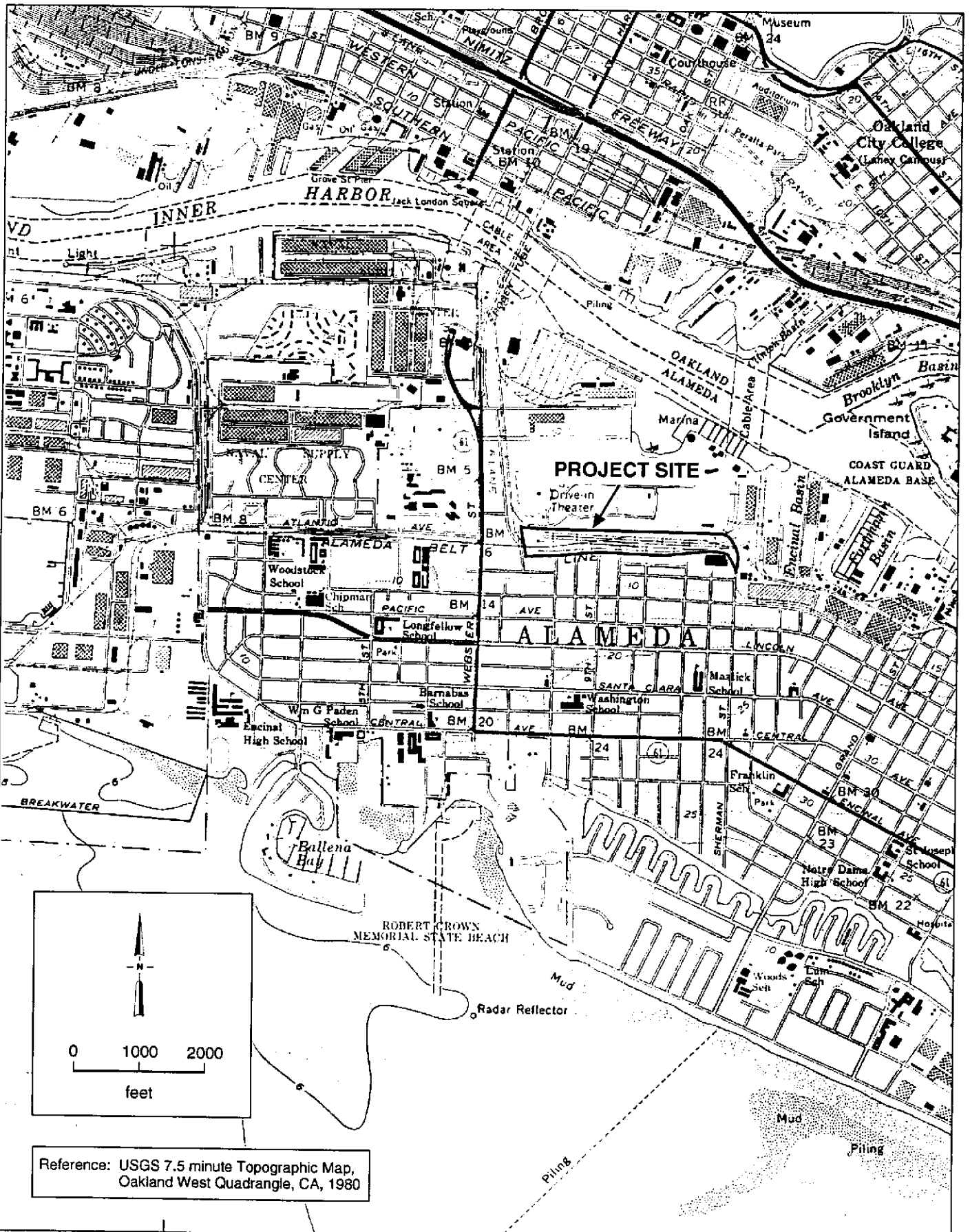
Notes:

Exceedances of WQC are **bolded**.

H = Hydrocarbon does not match the pattern standard or have a characteristic hydrocarbon pattern.

PRG = Preliminary Remedial Goal. USEPA 1998. Region 9 PRG Tables. May.

MCL = Maximum Contaminant Level

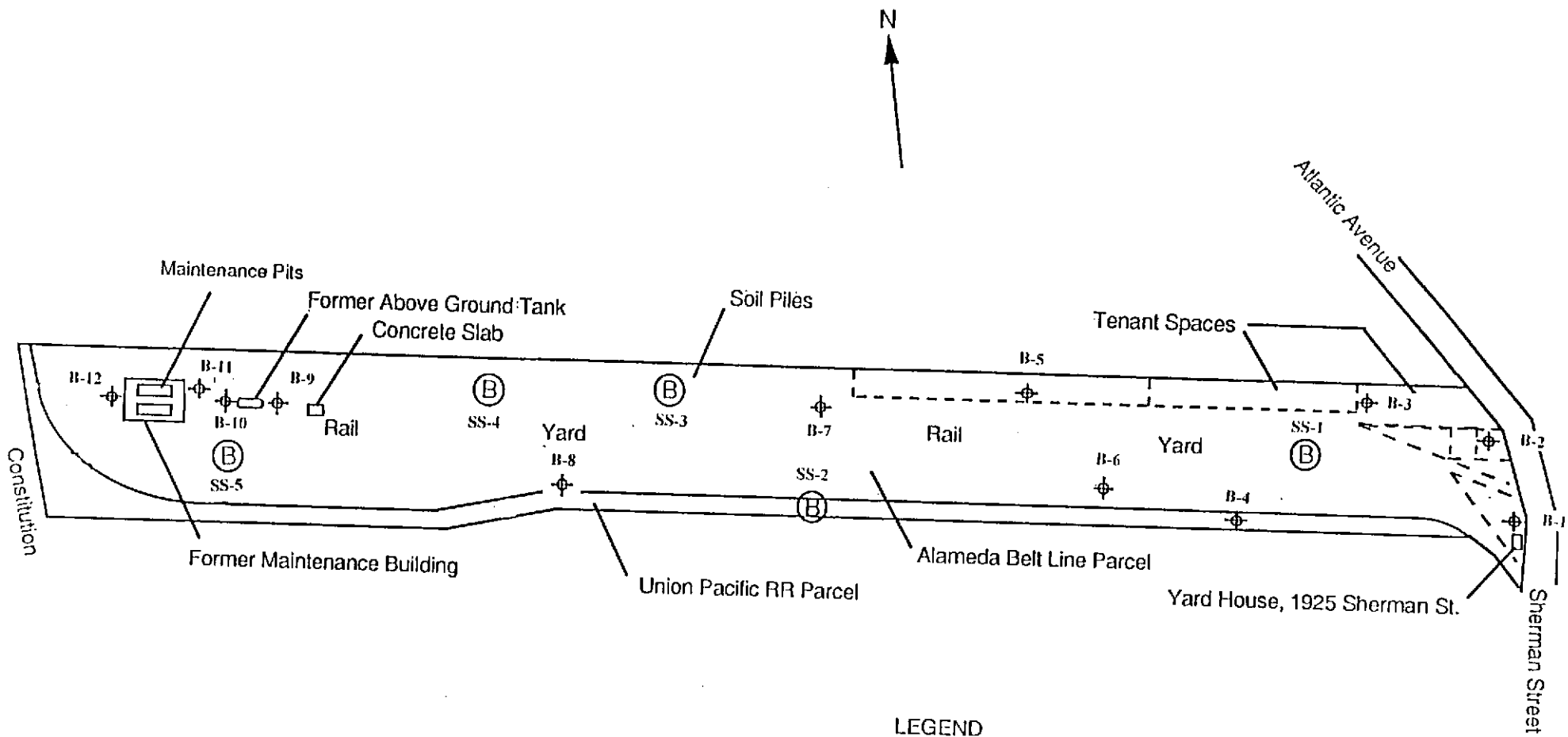


Reference: USGS 7.5 minute Topographic Map, Oakland West Quadrangle, CA, 1980

Project No. 5109967009.00  
 Sun Country Phase I and II  
**URS Greiner Woodward Clyde**

VICINITY MAP  
 ALAMEDA - CALIFORNIA

February 8, 1999  
 Figure 1



LEGEND

⊕ Planned Soil Boring

Ⓟ Shallow Soil Sample

Project No. 5109967009.00	SUN COUNTRY PARTNERS	PHASE II EXPLORATION LOCATIONS	March 1999 Figure 2
URS Greiner Woodward Clyde			

**Appendix B**  
**Remedial Investigation Workplan**

**URS Greiner Woodward Clyde**

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May 6, 1999  
5109967009.00

Ms. Madhulla Logan  
Hazardous Materials Specialist  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94503

**Subject: Work Plan for Remedial Investigation - 22-acre Former Alameda Belt Line Rail Yard, Alameda, California**

Dear Ms. Logan:

On behalf of Sun Country Partners, LLC (Sun Country), URS Greiner Woodward Clyde (URSGWC) is pleased to submit for your review and approval this work plan for a Remedial Investigation (RI) at the 22-acre Former Alameda Belt Line Rail Yard (the site). It is our understanding that Sun Country intends to redevelop the site for residential use. Areas of soil and groundwater were identified in the Phase II Environmental Assessment (URSGWC, March 9, 1999) which were recommended for additional evaluation. This work scope describes our approach to performing the additional evaluation.

**PURPOSE**

The purpose of the RI is to perform the activities recommended by the recent (URSGWC, March 9, 1999) Phase II Environmental Site Assessment (ESA). The recommendations were made to support decisions about the need (if any) and extent of remedial actions warranted at the site, with the goal to obtain from the regulatory agencies a permit for residential occupancy in a timely and cost-efficient way.

The soil and groundwater sampling plan proposed for this RI is based on the site-specific information gathered in the ESA. According to the conclusions of the ESA, the site may be used for the planned residential development provided that the recommended investigation activities are performed to address the identified environmental issues and appropriate remedial actions are carried out. On April 6, 1999, in a telephone communication with Mr. Marco Lobascio, Ms. Madhulla Logan of the Alameda County Department of Environmental Health (the County) discussed and approved the findings and recommendations of the ESA report.

## SUMMARY OF ENVIRONMENTAL CONCERNS

The site environmental concerns identified in the ESA are summarized below.

### *Soil Concerns – Lead*

Lead was detected in shallow soil at a maximum reported concentration of 380 mg/kg at location SS-1. This concentration exceeds the revised California EPA-modified residential PRG of 300 mg/kg. Additional delineation of the extent of the area where lead exceeds 300 mg/kg is warranted. Based on the results of the delineation it will be possible to draw conclusions about the need (if any) for remedial actions related to lead in soil near location SS-1.

### *Shallow Groundwater Concerns – TPH and 1,2-DCE*

The laboratory reports detection of TPH gasoline at 0.43 mg/l, and diesel at 3.7 mg/l in groundwater from Boring B-10. BTEX and PNAs, the "risk drivers" for TPH (ASTM 1995), were non-detectable. While there is no regulatory guidance (MCL, Action Level, or tap water PRG) for TPH diesel or gasoline in groundwater these detections may require further delineation following review by the Alameda County Department of Environmental Health.

The concentration of VOCs in groundwater do not exceed either the California MCL or the USEPA PRG for tap water in groundwater samples from the exploratory borings, with the exception of 1,2-DCE. The laboratory reports that the concentration of 1,2-DCE (cis) in groundwater from Boring B-6 exceeds the MCL of 0.006 mg/l. This exceedance is likely to be of minor concern to human health due to the low frequency and magnitude, and the fact that the shallow groundwater is not a viable source of drinking water.

Moreover, there is evidence of natural attenuation occurring in that area of the site. Evidence shows that reductive dechlorination of TCE into 1,2-DCE (cis) and 1,2-DCE (trans) is occurring. This process generally occurs in an anaerobic, methane-rich environment by methanogenic bacteria. However, additional delineation and confirmation needs to be performed near location B-6 to support the above conclusion.

Even in the unlikely case the shallow groundwater may be used as a drinking water source, the 1,2-DCE detection should be averaged with the 12 non-detects to obtain a concentration representing the overall site conditions. Conservatively assuming that the non-detects are all at the detection limit of 0.0005 mg/l, the average 1,2-DCE concentration is 0.009 mg/l, exceeding the MCL of 0.006 mg/l by a factor of less than two. This exceedance is evaluated to be not of concern in terms of protection of human health, provided that the recommended additional delineation activity confirms the assumption of relatively limited extent of area impacted by 1,2-DCE.

## SUMMARY OF RECOMMENDED ACTIONS

The ESA (URSGWC, March 9, 1999) recommendations for the intended residential use of the site are presented below:



### ***Recommended Actions for Lead in Soil***

Additional soil sampling was recommended in the vicinity of shallow soil sample location SS-1 and laboratory testing should be performed on these samples for total lead to evaluate the extent of lead impacted soils. Remedial actions are recommended for soil containing lead at concentrations exceeding the revised California/EPA of 300 mg/kg for residential exposure scenario. A soil management plan should be developed for lead impacted soils. The remedial alternatives for lead impacted soils include:

1. Excavation of soils exceeding the revised California/EPA PRG of 300 mg/kg lead and disposal of these excavated soils at an off-site approved waste management site, or
2. Excavation of soils exceeding 300 mg/kg lead and placement of these soils beneath a capping layer of clean soil or asphaltic concrete pavement or concrete pavement. Possible placement under the street areas or parking might be considered. This option may require that a notification be placed on file at the City of Alameda to identify the area of placed soils with lead for future subsurface site activities.
3. Excavation of soils exceeding 300 mg/kg lead and on-site treatment to reduce the soluble lead concentrations to levels acceptable to Alameda County.
4. Performance of a site-specific risk-based evaluation for potential exposure to lead in soil.

### ***Recommended Actions for TPH and 1,2-DCE in Shallow Groundwater***

Since it is unlikely that groundwater at the site will be used for drinking water, no active remediation of impacted groundwater is recommended. It is assumed that the drinking water for the planned development will be supplied by the local public water supply. In addition there is a low potential for incidental contact of construction workers and future residents at the site with groundwater. The ESA recommended the following:

1. Exploration of the extent of impacted groundwater with 1,2-DCE exceeding the MCL of 0.11 mg/l in the vicinity of Boring B-6.
2. Exploration of the extent of impacted groundwater with TPH gasoline and diesel in the vicinity of Boring B-10.
3. Installation of groundwater monitoring wells and documentation of stability of the plume and natural attenuation is the recommended long-term approach for areas affected by 1,2-DCE, and TPH-gasoline and diesel.

## **PROPOSED SCOPE OF WORK**

The proposed scope of work for the RI is organized in the following three tasks:

### ***Task 1: Finalization of This Work Plan Based on the County's Review Comments***

In Task 1 we will revise and finalize this RI work plan based on the County's review comments. Based upon our current knowledge of the site, the work plan needs to address the following five concerns:

1. Delineation of surficial soil (between 0 and one foot depth) with a lead concentration exceeding the site-specific target level (SSTL) of 300 mg/kg near location SS-1.
2. Delineation of 1,2-DCE in shallow groundwater with concentration exceeding the site-specific target level (SSTL) of 0.006 mg/l near location B-6.
3. Delineation of the relatively elevated TPH concentration detected in shallow groundwater near location B-10.

Based on professional judgement, and for budget purposes, we estimate that, at a minimum, a total of about 11 borings will be drilled and about 15 surface soil samples will be collected at the site (Figure 2) during the RI. Borings will be drilled using direct push methods. Using this method provides an evaluation of the subsurface groundwater conditions at a fraction of the cost of installing monitoring wells. We anticipate that the surficial soil samples and the borings will be allocated as follows:

1. Exploration of the extent of soil with lead near location SS-1: collect about 15 surficial soil samples using hand tools and analyze for total lead, soluble lead using WET test and using de-ionized water.
2. Exploration of the extent of 1,2-DCE in shallow groundwater near location B-6: drill about 6 borings to collect grab groundwater samples and analyze for VOCs.
3. Exploration of the extent of TPH in shallow groundwater near location B-10: drill about 5 borings to collect grab groundwater samples and analyze for TPH-gas-BTEX-MTBE and TPH-diesel and -motor oil.

The aforementioned activities will be modified according to the County's revisions (if any).

### ***Task 2: Field Sampling and Laboratory Analyses***

#### **Shallow Soil Sampling Near SS-1**

In Task 2 we will mark the sampling locations and perform the necessary utility clearance activities. Then we will start the sampling work. Surface soil samples and samples of ballast rock, from 0- to 1-foot, will be collected in plastic zip-lock bags, and will be labeled and placed in an ice chest. About 15 surface soil samples of ballast rock are planned. Samples will be located on a 50-foot grid extending from SS-1 (refer to Figures 1 and 2). The sampling locations will be plotted on a base map using field tape measurements.

#### Grab Groundwater Sampling near Boring B-6

Direct push drilling methods will be used to advance about six borings cross-gradient and downgradient from boring B-6 to explore the extent of 1,2-DCE in groundwater. Groundwater samples will be collected from each boring by placing a temporary PVC well casing in the boring, and then using either a disposable bailer or clean plastic tubing and a peristaltic pump to retrieve the water sample and place it in a clean container. The groundwater samples will be sealed, labeled and placed on ice in an ice chest. The samples will be transported to a California certified analytical laboratory. The appropriate boring locations are shown on the attached Figures 1 and 3.

#### Grab Groundwater Sampling near Boring B-10

Direct push drilling methods will be used to advance about five borings upgradient, cross-gradient, and downgradient from Boring B-10 to explore the extent of TPH-gasoline, -diesel and -motor oil and MTBE in groundwater. Grab groundwater samples will be collected from each boring and will be transported to the laboratory as described for B-6 above (refer to Figures 1 and 4).

#### Laboratory Analyses

Table 1 presents a summary of the proposed field sampling and analysis activities. The surface soil samples will be analyzed for lead, soluble lead using the WET test, and de-ionized water. Soil and shallow groundwater samples from borings will be tested for VOCs, TPH-gasoline-BTEX-MTBE and TPH-diesel and -motor oil analyses. In addition, we will analyze some of the samples to gather evidence of natural attenuation. Instead of analyzing for PNAs, we will estimate benzo(a)pyrene and naphthalene from TPH-diesel concentration using a simplified conservative methodology developed by URSGWC and accepted by the County in other projects.

#### ***Task 3: Data Evaluation and RI Report***

We will evaluate the laboratory analyses results in terms of delineation of chemical distribution in the subsurface and of exceedance of regulatory standards. Detected chemical concentrations in soil and shallow groundwater will be compared to appropriate screening level criteria, i.e., USEPA Region 9 Preliminary Remediation Goals (PRGs) for residential exposure scenario, California Maximum Contaminant Levels for drinking water, and tap water PRGs. We will prepare figures showing sampling locations and relevant results such as estimated extent of lead impacted areas, groundwater concentration contours, and exceedances of standards. The RI report will include a discussion of the results of the comparisons, and our conclusions and recommendations about the need (if any) and extent of further characterization or remedial activities at the site. The report will follow the framework for the classification of sites as "low-risk" cases according to the San Francisco Bay RWQCB (1996). We will suggest the location for installation of groundwater monitoring wells to monitor the stability of groundwater plumes.

Ms. Madhulla Logan  
May 6, 1999  
Page 6

**URS Greiner Woodward Clyde**

**CONCLUSION**

We look forward to receiving your comments on this work plan. If you have any questions, please call Al Ridley at (510) 874-3125 or Marco Lobascio at (510) 874-3254.

Sincerely,

**URS Greiner Woodward Clyde**



Albert P. Ridley, C.E.G.  
Project Manager



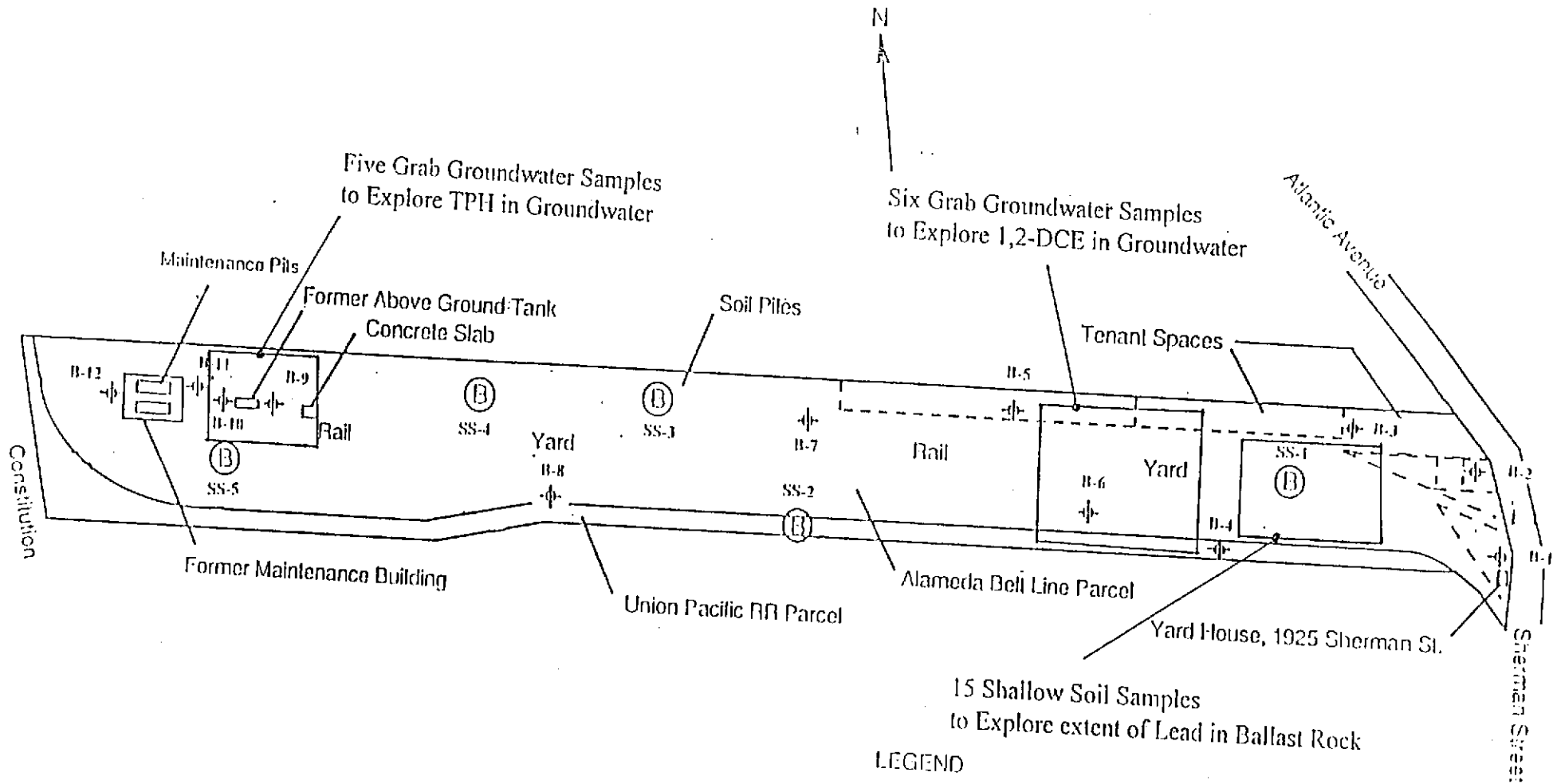
Marco C. Lobascio, P.E., R.E.A.  
Senior Civil Engineer

**Enclosures:**

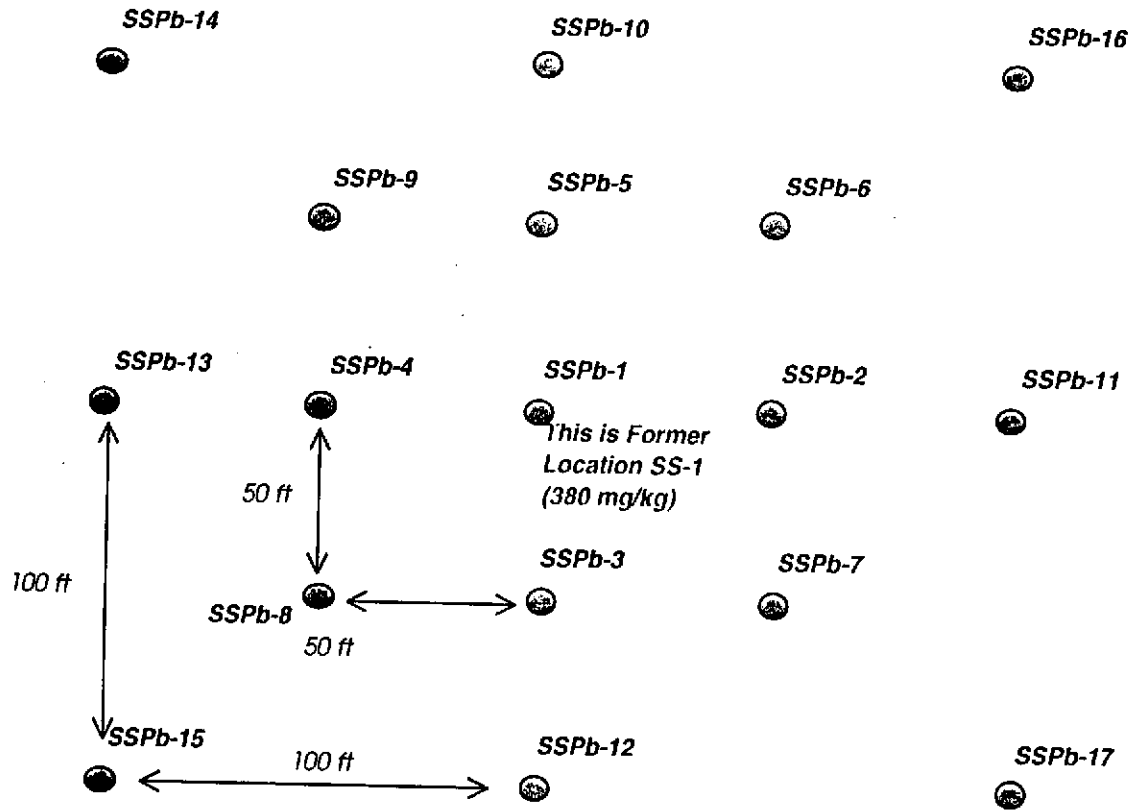
- Table 1. Summary of Field Sampling and Analyses Activities
- Figure 1. Site Map and Sampling Locations
- Figure 2. Illustration of Sampling Locations - Lead Area
- Figure 3. Illustration of Sampling Locations - 1,2-DCE Area
- Figure 4. Illustration of Sampling Locations - TPH-d and TPH-g Area

**TABLE 1. SUMMARY OF FIELD SAMPLING AND ANALYSES ACTIVITIES**

SAMPLE TYPE	PROPOSED ANALYSES	Proposed Analyses of Soil and Shallow Groundwater Samples								
		EPA8015M TPH-diesel	EPA8015M TPH-gas+ BTEX+MIBE	EPA8015M TPH-motor oil	VOCs EPA8260	PCBs EPA8080	CAM 17 EPA8010- 7470/2	CAM WET and DI Test EPA1311	Lead Only EPA6010- 7470/3	NAT Indicators
Surface soil sampling for delineation of spills	Surface soil sampling (100)	-	-	-	-	-	-	3	15	-
Shallow groundwater sampling for TPH-diesel delineation	Shallow groundwater sampling (100)	-	-	-	6	-	-	-	-	3
Shallow groundwater sampling for TPH-diesel delineation	Shallow groundwater sampling (100)	5	5	5	-	-	-	-	-	3
Characterization of soil (100) (EPA8015M TPH-gas+MIBE)	Soil sampling (100)	2	2	-	2	2	2	-	-	-
Characterization of soil (100) (EPA8015M TPH-diesel)	Soil sampling (100)	1	1	-	1	1	1	-	-	-
GWEC samples	Groundwater sampling (100)	2	2	2	2	2	-	-	-	-
<b>SUBTOTAL BY METHOD</b>		<b>10</b>	<b>10</b>	<b>7</b>	<b>11</b>	<b>5</b>	<b>5</b>	<b>3</b>	<b>15</b>	<b>6</b>
<b>TOTAL ANALYSES</b>		<b>66</b>								



Project No. 5109967009.00	SUN COUNTRY PARTNERS	REMEDIAL INVESTIGATION SAMPLING LOCATIONS	<b>Figure</b> <b>1</b>
URS Greiner Woodward Clyde			



**INSTRUCTIONS:**

- Start at former location SS-1
- Collect surficial samples of ballast rock 0 to 1 foot deep, on a 50-ft grid
- Analyze samples for Total Pb
- Select one high, one medium, and a low concentration sample and analyze for STLC and DI Wet

Note: See Figure 1 for reference.

NOT TO SCALE

Project No. 5109967009.00	Alameda Belt Line	ILLUSTRATION OF SAMPLING LOCATIONS - LEAD AREA	Figure 2
URS Greiner Woodward Clyde			

North



○  
This is Former  
Location B-5  
(ND)

GWDCE-5



GWDCE-6



GWDCE-1



GWDCE-2



Approximate GW Flow Direction



GWDCE-3



This is Former  
Location B-6  
(0.11 mg/L)

GWDCE-4



○  
This is Former  
Location B-4  
(ND)

**INSTRUCTIONS:**

- Drill borings at the NEW locations indicated in the drawing
- Stop drilling 3 feet below water table
- Collect one grab groundwater sample in each boring
- Analyze samples for VOCs by USEPA Method 8260

Note: See Figure 1 for reference.

NOT TO SCALE

Project No. 5109967009.00	Alameda Belt Line	ILLUSTRATION OF SAMPLING LOCATIONS - 1,2-DCE AREA	Figure 3
URS Greiner Woodward Clyde			



North



GWTPH-5



GWTPH-2



GWTPH-1



Approximate GW Flow Direction



This is Former  
Location B-11  
(gas= ND, diesel= ND)



This is Former  
Location B-10  
(gas= 0.43 mg/L)  
(diesel=3.7 mg/L)



This is Former  
Location B-9  
(gas= 0.092 mg/L)  
(diesel= no data)



GWTPH-3



GWTPH-4



**INSTRUCTIONS:**

- Drill borings at the NEW locations indicated in the drawing
- Stop drilling 3 feet below water table
- Collect one grab groundwater sample in each boring
- Analyze samples for TPH-diesel by USEPA Method 8015

Note: See Figure 1 for reference.

NOT TO SCALE

Project No. 5109967009.00	Alameda Belt Line	ILLUSTRATION OF SAMPLING LOCATIONS - TPH-d and TPH-g AREA	Figure 4
URS Greiner Woodward Clyde			

**Appendix C**  
**Analytical Laboratory Reports**

**URS Greiner Woodward Clyde- Oakland**

500 12th Street, Suite 200

Oakland, CA 94607-4014

Attn.: Ms. April Giangerelli

Dear April,

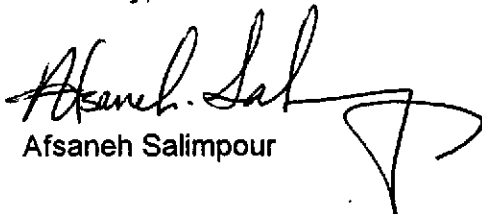
Attached is our report for your samples received on Thursday May 20, 1999.

This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

The report contains a Case Narrative detailing sample receipt and analysis.

Please note that any unused portion of the samples will be discarded after June 19, 1999 unless you have requested otherwise. We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

Sincerely,



Afsaneh Salimpour

**URS Greiner Woodward Clyde- Oakland**  
500 12th Street, Suite 200  
Oakland, CA 94607-4014

Attn.: Ms. April Giangerelli

Dear April,

Attached is our report for your samples received on Wednesday May 19, 1999.  
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after June 18, 1999 unless you have requested otherwise. We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

Sincerely,

  
Afsaneh Salimpour

Metals

URS Greiner Woodward Clyde- Oakland	☒ 500 12th Street, Suite 200 Oakland, CA 94607-4014
Attn: April Giangerelli	Phone: (510) 893-3600 Fax: (510) **A-
Project #: 5109967009.00	Project:

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
ABL-SSPb-1	Soil	05/19/1999 14:00	1
ABL-SSPb-2	Soil	05/19/1999 14:35	2
ABL-SSPb-3	Soil	05/19/1999 14:20	3
ABL-SSPb-4	Soil	05/19/1999 14:05	4
ABL-SSPb-5	Soil	05/19/1999 14:47	5
ABL-SSPb-6	Soil	05/19/1999 14:45	6
ABL-SSPb-7	Soil	05/19/1999 14:25	7
ABL-SSPb-8	Soil	05/19/1999 14:15	8
ABL-SSPb-9	Soil	05/19/1999 14:50	9
ABL-SSPb-10	Soil	05/19/1999 14:55	10
ABL-SSPb-11	Soil	05/19/1999 14:40	11
ABL-SSPb-13	Soil	05/19/1999 14:10	12
ABL-SSPb-14	Soil	05/19/1999 15:05	13
ABL-SSPb-16	Soil	05/19/1999 15:00	14

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: **URS Greiner Woodward Clyde- Oakland**  
Attn.: April Giangerelli

Test Method: 6010A  
Prep Method: 3050A

## Metals

Sample ID: <b>ABL-SSPb-1</b>	Lab Sample ID: <b>1999-05-1171-001</b>
Project: <b>5109967009.00</b>	Received: <b>05/19/1999 17:25</b>
Sampled: <b>05/19/1999 14:00</b>	Extracted: <b>05/20/1999</b>
Matrix: <b>Soil</b>	QC-Batch: <b>1999/05/20-03.15</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	7.4	1.0	mg/Kg	1.00	05/20/1999	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: URS Greiner Woodward Clyde- Oakland  
Attn.: April Giangerelli

Test Method: 6010A  
Prep Method: 3050A

## Metals

Sample ID: ABL-SSPb-2	Lab Sample ID: 1999-05-1171-002
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 14:35	Extracted: 05/20/1999 10:12
Matrix: Soil	QC-Batch: 1999/05/20-03.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	22	1.0	mg/Kg	1.00	05/20/1999	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3050A

## Metals

Sample ID: ABL-SSPb-3	Lab Sample ID: 1999-05-1171-003
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 14:20	Extracted: 05/20/1999 10:12
Matrix: Soil	QC-Batch: 1999/05/20-03.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	16	1.0	mg/Kg	1.00	05/20/1999	



# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3050A

## Metals

Sample ID: ABL-SSPb-4	Lab Sample ID: 1999-05-1171-004
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 14:05	Extracted: 05/20/1999 10:12
Matrix: Soil	QC-Batch: 1999/05/20-03.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	83	1.0	mg/Kg	1.00	05/20/1999	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3050A

## Metals

Sample ID: ABL-SSPb-5	Lab Sample ID: 1999-05-1171-005
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 14:47	Extracted: 05/20/1999 10:12
Matrix: Soil	QC-Batch: 1999/05/20-03.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	17	1.0	mg/Kg	1.00	05/20/1999	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3050A

## Metals

Sample ID: <b>ABL-SSPb-6</b>	Lab Sample ID: <b>1999-05-1171-006</b>
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 14:45	Extracted: 05/20/1999 10:12
Matrix: Soil	QC-Batch: 1999/05/20-03.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	50	1.0	mg/Kg	1.00	05/20/1999	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3050A

## Metals

Sample ID: <b>ABL-SSPb-7</b>	Lab Sample ID: <b>1999-05-1171-007</b>
Project: <b>5109967009.00</b>	Received: <b>05/19/1999 17:25</b>
Sampled: <b>05/19/1999 14:25</b>	Extracted: <b>05/20/1999 10:12</b>
Matrix: <b>Soil</b>	QC-Batch: <b>1999/05/20-03.15</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	39	1.0	mg/Kg	1.00	05/20/1999	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: URS Greiner Woodward Clyde- Oakland  
Attn.: April Giangerelli

Test Method: 6010A  
Prep Method: 3050A

## Metals

Sample ID: ABL-SSPb-8	Lab Sample ID: 1999-05-1171-008
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 14:15	Extracted: 05/20/1999 10:12
Matrix: Soil	QC-Batch: 1999/05/20-03.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	10	1.0	mg/Kg	1.00	05/20/1999	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3050A

## Metals

Sample ID: ABL-SSPb-9	Lab Sample ID: 1999-05-1171-009
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 14:50	Extracted: 05/20/1999 10:12
Matrix: Soil	QC-Batch: 1999/05/20-03.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	36	1.0	mg/Kg	1.00	05/20/1999	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3050A

## Metals

Sample ID: ABL-SSPb-10	Lab Sample ID: 1999-05-1171-010
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 14:55	Extracted: 05/21/1999 14:24
Matrix: Soil	QC-Batch: 1999/05/21-04.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	17	1.0	mg/Kg	1.00	05/21/1999	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3050A

## Metals

Sample ID: ABL-SSPb-11	Lab Sample ID: 1999-05-1171-011
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 14:40	Extracted: 05/21/1999 14:24
Matrix: Soil	QC-Batch: 1999/05/21-04.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	110	1.0	mg/Kg	1.00	05/21/1999	

1220 Quarry Lane \* Pleasanton, California 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096



# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: URS Greiner Woodward Clyde- Oakland  
Attn.: April Giangerelli

Test Method: 6010A  
Prep Method: 3050A

## Metals

Sample ID: ABL-SSPb-13	Lab Sample ID: 1999-05-1171-012
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 14:10	Extracted: 05/21/1999 14:24
Matrix: Soil	QC-Batch: 1999/05/21-04.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	56	1.0	mg/Kg	1.00	01/01/1900	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3050A

## Metals

Sample ID: ABL-SSPb-14	Lab Sample ID: 1999-05-1171-013
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 15:05	Extracted: 05/21/1999 14:24
Matrix: Soil	QC-Batch: 1999/05/21-04.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	66	1.0	mg/Kg	1.00	05/21/1999	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1171

To: **URS Greiner Woodward Clyde- Oakland**  
Attn.: April Giangerelli

Test Method: 6010A  
Prep Method: 3050A

## Metals

Sample ID: <b>ABL-SSPb-16</b>	Lab Sample ID: <b>1999-05-1171-014</b>
Project: 5109967009.00	Received: 05/19/1999 17:25
Sampled: 05/19/1999 15:00	Extracted: 05/21/1999 14:24
Matrix: Soil	QC-Batch: 1999/05/21-04.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	7.8	1.0	mg/Kg	1.00	05/21/1999	

To: URS Greiner Woodward Clyde- Oakland  
Attn.: April Giangerelli

Test Method: 6010A  
Prep Method: 3050A

**Batch QC Report**  
Metals

<b>Method Blank</b>	<b>Soil</b>	<b>QC Batch # 1999/05/20-03.15</b>
MB: 1999/05/20-03.15-001		Date Extracted: 05/20/1999

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Lead	ND	1.0	mg/Kg	05/20/1999	

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn: April Giangerelli

Prep Method: 3050A

### Batch QC Report

### Metals

Laboratory Control Spike (LCS/LCSD)		Soil	QC Batch # 1999/05/20-03.15	
LCS:	1999/05/20-03.15-002	Extracted: 05/20/1999	Analyzed:	05/20/1999
LCSD:	1999/05/20-03.15-003	Extracted: 05/20/1999	Analyzed:	05/20/1999

Compound	Conc. [ mg/Kg ]		Added Amount	Recovery %		RPD	Control Limits %		Flags	
	LCS	LCSD		LCS	LCSD		Recovery	RPD	LCS	LCSD
Lead	95.3	93	100	95.3	93.0	2.4	80-120	20		

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3050A

### Batch QC Report

#### Metals

Matrix Spike ( MS / MSD )

Soil

QC Batch # 1999/05/20-03.15

Sample ID: OC SLUDGE-2 COMP 3:1

Lab Sample ID: 1999-05-1163-001

MS: 1999/05/20-03.15-004 Extracted: 05/20/1999

Analyze 05/20/1999

Dilution: 1.0

MSD: 1999/05/20-03.15-005 Extracted: 05/20/1999

Analyze 05/20/1999

Dilution: 1.0

Compound	Conc. [ mg/Kg ]			Added Amount	Recovery %		RPD	Control Limits %		Flags	
	MS	MSD	Sample		MS	MSD		Recovery	RPD	MS	MSD
Lead	92	91.9	4.4	100	87.6	87.5	0.0	80-120	20		

To: URS Greiner Woodward Clyde- Oakland  
Attn: April Giangerelli

Test Method: 6010A  
Prep Method: 3050A

## Legend & Notes

### Metals

#### Analysis Notes

ABL-SSPb-1 ( Lab# 1999-05-1171-001 )  
ABL-SSPb-10 ( Lab# 1999-05-1171-010 )  
ABL-SSPb-11 ( Lab# 1999-05-1171-011 )  
ABL-SSPb-13 ( Lab# 1999-05-1171-012 )  
ABL-SSPb-14 ( Lab# 1999-05-1171-013 )  
ABL-SSPb-16 ( Lab# 1999-05-1171-014 )  
ABL-SSPb-2 ( Lab# 1999-05-1171-002 )  
ABL-SSPb-3 ( Lab# 1999-05-1171-003 )  
ABL-SSPb-4 ( Lab# 1999-05-1171-004 )  
ABL-SSPb-5 ( Lab# 1999-05-1171-005 )  
ABL-SSPb-6 ( Lab# 1999-05-1171-006 )  
ABL-SSPb-7 ( Lab# 1999-05-1171-007 )  
ABL-SSPb-8 ( Lab# 1999-05-1171-008 )  
ABL-SSPb-9 ( Lab# 1999-05-1171-009 )

CAM 17 Metals

URS Greiner Woodward Clyde- Oakland

✉ 500 12th Street, Suite 200  
Oakland, CA 94607-4014

Attn: April Giangerelli

Phone: (510) 893-3600 Fax: (510) \*\*A-

Project #:

Project:

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
ABC-PURGE	Water	05/21/1999 14:30	9
ABC-EQBLK	Water	05/21/1999 14:40	10



Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3010A

## CAM 17 Metals

Sample ID: ABC-PURGE	Lab Sample ID: 1999-05-1214-009
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:30	Extracted: 05/24/1999
Matrix: Water	QC-Batch: 1999/05/24-03.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Antimony	0.0075	0.0050	mg/L	1.00	05/24/1999	
Arsenic	ND	0.0050	mg/L	1.00	05/24/1999	
Barium	0.090	0.0050	mg/L	1.00	05/24/1999	
Beryllium	ND	0.0050	mg/L	1.00	05/24/1999	
Chromium	0.010	0.0050	mg/L	1.00	05/24/1999	
Cobalt	ND	0.0050	mg/L	1.00	05/24/1999	
Copper	0.11	0.0050	mg/L	1.00	05/24/1999	
Lead	0.077	0.0050	mg/L	1.00	05/24/1999	
Molybdenum	0.0057	0.0050	mg/L	1.00	05/24/1999	
Nickel	0.023	0.0050	mg/L	1.00	05/24/1999	
Selenium	ND	0.0050	mg/L	1.00	05/24/1999	
Silver	ND	0.0050	mg/L	1.00	05/24/1999	
Thallium	ND	0.0050	mg/L	1.00	05/24/1999	
Vanadium	0.016	0.0050	mg/L	1.00	05/24/1999	
Zinc	0.13	0.010	mg/L	1.00	05/24/1999	

# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3010A

CAM 17 Metals

Sample ID: ABC-EQBLK	Lab Sample ID: 1999-05-1214-010
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:40	Extracted: 05/24/1999
Matrix: Water	QC-Batch: 1999/05/24-03.15

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Antimony	ND	0.0050	mg/L	1.00	05/24/1999	
Arsenic	ND	0.0050	mg/L	1.00	05/24/1999	
Barium	0.031	0.0050	mg/L	1.00	05/24/1999	
Beryllium	ND	0.0050	mg/L	1.00	05/24/1999	
Cadmium	ND	0.0020	mg/L	1.00	05/24/1999	
Chromium	ND	0.0050	mg/L	1.00	05/24/1999	
Cobalt	ND	0.0050	mg/L	1.00	05/24/1999	
Copper	0.021	0.0050	mg/L	1.00	05/24/1999	
Lead	ND	0.0050	mg/L	1.00	05/24/1999	
Molybdenum	ND	0.0050	mg/L	1.00	05/24/1999	
Nickel	ND	0.0050	mg/L	1.00	05/24/1999	
Selenium	ND	0.0050	mg/L	1.00	05/24/1999	
Silver	ND	0.0050	mg/L	1.00	05/24/1999	
Thallium	ND	0.0050	mg/L	1.00	05/24/1999	
Vanadium	ND	0.0050	mg/L	1.00	05/24/1999	
Zinc	0.17	0.010	mg/L	1.00	05/24/1999	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland  
Attn.: April Giangerelli

Test Method: 6010A  
Prep Method: 3010A

## Batch QC Report CAM 17 Metals

Method Blank	Water	QC Batch # 1999/05/24-03.15
MB: 1999/05/24-03.15-001		Date Extracted: 05/24/1999

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Antimony	ND	0.0050	mg/L	05/24/1999	
Arsenic	ND	0.0050	mg/L	05/24/1999	
Barium	ND	0.0050	mg/L	05/24/1999	
Beryllium	ND	0.0050	mg/L	05/24/1999	
Cadmium	ND	0.0020	mg/L	05/24/1999	
Chromium	ND	0.0050	mg/L	05/24/1999	
Cobalt	ND	0.0050	mg/L	05/24/1999	
Copper	ND	0.0050	mg/L	05/24/1999	
Lead	ND	0.0050	mg/L	05/24/1999	
Molybdenum	ND	0.0050	mg/L	05/24/1999	
Nickel	ND	0.0050	mg/L	05/24/1999	
Selenium	ND	0.0050	mg/L	05/24/1999	
Silver	ND	0.0050	mg/L	05/24/1999	
Thallium	ND	0.0050	mg/L	05/24/1999	
Vanadium	ND	0.0050	mg/L	05/24/1999	
Zinc	ND	0.010	mg/L	05/24/1999	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn: April Giangerelli

Prep Method: 3010A

## Batch QC Report

CAM 17 Metals

Laboratory Control Spike (LCS/LCSD)		Water		QC Batch # 1999/05/24-03.15	
LCS:	1999/05/24-03.15-002	Extracted:	05/24/1999	Analyzed:	05/24/1999
LCSD:	1999/05/24-03.15-003	Extracted:	05/24/1999	Analyzed:	05/24/1999

Compound	Conc. [ mg/L ]		Exp. Conc. [ mg/L ]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD [%]	Recovery	RPD	LCS	LCSD
Antimony	0.480	0.490	0.5	0.5	96.0	98.0	2.1	80-120	20		
Arsenic	0.480	0.490	0.5	0.5	96.0	98.0	2.1	80-120	20		
Barium	0.490	0.490	0.5	0.5	98.0	98.0	0.0	80-120	20		
Beryllium	0.480	0.480	0.5	0.5	96.0	96.0	0.0	80-120	20		
Cadmium	0.480	0.480	0.5	0.5	96.0	96.0	0.0	80-120	20		
Chromium	0.490	0.490	0.5	0.5	98.0	98.0	0.0	80-120	20		
Cobalt	0.490	0.490	0.5	0.5	98.0	98.0	0.0	80-120	20		
Copper	0.480	0.480	0.5	0.5	96.0	96.0	0.0	80-120	20		
Lead	0.480	0.480	0.5	0.5	96.0	96.0	0.0	80-120	20		
Molybdenum	0.490	0.490	0.5	0.5	98.0	98.0	0.0	80-120	20		
Nickel	0.480	0.480	0.5	0.5	96.0	96.0	0.0	80-120	20		
Selenium	0.460	0.460	0.5	0.5	92.0	92.0	0.0	80-120	20		
Silver	0.470	0.490	0.5	0.5	94.0	98.0	4.2	80-120	20		
Thallium	0.470	0.460	0.5	0.5	94.0	92.0	2.2	80-120	20		
Vanadium	0.490	0.490	0.5	0.5	98.0	98.0	0.0	80-120	20		
Zinc	0.480	0.480	0.5	0.5	96.0	96.0	0.0	80-120	20		

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1214

To: URS Greiner Woodward Clyde- Oakland

Test Method: 6010A

Attn.: April Giangerelli

Prep Method: 3010A

## Batch QC Report

CAM 17 Metals

Matrix Spike ( MS / MSD )

Water

QC Batch # 1999/05/24-03.15

Sample ID: ABC-PURGE

Lab Sample ID: 1999-05-1214-009

MS: 1999/05/24-03.15-004 Extracted: 05/24/1999

Analyzed: 05/24/1999

Dilution: 1.0

MSD: 1999/05/24-03.15-005 Extracted: 05/24/1999

Analyzed: 05/24/1999

Dilution: 1.0

Compound	Conc. [mg/L]		Sample	Exp. Conc. [mg/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	MS	MSD		MS	MSD	MS	MSD		Recovery	RPD	MS	MSD
Antimony	0.477	0.474	0.0075	0.5	0.5	93.9	93.3	0.6	80-120	20		
Arsenic	.4864	.4888	ND	0.5	0.5	97.3	97.8	0.5	80-120	20		
Barium	.5646	.5629	0.090	0.5	0.5	94.9	94.6	0.3	80-120	20		
Beryllium	.4822	.4819	ND	0.5	0.5	96.4	96.4	0.0	80-120	20		
Cadmium	.4622	.4629	nd	0.5	0.5	92.4	92.6	0.2	80-120	20		
Chromium	.4741	.4718	0.010	0.5	0.5	92.8	92.4	0.4	80-120	20		
Cobalt	.4765	.4763	ND	0.5	0.5	95.3	95.3	0.0	80-120	20		
Copper	.6040	.6006	0.11	0.5	0.5	98.8	98.1	0.7	80-120	20		
Lead	.5322	.5339	0.077	0.5	0.5	91.0	91.4	0.4	80-120	20		
Molybdenum	.4755	.4795	0.0057	0.5	0.5	94.0	94.8	0.8	80-120	20		
Nickel	.4982	.4940	0.023	0.5	0.5	95.0	94.2	0.8	80-120	20		
Selenium	.4583	.4594	ND	0.5	0.5	91.7	91.9	0.2	80-120	20		
Silver	.4664	.4660	ND	0.5	0.5	93.3	93.2	0.1	80-120	20		
Thallium	.4457	.4485	ND	0.5	0.5	89.1	89.7	0.7	80-120	20		
Vanadium	.5025	.5000	0.016	0.5	0.5	97.3	96.8	0.5	80-120	20		
Zinc	.5792	.5768	0.12	0.5	0.5	91.8	91.4	0.4	80-120	20		

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

## CERTIFICATE OF ANALYSIS

Report # K148-15

Date: 6/01/99

ChromaLab  
1220 Quarry Lane  
Pleasanton CA 94566

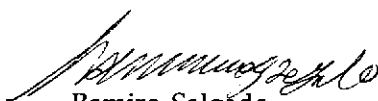
Project: 1999-05-1214

PO#

Date Rec'd: 5/28/99  
Date Started: 5/29/99  
Date Completed: 6/01/99

Date Sampled: 5/21/99  
Time:  
Sampler:

Sample ID	Lab ID	MDL	Method	Analyte	Results	Units
ABC-Purge	K32737	0.001	7470	Mercury	ND	mg/L
ABC-EG BLK	K32738	0.001	7470	Mercury	ND	mg/L

  
Ramiro Salgado  
Chemist

Certification # 1157

  
Donna Keller  
Laboratory Director

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

## QC REPORT


Report# K148-15

Chromalab  
1220 Quarry Lane  
Pleasanton


CA 94566

Dates Analyzed 6/1/99

Analyte	Batch #	Method	MS % Recovery	MSD % Recovery	RPD	Blank
Mercury	I01348	7470	82.0	85.0	3.6	ND

  
Ramiro Salgado  
Chemist

Certification # 1157

  
Donna Keller  
Laboratory Director

### Total Extractable Petroleum Hydrocarbons (TEPH)

URS Greiner Woodward Clyde- Oakland

✉ 500 12th Street, Suite 200  
Oakland, CA 94607-4014

Attn: April Giangerelli

Phone: (510) 893-3600 Fax: (510) \*\*A-

Project #:

Project:

### Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
ABC-GWTPH-3	Water	05/21/1999 10:30	1
ABC-GWTPH-1	Water	05/21/1999 10:45	2
ABC-GWTPH-5	Water	05/21/1999 11:00	3
ABC-GWTPH-2	Water	05/21/1999 11:20	4
ABC-GWTPH-4	Water	05/21/1999 11:45	5
ABC-PURGE	Water	05/21/1999 14:30	9
ABC-EQBLK	Water	05/21/1999 14:40	10



# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015m

Attn.: April Giangerelli

Prep Method: 3510/8015M

## Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: ABC-GWTPH-1	Lab Sample ID: 1999-05-1214-002
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 10:45	Extracted: 05/26/1999 13:59
Matrix: Water	QC-Batch: 1999/05/26-02.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	05/27/1999 10:55	
Motor Oil	ND	500	ug/L	1.00	05/27/1999 10:55	
<b>Surrogate(s)</b> o-Terphenyl	95.6	60-130	%	1.00	05/27/1999 10:55	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015m

Attn.: April Giangerelli

Prep Method: 3510/8015M

## Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: <b>ABC-GWTPH-2</b>	Lab Sample ID: <b>1999-05-1214-004</b>
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 11:20	Extracted: 05/26/1999 13:59
Matrix: Water	QC-Batch: 1999/05/26-02.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	05/26/1999 23:59	
Motor Oil	ND	500	ug/L	1.00	05/26/1999 23:59	
<b>Surrogate(s)</b> o-Terphenyl	87.1	60-130	%	1.00	05/26/1999 23:59	

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# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015m

Attn.: April Giangerelli

Prep Method: 3510/8015M

## Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: <b>ABC-GWTPH-3</b>	Lab Sample ID: <b>1999-05-1214-001</b>
Project:	Received: 05/21/1999 21:05
	Extracted: 05/26/1999 13:59
Sampled: 05/21/1999 10:30	QC-Batch: 1999/05/26-02.10
Matrix: Water	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	05/27/1999 09:25	
Motor Oil	ND	500	ug/L	1.00	05/27/1999 09:25	
<b>Surrogate(s)</b> o-Terphenyl	80.1	60-130	%	1.00	05/27/1999 09:25	

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# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015m

Attn.: April Giangerelli

Prep Method: 3510/8015M

## Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: <b>ABC-GWTPH-4</b>	Lab Sample ID: <b>1999-05-1214-005</b>
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 11:45	Extracted: 05/26/1999 13:59
Matrix: Water	QC-Batch: 1999/05/26-02.10
Sample/Analysis Flag: rl ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	81	ug/L	1.61	05/27/1999 00:44	
Motor Oil	ND	810	ug/L	1.61	05/27/1999 00:44	
<b>Surrogate(s)</b>						
o-Terphenyl	96.0	60-130	%	1.00	05/27/1999 00:44	

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# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015m

Attn.: April Giangerelli

Prep Method: 3510/8015M

## Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: ABC-GWTPH-5	Lab Sample ID: 1999-05-1214-003
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 11:00	Extracted: 05/26/1999 13:59
Matrix: Water	QC-Batch: 1999/05/26-02.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	80	50	ug/L	1.00	05/26/1999 22:43	nhc
Motor Oil	ND	500	ug/L	1.00	05/26/1999 22:43	
<i>Surrogate(s)</i> o-Terphenyl	89.6	60-130	%	1.00	05/26/1999 22:43	

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Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015m

Attn.: April Giangerelli

Prep Method: 3510/8015M

## Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: ABC-PURGE	Lab Sample ID: 1999-05-1214-009
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:30	Extracted: 05/26/1999 13:59
Matrix: Water	QC-Batch: 1999/05/26-02.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	160	50	ug/L	1.00	05/27/1999 10:10	nhc
Motor Oil	ND	500	ug/L	1.00	05/27/1999 10:10	
<b>Surrogate(s)</b>						
o-Terphenyl	88.5	60-130	%	1.00	05/27/1999 10:10	

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# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland  
Attn.: April Giangerelli

Test Method: 8015m  
Prep Method: 3510/8015M

## Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: ABC-EQBLK	Lab Sample ID: 1999-05-1214-010
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:40	Extracted: 05/26/1999 13:59
Matrix: Water	QC-Batch: 1999/05/26-02.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	05/27/1999 01:29	
Motor Oil	ND	500	ug/L	1.00	05/27/1999 01:29	
<i>Surrogate(s)</i> o-Terphenyl	92.1	60-130	%	1.00	05/27/1999 01:29	

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Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland  
Attn.: April GiangerelliTest Method: 8015m  
Prep Method: 3510/8015M

**Batch QC Report**  
Total Extractable Petroleum Hydrocarbons (TEPH)

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/26-02.10</b>
MB: 1999/05/26-02.10-001		Date Extracted: 05/26/1999 13:59

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Diesel	ND	50	ug/L	05/26/1999 15:42	
Motor Oil	ND	500	ug/L	05/26/1999 15:42	
<b>Surrogate(s)</b>					
o-Terphenyl	95.1	60-130	%	05/26/1999 15:42	



Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015m

Attn: April Giangerelli

Prep Method: 3510/8015M

Final QC Report

Total Extractable Petroleum Hydrocarbons (TEPH)

Laboratory Control Sample (LCS/LCSD)	Water	QC Batch # 1999/05/26-02.10
LCS: 1999/05/26-02.10-002	Extracted: 05/26/1999 13:59	Analyzed: 05/26/1999 16:31
LCSD: 1999/05/26-02.10-003	Extracted: 05/26/1999 13:59	Analyzed: 05/26/1999 17:17

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD [%]	Recovery	RPD	LCS	LCSD
Diesel	444.5188	427.7699	500	500	88.9	95.6	3.8	130	25		
<i>Surrogate(s)</i>											
o-Terphenyl	23.9552	23.5234	20	20	119.8	117.6		60-130			

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015m

Attn: April Giangerelli

Prep Method: 3510/8015M

## Legend & Notes

### Total Extractable Petroleum Hydrocarbons (TEPH)

#### Analysis Flags

rl

Reporting limits raised due to insufficient sample volume.

#### Analyte Flags

nhc

Compounds reported are in the Diesel range. They do not exhibit a pattern characteristic of hydrocarbon.

To: URS Greiner Woodward Clyde- Oakland

Attn.: April Giangerelli

## CASE NARRATIVE

### General and Sample Comments

We (ChromaLab, Inc.) received 7 Water samples, on May 20 1999 7:00PM.

ABC-GWTPH-5

Lab#: 1999-05-1195-007

ONLY ONE VOA RECEIVED FOR G/BTEX/MTBE

### Per QC Batch Comments

G/BTEX with MTBE	Water	QC Batch#: 1999/05/24.01-03
------------------	-------	-----------------------------

#### Analysis Comment

Insufficient sample for reanalysis at a lower dillution.

Gas/BTEX and MTBE

<b>URS Greiner Woodward Clyde- Oakland</b>	✉ 500 12th Street, Suite 200 Oakland, CA 94607-4014
Attn: April Giangerelli	Phone: (510) 893-3600 Fax: (510) **A-
Project #:	Project:

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
ABC-GWTPH-1	Water	05/20/1999 16:00	6
ABC-GWTPH-5	Water	05/20/1999 16:30	7

Environmental Services (SDB)

Gas/BTEX and MTBE

URS Greiner Woodward Clyde- Oakland

✉ 500 12th Street, Suite 200  
Oakland, CA 94607-4014

Attn: April Giangerelli

Phone: (510) 893-3600 Fax: (510) \*\*A-

Project #:

Project:

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
ABC-GWTPH-3	Water	05/21/1999 10:30	1
ABC-GWTPH-5	Water	05/21/1999 11:00	3
ABC-GWTPH-2	Water	05/21/1999 11:20	4
ABC-GWTPH-4	Water	05/21/1999 11:45	5
ABC-PURGE	Water	05/21/1999 14:30	9
ABC-EQBLK	Water	05/21/1999 14:40	10

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1195

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: ABC-GWTPH-1	Lab Sample ID: 1999-05-1195-006
Project:	Received: 05/20/1999 19:00
Sampled: 05/20/1999 16:00	Extracted: 05/24/1999 14:24
Matrix: Water	QC-Batch: 1999/05/24-01.03

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/24/1999 14:24	
Benzene	ND	0.50	ug/L	1.00	05/24/1999 14:24	
Toluene	ND	0.50	ug/L	1.00	05/24/1999 14:24	
Ethyl benzene	ND	0.50	ug/L	1.00	05/24/1999 14:24	
Xylene(s)	ND	0.50	ug/L	1.00	05/24/1999 14:24	
MTBE	ND	5.0	ug/L	1.00	05/24/1999 14:24	
<b>Surrogate(s)</b>						
Trifluorotoluene	101.8	58-124	%	1.00	05/24/1999 14:24	
4-Bromofluorobenzene-FID	106.8	50-150	%	1.00	05/24/1999 14:24	

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: ABC-GWTPH-2	Lab Sample ID: 1999-05-1214-004
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 11:20	Extracted: 05/24/1999 21:01
Matrix: Water	QC-Batch: 1999/05/24-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/24/1999 21:01	
Benzene	ND	0.50	ug/L	1.00	05/24/1999 21:01	
Toluene	ND	0.50	ug/L	1.00	05/24/1999 21:01	
Ethyl benzene	ND	0.50	ug/L	1.00	05/24/1999 21:01	
Xylene(s)	ND	0.50	ug/L	1.00	05/24/1999 21:01	
MTBE	ND	5.0	ug/L	1.00	05/24/1999 21:01	
<b>Surrogate(s)</b>						
Trifluorotoluene	86.4	58-124	%	1.00	05/24/1999 21:01	
4-Bromofluorobenzene-FID	80.0	50-150	%	1.00	05/24/1999 21:01	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1214

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: ABC-GWTPH-3	Lab Sample ID: 1999-05-1214-001
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 10:30	Extracted: 05/24/1999 20:07
Matrix: Water	QC-Batch: 1999/05/24-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/24/1999 20:07	
Benzene	ND	0.50	ug/L	1.00	05/24/1999 20:07	
Toluene	ND	0.50	ug/L	1.00	05/24/1999 20:07	
Ethyl benzene	ND	0.50	ug/L	1.00	05/24/1999 20:07	
Xylene(s)	ND	0.50	ug/L	1.00	05/24/1999 20:07	
MTBE	ND	5.0	ug/L	1.00	05/24/1999 20:07	
<b>Surrogate(s)</b>						
Trifluorotoluene	85.1	58-124	%	1.00	05/24/1999 20:07	
4-Bromofluorobenzene-FID	77.4	50-150	%	1.00	05/24/1999 20:07	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
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Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: ABC-GWTPH-4	Lab Sample ID: 1999-05-1214-005
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 11:45	Extracted: 05/24/1999 21:27
Matrix: Water	QC-Batch: 1999/05/24-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/24/1999 21:27	
Benzene	ND	0.50	ug/L	1.00	05/24/1999 21:27	
Toluene	ND	0.50	ug/L	1.00	05/24/1999 21:27	
Ethyl benzene	ND	0.50	ug/L	1.00	05/24/1999 21:27	
Xylene(s)	ND	0.50	ug/L	1.00	05/24/1999 21:27	
MTBE	ND	5.0	ug/L	1.00	05/24/1999 21:27	
<b>Surrogate(s)</b>						
Trifluorotoluene	85.9	58-124	%	1.00	05/24/1999 21:27	
4-Bromofluorobenzene-FID	78.0	50-150	%	1.00	05/24/1999 21:27	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1195

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: ABC-GWTPH-5	Lab Sample ID: 1999-05-1195-007
Project:	Received: 05/20/1999 19:00
Sampled: 05/20/1999 16:30	Extracted: 05/24/1999 14:52
Matrix: Water	QC-Batch: 1999/05/24-01.03
Sample/Analysis Flag: ,ne ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	100	ug/L	2.00	05/24/1999 14:52	
Benzene	ND	1.0	ug/L	2.00	05/24/1999 14:52	
Toluene	ND	1.0	ug/L	2.00	05/24/1999 14:52	
Ethyl benzene	ND	1.0	ug/L	2.00	05/24/1999 14:52	
Xylene(s)	ND	1.0	ug/L	2.00	05/24/1999 14:52	
MTBE	ND	10	ug/L	2.00	05/24/1999 14:52	
<b>Surrogate(s)</b>						
Trifluorotoluene	100.5	58-124	%	1.00	05/24/1999 14:52	
4-Bromofluorobenzene-FID	105.6	50-150	%	1.00	05/24/1999 14:52	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1214

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: ABC-GWTPH-5	Lab Sample ID: 1999-05-1214-003
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 11:00	Extracted: 05/24/1999 20:34
Matrix: Water	QC-Batch: 1999/05/24-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/24/1999 20:34	
Benzene	ND	0.50	ug/L	1.00	05/24/1999 20:34	
Toluene	ND	0.50	ug/L	1.00	05/24/1999 20:34	
Ethyl benzene	ND	0.50	ug/L	1.00	05/24/1999 20:34	
Xylene(s)	ND	0.50	ug/L	1.00	05/24/1999 20:34	
MTBE	ND	5.0	ug/L	1.00	05/24/1999 20:34	
<b>Surrogate(s)</b>						
Trifluorotoluene	79.2	58-124	%	1.00	05/24/1999 20:34	
4-Bromofluorobenzene-FID	73.5	50-150	%	1.00	05/24/1999 20:34	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 8020  
8015M

Attn: April Giangerelli

Prep Method: 5030

### Legend & Notes

Gas/BTEX and MTBE

### Sample Notes

ABC-GWTPH-5 ( Lab# 1999-05-1195-007 )

ONLY ONE VOA RECEIVED FOR G/BTEX/MTBE

### Analysis Notes

ABC-GWTPH-5 ( Lab# 1999-05-1195-007 )

Insufficient sample for reanalysis at a lower dillution.

# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: ABC-PURGE	Lab Sample ID: 1999-05-1214-009
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:30	Extracted: 05/26/1999 12:11
Matrix: Water	QC-Batch: 1999/05/26-01.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/26/1999 12:11	
Benzene	ND	0.50	ug/L	1.00	05/26/1999 12:11	
Toluene	7.8	0.50	ug/L	1.00	05/26/1999 12:11	
Ethyl benzene	ND	0.50	ug/L	1.00	05/26/1999 12:11	
Xylene(s)	ND	0.50	ug/L	1.00	05/26/1999 12:11	
MTBE	ND	5.0	ug/L	1.00	05/26/1999 12:11	
<b>Surrogate(s)</b>						
Trifluorotoluene	118.2	58-124	%	1.00	05/26/1999 12:11	
4-Bromofluorobenzene-FID	111.9	50-150	%	1.00	05/26/1999 12:11	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: ABC-EQBLK	Lab Sample ID: 1999-05-1214-010
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:40	Extracted: 05/26/1999 12:39
Matrix: Water	QC-Batch: 1999/05/26-01.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Benzene	ND	0.50	ug/L	1.00	05/26/1999 12:39	
Toluene	ND	0.50	ug/L	1.00	05/26/1999 12:39	
Ethyl benzene	ND	0.50	ug/L	1.00	05/26/1999 12:39	
Xylene(s)	ND	0.50	ug/L	1.00	05/26/1999 12:39	
MTBE	ND	5.0	ug/L	1.00	05/26/1999 12:39	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	124.4	50-150	%	1.00	05/26/1999 12:39	
Trifluorotoluene	117.3	58-124	%	1.00	05/26/1999 12:39	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8020  
8015M

Attn.: April Giangerelli

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE

Method Blank

Water

QC Batch # 1999/05/24-01.01

MB: 1999/05/24-01.01-001

Date Extracted: 05/24/1999 06:37

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	05/24/1999 06:37	
Benzene	ND	0.5	ug/L	05/24/1999 06:37	
Toluene	ND	0.5	ug/L	05/24/1999 06:37	
Ethyl benzene	ND	0.5	ug/L	05/24/1999 06:37	
Xylene(s)	ND	0.5	ug/L	05/24/1999 06:37	
MTBE	ND	5.0	ug/L	05/24/1999 06:37	
<b>Surrogate(s)</b>					
Trifluorotoluene	84.5	58-124	%	05/24/1999 06:37	
4-Bromofluorobenzene-FID	76.6	50-150	%	05/24/1999 06:37	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1195

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

## Batch QC Report Gas/BTEX and MTBE

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/24-01.03</b>
MB: 1999/05/24-01.03-001		Date Extracted: 05/24/1999 07:24

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	05/24/1999 07:24	
Benzene	ND	0.5	ug/L	05/24/1999 07:24	
Toluene	ND	0.5	ug/L	05/24/1999 07:24	
Ethyl benzene	ND	0.5	ug/L	05/24/1999 07:24	
Xylene(s)	ND	0.5	ug/L	05/24/1999 07:24	
MTBE	ND	5.0	ug/L	05/24/1999 07:24	
<b>Surrogate(s)</b>					
Trifluorotoluene	102.0	58-124	%	05/24/1999 07:24	
4-Bromofluorobenzene-FID	103.3	50-150	%	05/24/1999 07:24	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096



Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8020  
8015M

Attn.: April Giangerelli

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE

Method Blank

Water

QC Batch # 1999/05/26-01.02

MB: 1999/05/26-01.02-001

Date Extracted: 05/26/1999 07:45

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	05/26/1999 07:45	
Benzene	ND	0.5	ug/L	05/26/1999 07:45	
Toluene	ND	0.5	ug/L	05/26/1999 07:45	
Ethyl benzene	ND	0.5	ug/L	05/26/1999 07:45	
Xylene(s)	ND	0.5	ug/L	05/26/1999 07:45	
MTBE	ND	5.0	ug/L	05/26/1999 07:45	
<b>Surrogate(s)</b>					
Trifluorotoluene	112.0	58-124	%	05/26/1999 07:45	
4-Bromofluorobenzene-FID	106.0	50-150	%	05/26/1999 07:45	

1220 Quarry Lane \* Pleasanton, CA 94556-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8020  
8015M

Attn: April Giangerelli

Prep Method: 5030

**Batch QC Report**

Gas/BTEX and MTBE

**Laboratory Control Spike (LCS/LCSD)**

**Water**

**QC Batch # 1999/05/24-01.01**

LCS: 1999/05/24-01.01-002

Extracted: 05/24/1999 07:04

Analyzed: 05/24/1999 07:04

LCSD: 1999/05/24-01.01-003

Extracted: 05/24/1999 07:57

Analyzed: 05/24/1999 07:57

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD [%]	Recovery	RPD	LCS	LCSD
Gasoline	2065.4	2261.7	2500	2500	82.6	90.5	9.1	75-125	20		
Benzene	469.6567	465.2144	500	500	93.9	93.0	1.0	77-123	20		
Toluene	479.8312	480.5139	500	500	96.0	96.1	0.1	78-122	20		
Ethyl benzene	461.8550	460.8481	500	500	92.4	92.2	0.2	70-130	20		
Xylene(s)	1351.0625	1350.6438	1500	1500	90.1	90.0	0.1	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	483.4029	468.0594	500	500	96.7	93.6		58-124			
4-Bromofluorobenzene-FI	436.6031	472.5899	500	500	87.3	94.5		50-150			

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8020  
8015M

Attn: April Giangerelli

Prep Method: 5030

**Batch QC Report**

Gas/BTEX and MTBE

**Laboratory Control Spike (LCS/LCSD)**

**Water**

**QC Batch # 1999/05/26-01.02**

LCS: 1999/05/26-01.02-002

Extracted: 05/26/1999 08:12

Analyzed: 05/26/1999 08:12

LCSD: 1999/05/26-01.02-003

Extracted: 05/26/1999 09:06

Analyzed: 05/26/1999 09:06

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD	Recovery	RPD	LCS	LCSD
Gasoline	2463.1	2308.8	2500	2500	98.5	92.4	6.4	75-125	20		
Benzene	511.1265	455.2513	500	500	102.2	91.1	11.5	77-123	20		
Toluene	496.0229	453.5980	500	500	99.2	90.7	9.0	78-122	20		
Ethyl benzene	476.3831	440.9253	500	500	95.3	88.2	7.7	70-130	20		
Xylene(s)	1426.5632	1321.319	1500	1500	95.1	88.1	7.6	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	482.1520	417.9682	500	500	92.4	83.6		58-124			
4-Bromofluorobenzene-Fl	489.1271	506.2889	500	500	97.8	101.3		50-150			

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1214

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE

Matrix Spike ( MS / MSD )

Water

QC Batch # 1999/05/24-01.01

Sample ID: MW-2

Lab Sample ID: 1999-05-1170-008

MS: 1999/05/24-01.01-004 Extracted: 05/24/1999 09:58 Analyzed: 05/24/1999 09:58 Dilution: 1.0

MSD: 1999/05/24-01.01-005 Extracted: 05/25/1999 14:01 Analyzed: 05/25/1999 14:01 Dilution: 1.0

Compound	Conc. [ug/L]			Exp. Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD		Recovery	RPD	MS	MSD
Gasoline	2266.4	2302	ND	2500	2500	90.7	92.1	1.5	65-135	20		
Benzene	462.9847	464.0535	ND	500	500	92.6	92.8	0.2	65-135	20		
Toluene	469.9442	471.0224	ND	500	500	94.0	94.2	0.2	65-135	20		
Ethyl benzene	456.3140	458.7371	ND	500	500	91.3	91.7	0.4	65-135	20		
Xylene(s)	1333.8037	1347.4825	0.97	1500	1500	88.9	89.8	1.0	65-135	20		
<b>Surrogate(s)</b>												
Trifluorotoluene	484.8910	477.4845		500	500	97.0	95.5		58-124			
4-Bromofluorobenzene-F	469.3717	478.6837		500	500	93.9	95.7		50-150			

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE

Matrix Spike ( MS / MSD )

Water

QC Batch # 1999/05/26-01.02

Sample ID: MW-2

Lab Sample ID: 1999-05-1241-005

MS: 1999/05/26-01.02-004 Extracted: 05/26/1999 18:48 Analyzed: 05/26/1999 18:48 Dilution: 1.0

MSD: 1999/05/26-01.02-005 Extracted: 05/26/1999 19:42 Analyzed: 05/26/1999 19:42 Dilution: 1.0

Compound	Conc. [ug/L]			Exp. Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD		Recovery	RPD	MS	MSD
Gasoline	3813.1	3679.8	270	2500	2500	141.7	136.4	1.0	65-135	20		
Benzene	661.0347	618.9578	23	500	500	127.6	119.2	1.7	65-135	20		
Toluene	508.1885	485.6013	0.97	500	500	101.4	96.9	1.1	65-135	20		
Ethyl benzene	511.2090	482.2608	1.8	500	500	101.9	96.1	1.5	65-135	20		
Xylene(s)	1545.3549	1455.6264	1.0	1500	1500	103.0	97.0	1.5	65-135	20		
<b>Surrogate(s)</b>												
4-Bromofluorobenzene	501.6024	534.5595		500	500	100.3	106.9		50-150			
4-Bromofluorobenzene-F	562.4797	534.5595		500	500	112.5	106.9		50-150			

To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 8020  
8015M

Attn: April Giangerelli

Prep Method: 5030

**Batch QC Report**

Gas/BTEX and MTBE

<b>Laboratory Control Spike (LCS/LCSD)</b>	<b>Water</b>	<b>QC Batch # 1999/05/24-01.03</b>
LCS: 1999/05/24-01.03-002	Extracted: 05/24/1999 07:51	Analyzed: 05/24/1999 07:51
LCSD: 1999/05/24-01.03-003	Extracted: 05/21/1999 08:45	Analyzed: 05/21/1999 08:45

Compound	Conc. [ ug/L ]		Exp. Conc. [ ug/L ]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	2171.9	2218.5	2500	2500	86.9	88.7	2.1	75-125	20		
Benzene	483.5716	497.2520	500	500	96.7	99.5	2.9	77-123	20		
Toluene	473.0709	490.1478	500	500	94.6	98.0	3.5	78-122	20		
Ethyl benzene	469.2204	468.1085	500	500	93.8	93.6	0.2	70-130	20		
Xylene(s)	1323.8807	1383.4057	1500	1500	88.3	92.2	4.3	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	459.4840	449.0259	500	500	91.9	89.8		58-124			
4-Bromofluorobenzene-FI	507.3525	515.3828	500	500	101.5	103.1		50-150			

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8015M  
8020

Attn.: April Giangerelli

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 1999/05/24-01.03**

Sample ID: MW-4

Lab Sample ID: 1999-05-1170-009

MS: 1999/05/24-01.03-004 Extracted: 05/24/1999 11:01 Analyzed: 05/24/1999 11:01 Dilution: 1.0

MSD: 1999/05/24-01.03-005 Extracted: 05/24/1999 11:56 Analyzed: 05/24/1999 11:56 Dilution: 1.0

Compound	Conc. [ ug/L ]			Exp. Conc. [ ug/L ]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD		Recovery	RPD	MS	MSD
Gasoline	2281.6	2380.1	ND	2500	2500	91.3	95.2	1.0	65-135	20		
Benzene	499.0885	501.6598	ND	500	500	99.8	100.3	0.1	65-135	20		
Toluene	486.7744	496.9109	ND	500	500	97.4	99.4	0.5	65-135	20		
Ethyl benzene	476.7871	492.6546	ND	500	500	95.4	98.5	0.8	65-135	20		
Xylene(s)	1359.9223	1412.7666	ND	1500	1500	90.7	94.2	0.9	65-135	20		
<b>Surrogate(s)</b>												
Trifluorotoluene	474.8345	473.2789		500	500	95.0	94.7		58-124			
4-Bromofluorobenzene-F	463.3949	491.6192		500	500	92.7	98.3		50-150			

### Volatile Organic Compounds

URS Greiner Woodward Clyde- Oakland

✉ 500 12th Street, Suite 200  
Oakland, CA 94607-4014

Attn: April Giangerelli

Phone: (510) 893-3600 Fax: (510) \*\*A-

Project #:

Project:

### Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
ABC-GWDCE-1	Water	05/20/1999 11:00	1
ABC-GWDCE-5	Water	05/20/1999 13:45	3



Environmental Services (SDB)

## Volatile Organic Compounds

URS Greiner Woodward Clyde- Oakland

500 12th Street, Suite 200  
Oakland, CA 94607-4014

Attn: April Giangerelli

Phone: (510) 893-3600 Fax: (510) \*\*A-

Project #:

Project:

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
ABC-GWDCE-3D	Water	05/21/1999 13:50	6
ABC-GWDCE-3	Water	05/21/1999 14:00	7
ABC-GWDCE-4	Water	05/21/1999 14:15	8

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

### Volatile Organic Compounds

<b>URS Greiner Woodward Clyde- Oakland</b>	✉ 500 12th Street, Suite 200 Oakland, CA 94607-4014
Attn: April Giangerelli	Phone: (510) 893-3600 Fax: (510) **A-
Project #:	Project:

### Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
ABC-GWDCE-2	Water	05/20/1999 11:30	2
ABC-GWDCE-6	Water	05/20/1999 14:00	4
TRIP BLANK	Water	05/20/1999 15:45	5

Environmental Services (SDB)

### Volatile Organic Compounds

URS Greiner Woodward Clyde- Oakland



500 12th Street, Suite 200  
Oakland, CA 94607-4014

Attn: April Giangerelli

Phone: (510) 893-3600 Fax: (510) \*\*A-

Project #:

Project:

### Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
ABC-PURGE	Water	05/21/1999 14:30	9
ABC-EQBLK	Water	05/21/1999 14:40	10

To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

Volatile Organic Compounds

Sample ID: <b>ABC-GWDCE-1</b>	Lab Sample ID: <b>1999-05-1195-001</b>
Project:	Received: <b>05/20/1999 19:00</b>
Sampled: <b>05/20/1999 11:00</b>	Extracted: <b>05/27/1999 14:20</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/27-01.09</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	ND	50	ug/L	1.00	05/27/1999 14:20	
Benzene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Bromoform	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Bromomethane	ND	1.0	ug/L	1.00	05/27/1999 14:20	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Chlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Chloroethane	ND	1.0	ug/L	1.00	05/27/1999 14:20	
2-Butanone(MEK)	ND	50	ug/L	1.00	05/27/1999 14:20	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Chloroform	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Chloromethane	ND	1.0	ug/L	1.00	05/27/1999 14:20	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	05/27/1999 14:20	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Dibromomethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,2-Dichloroethene (cis)	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,2-Dichloroethene (trans)	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Ethylbenzene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
2-Hexanone	ND	50	ug/L	1.00	05/27/1999 14:20	
Methylene chloride	ND	5.0	ug/L	1.00	05/27/1999 14:20	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	05/27/1999 14:20	
Naphthalene	ND	1.0	ug/L	1.00	05/27/1999 14:20	
Styrene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Tetrachloroethene	ND	0.50	ug/L	1.00	05/27/1999 14:20	

To: **URS Greiner Woodward Clyde- Oakland**  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

Volatile Organic Compounds

Sample ID: <b>ABC-GWDCE-1</b>	Lab Sample ID: <b>1999-05-1195-001</b>
Project:	Received: <b>05/20/1999 19:00</b>
Sampled: <b>05/20/1999 11:00</b>	Extracted: <b>05/27/1999 14:20</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/27-01.09</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Toluene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Trichloroethene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Vinyl acetate	ND	5.0	ug/L	1.00	05/27/1999 14:20	
Vinyl chloride	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Total xylenes	1.3	1.0	ug/L	1.00	05/27/1999 14:20	
Trichlorotrifluoroethane	ND	6.0	ug/L	1.00	05/27/1999 14:20	
Carbon disulfide	ND	1.0	ug/L	1.00	05/27/1999 14:20	
Isopropylbenzene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Bromobenzene	ND	0.50	ug/L	1.00	05/27/1999 14:20	
Bromochloromethane	ND	1.0	ug/L	1.00	05/27/1999 14:20	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/27/1999 14:20	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	99.2	86-115	%	1.00	05/27/1999 14:20	
1,2-Dichloroethane-d4	85.6	76-114	%	1.00	05/27/1999 14:20	
Toluene-d8	97.0	88-110	%	1.00	05/27/1999 14:20	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1195

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

## Volatile Organic Compounds

Sample ID: ABC-GWDCE-2	Lab Sample ID: 1999-05-1195-002
Project:	Received: 05/20/1999 19:00
Sampled: 05/20/1999 11:30	Extracted: 05/26/1999 15:19
Matrix: Water	QC-Batch: 1999/05/26-01.07

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	ND	50	ug/L	1.00	05/26/1999 15:19	
Benzene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Bromoform	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Bromomethane	ND	1.0	ug/L	1.00	05/26/1999 15:19	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Chlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Chloroethane	ND	1.0	ug/L	1.00	05/26/1999 15:19	
2-Butanone(MEK)	ND	50	ug/L	1.00	05/26/1999 15:19	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Chloroform	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Chloromethane	ND	1.0	ug/L	1.00	05/26/1999 15:19	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	05/26/1999 15:19	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Dibromomethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,2-Dichloroethene (cis)	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,2-Dichloroethene (trans)	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Ethylbenzene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
2-Hexanone	ND	50	ug/L	1.00	05/26/1999 15:19	
Methylene chloride	ND	5.0	ug/L	1.00	05/26/1999 15:19	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	05/26/1999 15:19	
Styrene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Tetrachloroethene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Toluene	ND	0.50	ug/L	1.00	05/26/1999 15:19	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

To: **URS Greiner Woodward Clyde- Oakland**  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

Volatile Organic Compounds

Sample ID: <b>ABC-GWDCE-2</b>	Lab Sample ID: <b>1999-05-1195-002</b>
Project:	Received: <b>05/20/1999 19:00</b>
Sampled: <b>05/20/1999 11:30</b>	Extracted: <b>05/26/1999 15:19</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/26-01.07</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Trichloroethene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Vinyl acetate	ND	5.0	ug/L	1.00	05/26/1999 15:19	
Vinyl chloride	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Total xylenes	ND	1.0	ug/L	1.00	05/26/1999 15:19	
Trichlorotrifluoroethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Carbon disulfide	ND	1.0	ug/L	1.00	05/26/1999 15:19	
Isopropylbenzene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Bromobenzene	ND	0.50	ug/L	1.00	05/26/1999 15:19	
Bromochloromethane	ND	1.0	ug/L	1.00	05/26/1999 15:19	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/26/1999 15:19	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	93.1	86-115	%	1.00	05/26/1999 15:19	
1,2-Dichloroethane-d4	93.7	76-114	%	1.00	05/26/1999 15:19	
Toluene-d8	105.8	88-110	%	1.00	05/26/1999 15:19	

Environmental Services (SDB)

To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

Volatile Organic Compounds

Sample ID: <b>ABC-GWDCE-3D</b>	Lab Sample ID: <b>1999-05-1214-006</b>
Project:	Received: <b>05/21/1999 21:05</b>
Sampled: <b>05/21/1999 13:50</b>	Extracted: <b>05/26/1999 19:13</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/26-01.07</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	64	50	ug/L	1.00	05/26/1999 19:13	
Benzene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Bromoform	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Bromomethane	ND	1.0	ug/L	1.00	05/26/1999 19:13	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Chlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Chloroethane	ND	1.0	ug/L	1.00	05/26/1999 19:13	
2-Butanone(MEK)	ND	50	ug/L	1.00	05/26/1999 19:13	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Chloroform	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Chloromethane	ND	1.0	ug/L	1.00	05/26/1999 19:13	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	05/26/1999 19:13	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Dibromomethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,2-Dichloroethene (cis)	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,2-Dichloroethene (trans)	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Ethylbenzene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
2-Hexanone	ND	50	ug/L	1.00	05/26/1999 19:13	
Methylene chloride	ND	5.0	ug/L	1.00	05/26/1999 19:13	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	05/26/1999 19:13	
Naphthalene	ND	1.0	ug/L	1.00	05/26/1999 19:13	
Styrene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Tetrachloroethene	ND	0.50	ug/L	1.00	05/26/1999 19:13	

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 Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096



Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

Volatile Organic Compounds

Sample ID: ABC-GWDCE-3D	Lab Sample ID: 1999-05-1214-006
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 13:50	Extracted: 05/26/1999 19:13
Matrix: Water	QC-Batch: 1999/05/26-01.07

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Toluene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Trichloroethene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Vinyl acetate	ND	5.0	ug/L	1.00	05/26/1999 19:13	
Vinyl chloride	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Total xylenes	ND	1.0	ug/L	1.00	05/26/1999 19:13	
Trichlorotrifluoroethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Carbon disulfide	ND	1.0	ug/L	1.00	05/26/1999 19:13	
Isopropylbenzene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Bromobenzene	ND	0.50	ug/L	1.00	05/26/1999 19:13	
Bromochloromethane	ND	1.0	ug/L	1.00	05/26/1999 19:13	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/26/1999 19:13	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	92.2	86-115	%	1.00	05/26/1999 19:13	
1,2-Dichloroethane-d4	107.7	76-114	%	1.00	05/26/1999 19:13	
Toluene-d8	105.7	88-110	%	1.00	05/26/1999 19:13	

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

Volatile Organic Compounds

Sample ID: ABC-GWDCE-3	Lab Sample ID: 1999-05-1214-007
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:00	Extracted: 05/26/1999 19:52
Matrix: Water	QC-Batch: 1999/05/26-01.07

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	69	50	ug/L	1.00	05/26/1999 19:52	
Benzene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Bromoform	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Bromomethane	ND	1.0	ug/L	1.00	05/26/1999 19:52	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Chlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
2-Butanone(MEK)	ND	50	ug/L	1.00	05/26/1999 19:52	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Chloroform	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Chloromethane	ND	1.0	ug/L	1.00	05/26/1999 19:52	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	05/26/1999 19:52	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Dibromomethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,2-Dichloroethene (cis)	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,2-Dichloroethene (trans)	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Ethylbenzene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
2-Hexanone	ND	50	ug/L	1.00	05/26/1999 19:52	
Methylene chloride	ND	5.0	ug/L	1.00	05/26/1999 19:52	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	05/26/1999 19:52	
Naphthalene	ND	1.0	ug/L	1.00	05/26/1999 19:52	
Styrene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Tetrachloroethene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Toluene	ND	0.50	ug/L	1.00	05/26/1999 19:52	

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Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

Volatile Organic Compounds

Sample ID: ABC-GWDCE-3	Lab Sample ID: 1999-05-1214-007
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:00	Extracted: 05/26/1999 19:52
Matrix: Water	QC-Batch: 1999/05/26-01.07

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Trichloroethene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Vinyl acetate	ND	5.0	ug/L	1.00	05/26/1999 19:52	
Vinyl chloride	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Total xylenes	ND	1.0	ug/L	1.00	05/26/1999 19:52	
Trichlorotrifluoroethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Carbon disulfide	ND	1.0	ug/L	1.00	05/26/1999 19:52	
Isopropylbenzene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Bromobenzene	ND	0.50	ug/L	1.00	05/26/1999 19:52	
Bromochloromethane	ND	1.0	ug/L	1.00	05/26/1999 19:52	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/26/1999 19:52	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	93.2	86-115	%	1.00	05/26/1999 19:52	
1,2-Dichloroethane-d4	108.6	76-114	%	1.00	05/26/1999 19:52	
Toluene-d8	106.8	88-110	%	1.00	05/26/1999 19:52	

# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

## Volatile Organic Compounds

Sample ID: ABC-GWDCE-4	Lab Sample ID: 1999-05-1214-008
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:15	Extracted: 05/28/1999 12:44
Matrix: Water	QC-Batch: 1999/05/28-01.07

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	55	50	ug/L	1.00	05/28/1999 12:44	
Benzene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Bromoform	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Bromomethane	ND	1.0	ug/L	1.00	05/28/1999 12:44	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Chlorobenzene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Chloroethane	ND	1.0	ug/L	1.00	05/28/1999 12:44	
2-Butanone(MEK)	ND	50	ug/L	1.00	05/28/1999 12:44	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Chloroform	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Chloromethane	ND	1.0	ug/L	1.00	05/28/1999 12:44	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	05/28/1999 12:44	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Dibromomethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,2-Dichloroethene (cis)	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,2-Dichloroethene (trans)	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Ethylbenzene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
2-Hexanone	ND	50	ug/L	1.00	05/28/1999 12:44	
Methylene chloride	ND	5.0	ug/L	1.00	05/28/1999 12:44	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	05/28/1999 12:44	
Naphthalene	ND	1.0	ug/L	1.00	05/28/1999 12:44	
Styrene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Tetrachloroethene	ND	0.50	ug/L	1.00	05/28/1999 12:44	

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# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

## Volatile Organic Compounds

Sample ID: ABC-GWDCE-4	Lab Sample ID: 1999-05-1214-008
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:15	Extracted: 05/28/1999 12:44
Matrix: Water	QC-Batch: 1999/05/28-01.07

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Toluene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Trichloroethene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Vinyl acetate	ND	5.0	ug/L	1.00	05/28/1999 12:44	
Vinyl chloride	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Total xylenes	ND	1.0	ug/L	1.00	05/28/1999 12:44	
Trichlorotrifluoroethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Carbon disulfide	ND	1.0	ug/L	1.00	05/28/1999 12:44	
Isopropylbenzene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Bromobenzene	ND	0.50	ug/L	1.00	05/28/1999 12:44	
Bromochloromethane	ND	1.0	ug/L	1.00	05/28/1999 12:44	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/28/1999 12:44	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	95.1	86-115	%	1.00	05/28/1999 12:44	
1,2-Dichloroethane-d4	119.7	76-114	%	1.00	05/28/1999 12:44	sh
Toluene-d8	112.3	88-110	%	1.00	05/28/1999 12:44	sh

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1195

To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

## Volatile Organic Compounds

Sample ID: <b>ABC-GWDCE-5</b>	Lab Sample ID: <b>1999-05-1195-003</b>
Project:	Received: <b>05/20/1999 19:00</b>
Sampled: <b>05/20/1999 13:45</b>	Extracted: <b>05/27/1999 15:14</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/27-01.09</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	ND	50	ug/L	1.00	05/27/1999 15:14	
Benzene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Bromoform	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Bromomethane	ND	1.0	ug/L	1.00	05/27/1999 15:14	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Chlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Chloroethane	ND	1.0	ug/L	1.00	05/27/1999 15:14	
2-Butanone(MEK)	ND	50	ug/L	1.00	05/27/1999 15:14	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Chloroform	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Chloromethane	ND	1.0	ug/L	1.00	05/27/1999 15:14	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	05/27/1999 15:14	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Dibromomethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,2-Dichloroethene (cis)	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,2-Dichloroethene (trans)	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Ethylbenzene	0.58	0.50	ug/L	1.00	05/27/1999 15:14	
2-Hexanone	ND	50	ug/L	1.00	05/27/1999 15:14	
Methylene chloride	ND	5.0	ug/L	1.00	05/27/1999 15:14	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	05/27/1999 15:14	
Naphthalene	ND	1.0	ug/L	1.00	05/27/1999 15:14	
Styrene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Tetrachloroethene	ND	0.50	ug/L	1.00	05/27/1999 15:14	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

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To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

Volatile Organic Compounds

Sample ID: <b>ABC-GWDCE-5</b>	Lab Sample ID: <b>1999-05-1195-003</b>
Project:	Received: <b>05/20/1999 19:00</b>
Sampled: <b>05/20/1999 13:45</b>	Extracted: <b>05/27/1999 15:14</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/27-01.09</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Toluene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Trichloroethene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Vinyl acetate	ND	5.0	ug/L	1.00	05/27/1999 15:14	
Vinyl chloride	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Total xylenes	2.8	1.0	ug/L	1.00	05/27/1999 15:14	
Trichlorotrifluoroethane	ND	3.0	ug/L	1.00	05/27/1999 15:14	
Carbon disulfide	ND	1.0	ug/L	1.00	05/27/1999 15:14	
Isopropylbenzene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Bromobenzene	ND	0.50	ug/L	1.00	05/27/1999 15:14	
Bromochloromethane	ND	1.0	ug/L	1.00	05/27/1999 15:14	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/27/1999 15:14	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	97.3	86-115	%	1.00	05/27/1999 15:14	
1,2-Dichloroethane-d4	99.1	76-114	%	1.00	05/27/1999 15:14	
Toluene-d8	101.7	88-110	%	1.00	05/27/1999 15:14	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1195

To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

## Volatile Organic Compounds

Sample ID: <b>ABC-GWDCE-6</b>	Lab Sample ID: <b>1999-05-1195-004</b>
Project:	Received: <b>05/20/1999 19:00</b>
Sampled: <b>05/20/1999 14:00</b>	Extracted: <b>05/26/1999 16:37</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/26-01.07</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	ND	50	ug/L	1.00	05/26/1999 16:37	
Benzene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Bromoform	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Bromomethane	ND	1.0	ug/L	1.00	05/26/1999 16:37	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Chlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Chloroethane	ND	1.0	ug/L	1.00	05/26/1999 16:37	
2-Butanone(MEK)	ND	50	ug/L	1.00	05/26/1999 16:37	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Chloroform	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Chloromethane	ND	1.0	ug/L	1.00	05/26/1999 16:37	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	05/26/1999 16:37	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Dibromomethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,2-Dichloroethene (cis)	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,2-Dichloroethene (trans)	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Ethylbenzene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
2-Hexanone	ND	50	ug/L	1.00	05/26/1999 16:37	
Methylene chloride	ND	5.0	ug/L	1.00	05/26/1999 16:37	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	05/26/1999 16:37	
Naphthalene	ND	1.0	ug/L	1.00	05/26/1999 16:37	
Styrene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Tetrachloroethene	ND	0.50	ug/L	1.00	05/26/1999 16:37	

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To: **URS Greiner Woodward Clyde- Oakland**  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

Volatile Organic Compounds

Sample ID: <b>ABC-GWDCE-6</b>	Lab Sample ID: <b>1999-05-1195-004</b>
Project:	Received: <b>05/20/1999 19:00</b>
Sampled: <b>05/20/1999 14:00</b>	Extracted: <b>05/26/1999 16:37</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/26-01.07</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Toluene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Trichloroethene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Vinyl acetate	ND	5.0	ug/L	1.00	05/26/1999 16:37	
Vinyl chloride	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Total xylenes	ND	1.0	ug/L	1.00	05/26/1999 16:37	
Trichlorotrifluoroethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Carbon disulfide	ND	1.0	ug/L	1.00	05/26/1999 16:37	
Isopropylbenzene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Bromobenzene	ND	0.50	ug/L	1.00	05/26/1999 16:37	
Bromochloromethane	ND	1.0	ug/L	1.00	05/26/1999 16:37	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/26/1999 16:37	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	93.4	86-115	%	1.00	05/26/1999 16:37	
1,2-Dichloroethane-d4	102.8	76-114	%	1.00	05/26/1999 16:37	
Toluene-d8	104.7	88-110	%	1.00	05/26/1999 16:37	

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

Volatile Organic Compounds

Sample ID: <b>TRIP BLANK</b>	Lab Sample ID: <b>1999-05-1195-005</b>
Project:	Received: <b>05/20/1999 19:00</b>
Sampled: <b>05/20/1999 15:45</b>	Extracted: <b>05/26/1999 14:13</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/26-01.07</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	ND	50	ug/L	1.00	05/26/1999 14:13	
Benzene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Bromoform	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Bromomethane	ND	1.0	ug/L	1.00	05/26/1999 14:13	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Chlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Chloroethane	ND	1.0	ug/L	1.00	05/26/1999 14:13	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Chloroform	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Chloromethane	ND	1.0	ug/L	1.00	05/26/1999 14:13	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	05/26/1999 14:13	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Dibromomethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,2-Dichloroethene (cis)	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,2-Dichloroethene (trans)	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Ethylbenzene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
2-Hexanone	ND	50	ug/L	1.00	05/26/1999 14:13	
Methylene chloride	ND	5.0	ug/L	1.00	05/26/1999 14:13	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	05/26/1999 14:13	
Naphthalene	ND	1.0	ug/L	1.00	05/26/1999 14:13	
Styrene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Tetrachloroethene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Toluene	ND	0.50	ug/L	1.00	05/26/1999 14:13	

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To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

Volatile Organic Compounds

Sample ID: TRIP BLANK	Lab Sample ID: 1999-05-1195-005
Project:	Received: 05/20/1999 19:00
Sampled: 05/20/1999 15:45	Extracted: 05/26/1999 14:13
Matrix: Water	QC-Batch: 1999/05/26-01.07

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Trichloroethene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Vinyl acetate	ND	5.0	ug/L	1.00	05/26/1999 14:13	
Vinyl chloride	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Total xylenes	ND	1.0	ug/L	1.00	05/26/1999 14:13	
Trichlorotrifluoroethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Carbon disulfide	ND	1.0	ug/L	1.00	05/26/1999 14:13	
Isopropylbenzene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Bromobenzene	ND	0.50	ug/L	1.00	05/26/1999 14:13	
Bromochloromethane	ND	1.0	ug/L	1.00	05/26/1999 14:13	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/26/1999 14:13	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	94.5	86-115	%	1.00	05/26/1999 14:13	
1,2-Dichloroethane-d4	99.5	76-114	%	1.00	05/26/1999 14:13	
Toluene-d8	104.1	88-110	%	1.00	05/26/1999 14:13	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-12-009

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

## Volatile Organic Compounds

Sample ID: <b>ABC-PURGE</b>	Lab Sample ID: 1999-05-12-009
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:30	Extracted: 05/27/1999 18:27
Matrix: Water	QC-Batch: 1999/05/27-01.09

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	ND	50	ug/L	1.00	05/27/1999 18:27	
Benzene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Bromofluoromethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Bromomethane	ND	1.0	ug/L	1.00	05/27/1999 18:27	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Chlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Chloroethane	ND	1.0	ug/L	1.00	05/27/1999 18:27	
2-Butanone(MEK)	ND	50	ug/L	1.00	05/27/1999 18:27	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Chloroform	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Chloromethane	ND	1.0	ug/L	1.00	05/27/1999 18:27	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	05/27/1999 18:27	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Dibromomethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,2-Dichloroethene (cis)	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,2-Dichloroethene (trans)	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Ethylbenzene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
2-Hexanone	ND	50	ug/L	1.00	05/27/1999 18:27	
Methylene chloride	ND	5.0	ug/L	1.00	05/27/1999 18:27	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	05/27/1999 18:27	
Naphthalene	ND	1.0	ug/L	1.00	05/27/1999 18:27	
Styrene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Tetrachloroethene	ND	0.50	ug/L	1.00	05/27/1999 18:27	

1220 Quarry Lane \* Pleasanton, CA 94566-7756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: **URS Greiner Woodward Clyde- Oakland**  
 Attn.: April Cangerelli

Test Method: 8260A  
 Prep Method: 5030

Volatile Organic Compounds

Sample ID: <b>ABC-PURGE</b>	Lab Sample ID: <b>1999-05-1214-009</b>
Project:	Received: <b>05/21/1999 21:05</b>
Sampled: <b>05/21/1999 14:30</b>	Extracted: <b>05/27/1999 18:27</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/27-01.09</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Toluene	9.2	0.50	ug/L	1.00	05/27/1999 18:27	
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Trichloroethene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Vinyl acetate	ND	5.0	ug/L	1.00	05/27/1999 18:27	
Vinyl chloride	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Total xylenes	1.2	1.0	ug/L	1.00	05/27/1999 18:27	
Trichlorotrifluoroethane	ND	3.0	ug/L	1.00	05/27/1999 18:27	
Carbon disulfide	ND	1.0	ug/L	1.00	05/27/1999 18:27	
Isopropylbenzene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Bromobenzene	ND	0.50	ug/L	1.00	05/27/1999 18:27	
Bromochloromethane	ND	1.0	ug/L	1.00	05/27/1999 18:27	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/27/1999 18:27	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	92.0	86-115	%	1.00	05/27/1999 18:27	
1,2-Dichloroethane-d4	96.6	76-114	%	1.00	05/27/1999 18:27	
Toluene-d8	98.7	8-110	%	1.00	05/27/1999 18:27	

# CHROMALAB, INC.

Submission #: 1999-05-1214

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

## Volatile Organic Compounds

Sample ID: ABC-EQBLK	Lab Sample ID: 1999-05-1214-010
Project:	Received: 05/21/1999 21:05
Sampled: 05/21/1999 14:40	Extracted: 05/27/1999 17:48
Matrix: Water	QC-Batch: 1999/05/27-01.09

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	ND	50	ug/L	1.00	05/27/1999 17:48	
Benzene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Bromoform	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Bromomethane	ND	1.0	ug/L	1.00	05/27/1999 17:48	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Chlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Chloroethane	ND	1.0	ug/L	1.00	05/27/1999 17:48	
2-Butanone(ME K)	ND	50	ug/L	1.00	05/27/1999 17:48	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Chloroform	0.71	0.50	ug/L	1.00	05/27/1999 17:48	
Chloromethane	ND	1.0	ug/L	1.00	05/27/1999 17:48	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	05/27/1999 17:48	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Dibromomethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,2-Dichloroethene (cis)	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,2-Dichloroethene (trans)	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Ethylbenzene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
2-Hexanone	ND	50	ug/L	1.00	05/27/1999 17:48	
Methylene chloride	ND	5.0	ug/L	1.00	05/27/1999 17:48	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	05/27/1999 17:48	
Naphthalene	ND	1.0	ug/L	1.00	05/27/1999 17:48	
Styrene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Tetrachloroethene	ND	0.50	ug/L	1.00	05/27/1999 17:48	

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Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

Volatile Organic Compounds

Sample ID: <b>ABC-EQBLK</b>	Lab Sample ID: <b>1999-05-1214-010</b>
Project:	Received: <b>05/21/1999 21:05</b>
Sampled: <b>05/21/1999 14:40</b>	Extracted: <b>05/27/1999 17:48</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/27-01.09</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Toluene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Trichloroethene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Vinyl acetate	ND	5.0	ug/L	1.00	05/27/1999 17:48	
Vinyl chloride	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Total xylenes	ND	1.0	ug/L	1.00	05/27/1999 17:48	
Trichlorotrifluoroethane	ND	3.0	ug/L	1.00	05/27/1999 17:48	
Carbon disulfide	ND	1.0	ug/L	1.00	05/27/1999 17:48	
Isopropylbenzene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Bromobenzene	ND	0.50	ug/L	1.00	05/27/1999 17:48	
Bromochloromethane	ND	1.0	ug/L	1.00	05/27/1999 17:48	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/27/1999 17:48	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	97.0	86-115	%	1.00	05/27/1999 17:48	
1,2-Dichloroethane-d4	107.9	76-114	%	1.00	05/27/1999 17:48	
Toluene-d8	103.5	88-110	%	1.00	05/27/1999 17:48	

To: **URS Greiner Woodward Clyde- Oakland**  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

**Batch QC Report**  
 Volatile Organic Compounds

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/27-01.09</b>
MB: 1999/05/27-01.09-001		Date Extracted: 05/27/1999 13:19

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Acetone	ND	50	ug/L	05/27/1999 13:19	
Benzene	ND	0.5	ug/L	05/27/1999 13:19	
Bromodichloromethane	ND	0.5	ug/L	05/27/1999 13:19	
Bromoform	ND	0.5	ug/L	05/27/1999 13:19	
Bromomethane	ND	1.0	ug/L	05/27/1999 13:19	
Carbon tetrachloride	ND	0.5	ug/L	05/27/1999 13:19	
Chlorobenzene	ND	0.5	ug/L	05/27/1999 13:19	
Chloroethane	ND	1.0	ug/L	05/27/1999 13:19	
2-Butanone(MEK)	ND	50	ug/L	05/27/1999 13:19	
2-Chloroethylvinyl ether	ND	0.5	ug/L	05/27/1999 13:19	
Chloroform	ND	0.5	ug/L	05/27/1999 13:19	
Chloromethane	ND	1.0	ug/L	05/27/1999 13:19	
Dibromochloromethane	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dichlorobenzene	ND	0.5	ug/L	05/27/1999 13:19	
1,3-Dichlorobenzene	ND	0.5	ug/L	05/27/1999 13:19	
1,4-Dichlorobenzene	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	05/27/1999 13:19	
1,2-Dibromoethane	ND	0.5	ug/L	05/27/1999 13:19	
Dibromomethane	ND	0.5	ug/L	05/27/1999 13:19	
1,1-Dichloroethane	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dichloroethane	ND	0.5	ug/L	05/27/1999 13:19	
1,1-Dichloroethene	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dichloroethene (cis)	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dichloroethene (trans)	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dichloropropane	ND	0.5	ug/L	05/27/1999 13:19	
cis-1,3-Dichloropropene	ND	0.5	ug/L	05/27/1999 13:19	
trans-1,3-Dichloropropene	ND	0.5	ug/L	05/27/1999 13:19	
Ethylbenzene	ND	0.5	ug/L	05/27/1999 13:19	
2-Hexanone	ND	50	ug/L	05/27/1999 13:19	
Methylene chloride	ND	5.0	ug/L	05/27/1999 13:19	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	05/27/1999 13:19	
Naphthalene	ND	1.0	ug/L	05/27/1999 13:19	
Styrene	ND	0.5	ug/L	05/27/1999 13:19	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	05/27/1999 13:19	



To: **URS Greiner Woodward Clyde- Oakland**  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

**Batch QC Report**  
 Volatile Organic Compounds

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/27-01.09</b>
MB: 1999/05/27-01.09-001		Date Extracted: 05/27/1999 13:19

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Tetrachloroethene	ND	0.5	ug/L	05/27/1999 13:19	
Toluene	ND	0.5	ug/L	05/27/1999 13:19	
1,1,1-Trichloroethane	ND	0.5	ug/L	05/27/1999 13:19	
1,1,2-Trichloroethane	ND	0.5	ug/L	05/27/1999 13:19	
Trichloroethene	ND	0.5	ug/L	05/27/1999 13:19	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	05/27/1999 13:19	
Vinyl acetate	ND	5.0	ug/L	05/27/1999 13:19	
Vinyl chloride	ND	0.5	ug/L	05/27/1999 13:19	
Total xylenes	ND	1.0	ug/L	05/27/1999 13:19	
Trichlorotrifluoroethane	ND	3.0	ug/L	05/27/1999 13:19	
Carbon disulfide	ND	1.0	ug/L	05/27/1999 13:19	
Isopropylbenzene	ND	0.5	ug/L	05/27/1999 13:19	
Bromobenzene	ND	0.5	ug/L	05/27/1999 13:19	
Bromochloromethane	ND	1.0	ug/L	05/27/1999 13:19	
Trichlorofluoromethane	ND	0.5	ug/L	05/27/1999 13:19	
<b>Surrogate(s)</b>					
4-Bromofluorobenzene	91.3	86-115	%	05/27/1999 13:19	
1,2-Dichloroethane-d4	80.1	76-114	%	05/27/1999 13:19	
Toluene-d8	109.9	88-110	%	05/27/1999 13:19	

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

**Batch QC Report**  
 Volatile Organic Compounds

Method Blank	Water	QC Batch # 1999/05/27-01.09
MB: 1999/05/27-01.09-001		Date Extracted: 05/27/1999 13:19

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Acetone	ND	50	ug/L	05/27/1999 13:19	
Benzene	ND	0.5	ug/L	05/27/1999 13:19	
Bromodichloromethane	ND	0.5	ug/L	05/27/1999 13:19	
Bromoform	ND	0.5	ug/L	05/27/1999 13:19	
Bromomethane	ND	1.0	ug/L	05/27/1999 13:19	
Carbon tetrachloride	ND	0.5	ug/L	05/27/1999 13:19	
Chlorobenzene	ND	0.5	ug/L	05/27/1999 13:19	
Chloroethane	ND	1.0	ug/L	05/27/1999 13:19	
2-Butanone(MEK)	ND	50	ug/L	05/27/1999 13:19	
2-Chloroethylvinyl ether	ND	0.5	ug/L	05/27/1999 13:19	
Chloroform	ND	0.5	ug/L	05/27/1999 13:19	
Chloromethane	ND	1.0	ug/L	05/27/1999 13:19	
Dibromochloromethane	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dichlorobenzene	ND	0.5	ug/L	05/27/1999 13:19	
1,3-Dichlorobenzene	ND	0.5	ug/L	05/27/1999 13:19	
1,4-Dichlorobenzene	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	05/27/1999 13:19	
1,2-Dibromoethane	ND	0.5	ug/L	05/27/1999 13:19	
Dibromomethane	ND	0.5	ug/L	05/27/1999 13:19	
1,1-Dichloroethane	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dichloroethane	ND	0.5	ug/L	05/27/1999 13:19	
1,1-Dichloroethene	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dichloroethene (cis)	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dichloroethene (trans)	ND	0.5	ug/L	05/27/1999 13:19	
1,2-Dichloropropane	ND	0.5	ug/L	05/27/1999 13:19	
cis-1,3-Dichloropropene	ND	0.5	ug/L	05/27/1999 13:19	
trans-1,3-Dichloropropene	ND	0.5	ug/L	05/27/1999 13:19	
Ethylbenzene	ND	0.5	ug/L	05/27/1999 13:19	
2-Hexanone	ND	50	ug/L	05/27/1999 13:19	
Methylene chloride	ND	5.0	ug/L	05/27/1999 13:19	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	05/27/1999 13:19	
Naphthalene	ND	1.0	ug/L	05/27/1999 13:19	
Styrene	ND	0.5	ug/L	05/27/1999 13:19	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	05/27/1999 13:19	

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Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

**Batch QC Report**  
 Volatile Organic Compounds

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/27-01.09</b>
MB: 1999/05/27-01.09-001		Date Extracted: 05/27/1999 13:19

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Tetrachloroethene	ND	0.5	ug/L	05/27/1999 13:19	
Toluene	ND	0.5	ug/L	05/27/1999 13:19	
1,1,1-Trichloroethane	ND	0.5	ug/L	05/27/1999 13:19	
1,1,2-Trichloroethane	ND	0.5	ug/L	05/27/1999 13:19	
Trichloroethene	ND	0.5	ug/L	05/27/1999 13:19	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	05/27/1999 13:19	
Vinyl acetate	ND	5.0	ug/L	05/27/1999 13:19	
Vinyl chloride	ND	0.5	ug/L	05/27/1999 13:19	
Total xylenes	ND	1.0	ug/L	05/27/1999 13:19	
Trichlorotrifluoroethane	ND	3.0	ug/L	05/27/1999 13:19	
Carbon disulfide	ND	1.0	ug/L	05/27/1999 13:19	
Isopropylbenzene	ND	0.5	ug/L	05/27/1999 13:19	
Bromobenzene	ND	0.5	ug/L	05/27/1999 13:19	
Bromochloromethane	ND	1.0	ug/L	05/27/1999 13:19	
Trichlorofluoromethane	ND	0.5	ug/L	05/27/1999 13:19	
<b>Surrogate(s)</b>					
4-Bromofluorobenzene	91.3	86-115	%	05/27/1999 13:19	
1,2-Dichloroethane-d4	80.1	76-114	%	05/27/1999 13:19	
Toluene-d8	109.9	88-110	%	05/27/1999 13:19	

To: **URS Greiner Woodward Clyde- Oakland**  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

**Batch QC Report**  
 Volatile Organic Compounds

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/26-01.07</b>
MB: 1999/05/26-01.07-001		Date Extracted: 05/26/1999 11:37

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Acetone	ND	50	ug/L	05/26/1999 11:37	
Benzene	ND	0.5	ug/L	05/26/1999 11:37	
Bromodichloromethane	ND	0.5	ug/L	05/26/1999 11:37	
Bromoform	ND	0.5	ug/L	05/26/1999 11:37	
Bromomethane	ND	1.0	ug/L	05/26/1999 11:37	
Carbon tetrachloride	ND	0.5	ug/L	05/26/1999 11:37	
Chlorobenzene	ND	0.5	ug/L	05/26/1999 11:37	
Chloroethane	ND	1.0	ug/L	05/26/1999 11:37	
2-Butanone(MEK)	ND	50	ug/L	05/26/1999 11:37	
2-Chloroethylvinyl ether	ND	0.5	ug/L	05/26/1999 11:37	
Chloroform	ND	0.5	ug/L	05/26/1999 11:37	
Chloromethane	ND	1.0	ug/L	05/26/1999 11:37	
Dibromochloromethane	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dichlorobenzene	ND	0.5	ug/L	05/26/1999 11:37	
1,3-Dichlorobenzene	ND	0.5	ug/L	05/26/1999 11:37	
1,4-Dichlorobenzene	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	05/26/1999 11:37	
1,2-Dibromoethane	ND	0.5	ug/L	05/26/1999 11:37	
Dibromomethane	ND	0.5	ug/L	05/26/1999 11:37	
1,1-Dichloroethane	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dichloroethane	ND	0.5	ug/L	05/26/1999 11:37	
1,1-Dichloroethene	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dichloroethene (cis)	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dichloroethene (trans)	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dichloropropane	ND	0.5	ug/L	05/26/1999 11:37	
cis-1,3-Dichloropropene	ND	0.5	ug/L	05/26/1999 11:37	
trans-1,3-Dichloropropene	ND	0.5	ug/L	05/26/1999 11:37	
Ethylbenzene	ND	0.5	ug/L	05/26/1999 11:37	
2-Hexanone	ND	50	ug/L	05/26/1999 11:37	
Methylene chloride	ND	5.0	ug/L	05/26/1999 11:37	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	05/26/1999 11:37	
Naphthalene	ND	1.0	ug/L	05/26/1999 11:37	
Styrene	ND	0.5	ug/L	05/26/1999 11:37	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	05/26/1999 11:37	

To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

**Batch QC Report**  
Volatile Organic Compounds

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/26-01.07</b>
MB: 1999/05/26-01.07-001		Date Extracted: 05/26/1999 11:37

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Tetrachloroethene	ND	0.5	ug/L	05/26/1999 11:37	
Toluene	ND	0.5	ug/L	05/26/1999 11:37	
1,1,1-Trichloroethane	ND	0.5	ug/L	05/26/1999 11:37	
1,1,2-Trichloroethane	ND	0.5	ug/L	05/26/1999 11:37	
Trichloroethene	ND	0.5	ug/L	05/26/1999 11:37	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	05/26/1999 11:37	
Vinyl acetate	ND	5.0	ug/L	05/26/1999 11:37	
Vinyl chloride	ND	0.5	ug/L	05/26/1999 11:37	
Total xylenes	ND	1.0	ug/L	05/26/1999 11:37	
Trichlorotrifluoroethane	ND	0.5	ug/L	05/26/1999 11:37	
Carbon disulfide	ND	1.0	ug/L	05/26/1999 11:37	
Isopropylbenzene	ND	0.5	ug/L	05/26/1999 11:37	
Bromobenzene	ND	0.5	ug/L	05/26/1999 11:37	
Bromochloromethane	ND	1.0	ug/L	05/26/1999 11:37	
Trichlorofluoromethane	ND	0.5	ug/L	05/26/1999 11:37	
<b>Surrogate(s)</b>					
4-Bromofluorobenzene	95.5	86-115	%	05/26/1999 11:37	
1,2-Dichloroethane-d4	104.8	76-114	%	05/26/1999 11:37	
Toluene-d8	106.7	88-110	%	05/26/1999 11:37	

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

**Batch QC Report**  
 Volatile Organic Compounds

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/26-01.07</b>
MB: 1999/05/26-01.07-001		Date Extracted: 05/26/1999 11:37

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Acetone	ND	50	ug/L	05/26/1999 11:37	
Benzene	ND	0.5	ug/L	05/26/1999 11:37	
Bromodichloromethane	ND	0.5	ug/L	05/26/1999 11:37	
Bromoform	ND	0.5	ug/L	05/26/1999 11:37	
Bromomethane	ND	1.0	ug/L	05/26/1999 11:37	
Carbon tetrachloride	ND	0.5	ug/L	05/26/1999 11:37	
Chlorobenzene	ND	0.5	ug/L	05/26/1999 11:37	
Chloroethane	ND	1.0	ug/L	05/26/1999 11:37	
2-Butanone(MEK)	ND	50	ug/L	05/26/1999 11:37	
2-Chloroethylvinyl ether	ND	0.5	ug/L	05/26/1999 11:37	
Chloroform	ND	0.5	ug/L	05/26/1999 11:37	
Chloromethane	ND	1.0	ug/L	05/26/1999 11:37	
Dibromochloromethane	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dichlorobenzene	ND	0.5	ug/L	05/26/1999 11:37	
1,3-Dichlorobenzene	ND	0.5	ug/L	05/26/1999 11:37	
1,4-Dichlorobenzene	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	05/26/1999 11:37	
1,2-Dibromoethane	ND	0.5	ug/L	05/26/1999 11:37	
Dibromomethane	ND	0.5	ug/L	05/26/1999 11:37	
1,1-Dichloroethane	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dichloroethane	ND	0.5	ug/L	05/26/1999 11:37	
1,1-Dichloroethene	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dichloroethene (cis)	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dichloroethene (trans)	ND	0.5	ug/L	05/26/1999 11:37	
1,2-Dichloropropane	ND	0.5	ug/L	05/26/1999 11:37	
cis-1,3-Dichloropropene	ND	0.5	ug/L	05/26/1999 11:37	
trans-1,3-Dichloropropene	ND	0.5	ug/L	05/26/1999 11:37	
Ethylbenzene	ND	0.5	ug/L	05/26/1999 11:37	
2-Hexanone	ND	50	ug/L	05/26/1999 11:37	
Methylene chloride	ND	5.0	ug/L	05/26/1999 11:37	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	05/26/1999 11:37	
Naphthalene	ND	1.0	ug/L	05/26/1999 11:37	
Styrene	ND	0.5	ug/L	05/26/1999 11:37	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	05/26/1999 11:37	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

**Batch QC Report**  
 Volatile Organic Compounds

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/26-01.07</b>
MB: 1999/05/26-01.07-001		Date Extracted: 05/26/1999 11:37

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Tetrachloroethene	ND	0.5	ug/L	05/26/1999 11:37	
Toluene	ND	0.5	ug/L	05/26/1999 11:37	
1,1,1-Trichloroethane	ND	0.5	ug/L	05/26/1999 11:37	
1,1,2-Trichloroethane	ND	0.5	ug/L	05/26/1999 11:37	
Trichloroethene	ND	0.5	ug/L	05/26/1999 11:37	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	05/26/1999 11:37	
Vinyl acetate	ND	5.0	ug/L	05/26/1999 11:37	
Vinyl chloride	ND	0.5	ug/L	05/26/1999 11:37	
Total xylenes	ND	1.0	ug/L	05/26/1999 11:37	
Trichlorotrifluoroethane	ND	0.5	ug/L	05/26/1999 11:37	
Carbon disulfide	ND	1.0	ug/L	05/26/1999 11:37	
Isopropylbenzene	ND	0.5	ug/L	05/26/1999 11:37	
Bromobenzene	ND	0.5	ug/L	05/26/1999 11:37	
Bromochloromethane	ND	1.0	ug/L	05/26/1999 11:37	
Trichlorofluoromethane	ND	0.5	ug/L	05/26/1999 11:37	
<b>Surrogate(s)</b>					
4-Bromofluorobenzene	95.5	86-115	%	05/26/1999 11:37	
1,2-Dichloroethane-d4	104.8	76-114	%	05/26/1999 11:37	
Toluene-d8	106.7	88-110	%	05/26/1999 11:37	

Environmental Services (SDB)

To: **URS Greiner Woodward Clyde- Oakland**  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

**Batch QC Report**  
 Volatile Organic Compounds

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/28-01.07</b>
MB: 1999/05/28-01.07-001		Date Extracted: 05/28/1999 11:24

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Acetone	ND	50	ug/L	05/28/1999 11:24	
Benzene	ND	0.5	ug/L	05/28/1999 11:24	
Bromodichloromethane	ND	0.5	ug/L	05/28/1999 11:24	
Bromoform	ND	0.5	ug/L	05/28/1999 11:24	
Bromomethane	ND	1.0	ug/L	05/28/1999 11:24	
Carbon tetrachloride	ND	0.5	ug/L	05/28/1999 11:24	
Chlorobenzene	ND	0.5	ug/L	05/28/1999 11:24	
Chloroethane	ND	1.0	ug/L	05/28/1999 11:24	
2-Butanone(MEK)	ND	50	ug/L	05/28/1999 11:24	
2-Chloroethylvinyl ether	ND	0.5	ug/L	05/28/1999 11:24	
Chloroform	ND	0.5	ug/L	05/28/1999 11:24	
Chloromethane	ND	1.0	ug/L	05/28/1999 11:24	
Dibromochloromethane	ND	0.5	ug/L	05/28/1999 11:24	
1,2-Dichlorobenzene	ND	0.5	ug/L	05/28/1999 11:24	
1,3-Dichlorobenzene	ND	0.5	ug/L	05/28/1999 11:24	
1,4-Dichlorobenzene	ND	0.5	ug/L	05/28/1999 11:24	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	05/28/1999 11:24	
1,2-Dibromoethane	ND	0.5	ug/L	05/28/1999 11:24	
Dibromomethane	ND	0.5	ug/L	05/28/1999 11:24	
1,1-Dichloroethane	ND	0.5	ug/L	05/28/1999 11:24	
1,2-Dichloroethane	ND	0.5	ug/L	05/28/1999 11:24	
1,1-Dichloroethene	ND	0.5	ug/L	05/28/1999 11:24	
1,2-Dichloroethene (cis)	ND	0.5	ug/L	05/28/1999 11:24	
1,2-Dichloroethene (trans)	ND	0.5	ug/L	05/28/1999 11:24	
1,2-Dichloropropane	ND	0.5	ug/L	05/28/1999 11:24	
cis-1,3-Dichloropropene	ND	0.5	ug/L	05/28/1999 11:24	
trans-1,3-Dichloropropene	ND	0.5	ug/L	05/28/1999 11:24	
Ethylbenzene	ND	0.5	ug/L	05/28/1999 11:24	
2-Hexanone	ND	50	ug/L	05/28/1999 11:24	
Methylene chloride	ND	5.0	ug/L	05/28/1999 11:24	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	05/28/1999 11:24	
Naphthalene	ND	1.0	ug/L	05/28/1999 11:24	
Styrene	ND	0.5	ug/L	05/28/1999 11:24	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	05/28/1999 11:24	



Environmental Services (SDB)

To: **URS Greiner Woodward Clyde- Oakland**  
 Attn.: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

**Batch QC Report**  
 Volatile Organic Compounds

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/28-01.07</b>
MB: 1999/05/28-01.07-001		Date Extracted: 05/28/1999 11:24

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Tetrachloroethene	ND	0.5	ug/L	05/28/1999 11:24	
Toluene	ND	0.5	ug/L	05/28/1999 11:24	
1,1,1-Trichloroethane	ND	0.5	ug/L	05/28/1999 11:24	
1,1,2-Trichloroethane	ND	0.5	ug/L	05/28/1999 11:24	
Trichloroethene	ND	0.5	ug/L	05/28/1999 11:24	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	05/28/1999 11:24	
Vinyl acetate	ND	5.0	ug/L	05/28/1999 11:24	
Vinyl chloride	ND	0.5	ug/L	05/28/1999 11:24	
Total xylenes	ND	1.0	ug/L	05/28/1999 11:24	
Trichlorotrifluoroethane	ND	0.5	ug/L	05/28/1999 11:24	
Carbon disulfide	ND	1.0	ug/L	05/28/1999 11:24	
Isopropylbenzene	ND	0.5	ug/L	05/28/1999 11:24	
Bromobenzene	ND	0.5	ug/L	05/28/1999 11:24	
Bromochloromethane	ND	1.0	ug/L	05/28/1999 11:24	
Trichlorofluoromethane	ND	0.5	ug/L	05/28/1999 11:24	
<b>Surrogate(s)</b>					
4-Bromofluorobenzene	94.7	86-115	%	05/28/1999 11:24	
1,2-Dichloroethane-d4	104.0	76-114	%	05/28/1999 11:24	
Toluene-d8	106.1	88-110	%	05/28/1999 11:24	

To: **URS Greiner Woodward Clyde- Oakland**

Test Method: 8260A

Attn: April Giangerelli

Prep Method: 5030

## Batch QC Report

### Volatile Organic Compounds

<b>Laboratory Control Spike (LCS/LCSD)</b>	<b>Water</b>	<b>QC Batch # 1999/05/27-01.09</b>
LCS: 1999/05/27-01.09-002	Extracted: 05/27/1999 11:52	Analyzed: 05/27/1999 11:52
LCSD: 1999/05/27-01.09-003	Extracted: 05/27/1999 12:41	Analyzed: 05/27/1999 12:41

Compound	Conc. [ ug/L ]		Exp. Conc. [ ug/L ]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Benzene	50.2	52.5	50	50	100.4	105.0	4.5	69-129	20		
Chlorobenzene	55.1	56.9	50	50	110.2	113.8	3.2	61-121	20		
1,1-Dichloroethene	48.5	48.3	50	50	97.0	96.6	0.4	65-125	20		
Toluene	50.2	50.1	50	50	100.4	100.2	0.2	70-130	20		
Trichloroethene	48.3	50.4	50	50	96.6	100.8	4.3	74-134	20		
<b>Surrogate(s)</b>											
4-Bromofluorobenzene	498.43	485.62	500	500	99.7	97.1		86-115			
1,2-Dichloroethane-d4	432.80	406.55	500	500	86.6	81.3		76-114			
Toluene-d8	527.27	522.37	500	500	105.5	104.5		88-110			

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn: April Giangerelli

Prep Method: 5030

**Batch QC Report**

Volatile Organic Compounds

Laboratory Control Spike (LCS/LCSD)		Water		QC Batch # 1999/05/26-01.07	
LCS:	1999/05/26-01.07-002	Extracted:	05/26/1999 09:36	Analyzed:	05/26/1999 09:36
LCSD:	1999/05/26-01.07-003	Extracted:	05/26/1999 10:15	Analyzed:	05/26/1999 10:15

Compound	Conc. [ ug/L ]		Exp.Conc. [ ug/L ]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD	Recovery	RPD	LCS	LCSD
Benzene	512.33	521.73	500	500	102.5	104.3	1.7	69-129	20		
Chlorobenzene	506.53	520.32	500	500	101.3	104.1	2.7	61-121	20		
1,1-Dichloroethene	454.15	463.14	500	500	90.8	92.6	2.0	65-125	20		
Toluene	509.22	515.04	500	500	101.8	103.0	1.2	70-130	20		
Trichloroethene	490.51	495.07	500	500	98.1	99.0	0.9	74-134	20		
<b>Surrogate(s)</b>											
4-Bromofluorobenzene	486.27	489.46	500	500	97.3	97.9		86-115			
1,2-Dichloroethane-d4	490.86	501.49	500	500	98.2	100.3		76-114			
Toluene-d8	529.11	529.41	500	500	105.8	105.9		88-110			

Environmental Services (SDB)

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn: April Giangerelli

Prep Method: 5030

## Batch QC Report

### Volatile Organic Compounds

Laboratory Control Spike (LCS/LCSD)	Water	QC Batch # 1999/05/28-01.07
LCS: 1999/05/28-01.07-002	Extracted: 05/28/1999 10:07	Analyzed: 05/28/1999 10:07
LCSD: 1999/05/28-01.07-003	Extracted: 05/28/1999 10:45	Analyzed: 05/28/1999 10:45

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%]			Ctrl. Limits [%]		Flags
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD [%]	Recovery	RPD	
Benzene	53.5	54.8	50.0	50.0	107.0	109.6	2.4	69-129	20	
Chlorobenzene	52.9	54.4	50.0	50.0	105.8	108.8	2.8	61-121	20	
1,1-Dichloroethene	41.1	42.3	50.0	50.0	82.2	84.6	2.9	65-125	20	
Toluene	52.6	54.4	50.0	50.0	105.2	108.8	3.4	70-130	20	
Trichloroethene	50.7	52.0	50.0	50.0	101.4	104.0	2.5	74-134	20	
<b>Surrogate(s)</b>										
4-Bromofluorobenzene	450.80	446.09	500	500	90.2	89.2		86-115		
1,2-Dichloroethane-d4	493.12	479.01	500	500	98.6	95.8		76-114		
Toluene-d8	503.48	498.63	500	500	100.7	99.7		88-110		

Environmental Services (SDB)

To: **URS Greiner Woodward Clyde- Oakland**  
 Attn: April Giangerelli

Test Method: 8260A  
 Prep Method: 5030

**Batch QC Report**  
 Volatile Organic Compounds

<b>Laboratory Control Spike (LCS/LCSD)</b>	<b>Water</b>		<b>QC Batch # 1999/05/27-01.09</b>	
LCS: 1999/05/27-01.09-002	Extracted: 05/27/1999 11:52	Analyzed: 05/27/1999 11:52		
LCSD: 1999/05/27-01.09-003	Extracted: 05/27/1999 12:41	Analyzed: 05/27/1999 12:41		

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD [%]	Recovery	RPD	LCS	LCSD
Benzene	50.2	52.5	50	50	100.4	105.0	4.5	69-129	20		
Chlorobenzene	55.1	56.9	50	50	110.2	113.8	3.2	61-121	20		
1,1-Dichloroethene	48.5	48.3	50	50	97.0	96.6	0.4	65-125	20		
Toluene	50.2	50.1	50	50	100.4	100.2	0.2	70-130	20		
Trichloroethene	48.3	50.4	50	50	96.6	100.8	4.3	74-134	20		
<b>Surrogate(s)</b>											
4-Bromofluorobenzene	498.43	485.62	500	500	99.7	97.1		86-115			
1,2-Dichloroethane-d4	432.80	406.55	500	500	86.6	81.3		76-114			
Toluene-d8	527.27	522.37	500	500	105.5	104.5		88-110			

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn: April Giangerelli

Prep Method: 5030

## Batch QC Report

### Volatile Organic Compounds

<b>Laboratory Control Spike (LCS/LCSD)</b>		<b>Water</b>		<b>QC Batch # 1999/05/26-01.07</b>	
LCS:	1999/05/26-01.07-002	Extracted:	05/26/1999 09:36	Analyzed:	05/26/1999 09:36
LCSD:	1999/05/26-01.07-003	Extracted:	05/26/1999 10:15	Analyzed:	05/26/1999 10:15

Compound	Conc. [ ug/L ]		Exp. Conc. [ ug/L ]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Benzene	512.33	521.73	500	500	102.5	104.3	1.7	69-129	20		
Chlorobenzene	506.53	520.32	500	500	101.3	104.1	2.7	61-121	20		
1,1-Dichloroethene	454.15	463.14	500	500	90.8	92.6	2.0	65-125	20		
Toluene	509.22	515.04	500	500	101.8	103.0	1.2	70-130	20		
Trichloroethene	490.51	495.07	500	500	98.1	99.0	0.9	74-134	20		
<b>Surrogate(s)</b>											
4-Bromofluorobenzene	486.27	489.46	500	500	97.3	97.9		86-115			
1,2-Dichloroethane-d4	490.86	501.49	500	500	98.2	100.3		76-114			
Toluene-d8	529.11	529.41	500	500	105.8	105.9		88-110			

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

## Batch QC Report

### Volatile Organic Compounds

Matrix Spike ( MS / MSD )

Water

QC Batch # 1999/05/26-01.07

Sample ID: ABC-GWDCE-6

Lab Sample ID: 1999-05-1195-004

MS: 1999/05/26-01.07-004 Extracted: 05/26/1999 17:17 Analyzed: 05/26/1999 17:17 Dilution: 1.0

MSD: 1999/05/26-01.07-005 Extracted: 05/26/1999 17:56 Analyzed: 05/26/1999 17:56 Dilution: 1.0

Compound	Conc. [ ug/L ]			Exp. Conc. [ ug/L ]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD		Recovery	RPD	MS	MSD
Benzene	532.76	515.66	ND	500	500	106.6	103.1	3.3	69-129	20		
Chlorobenzene	528.14	507.61	ND	500	500	105.6	101.5	4.0	61-121	20		
1,1-Dichloroethene	472.16	442.28	ND	500	500	94.4	88.5	6.5	65-125	20		
Toluene	534.29	509.53	ND	500	500	106.9	101.9	4.8	70-130	20		
Trichloroethene	506.13	478.80	ND	500	500	101.2	95.8	5.5	74-134	20		
<b>Surrogate(s)</b>												
4-Bromofluorobenzene	457.82	458.13		500	500	91.6	91.6		86-115			
1,2-Dichloroethane-d4	493.01	514.44		500	500	98.6	102.9		78-114			
Toluene-d8	508.33	512.78		500	500	101.7	102.6		88-110			

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1214

To: URS Greiner Woodward Clyde- Oakland

Test Method: 8260A

Attn.: April Giangerelli

Prep Method: 5030

## Batch QC Report

Volatile Organic Compounds

Matrix Spike ( MS / MSD )

Water

QC Batch # 1999/05/26-01.07

Sample ID: ABC-GWDCE-6

Lab Sample ID: 1999-05-1195-004

MS: 1999/05/26-01.07-004 Extracted: 05/26/1999 17:17 Analyzed: 05/26/1999 17:17 Dilution: 1.0

MSD: 1999/05/26-01.07-005 Extracted: 05/26/1999 17:56 Analyzed: 05/26/1999 17:56 Dilution: 1.0

Compound	Conc. [ug/L]		Sample	Exp. Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	MS	MSD		MS	MSD	MS	MSD		Recovery	RPD	MS	MSD
Benzene	532.76	515.66	ND	500	500	106.6	103.1	3.3	69-129	20		
Chlorobenzene	528.14	507.61	ND	500	500	105.6	101.5	4.0	61-121	20		
1,1-Dichloroethene	472.16	442.28	ND	500	500	94.4	88.5	6.5	65-125	20		
Toluene	534.29	509.53	ND	500	500	106.9	101.9	4.8	70-130	20		
Trichloroethene	506.13	478.80	ND	500	500	101.2	95.8	5.5	74-134	20		
<b>Surrogate(s)</b>												
4-Bromofluorobenzene	457.82	458.13		500	500	91.6	91.6		86-115			
1,2-Dichloroethane-d4	493.01	514.44		500	500	98.6	102.9		76-114			
Toluene-d8	508.33	512.78		500	500	101.7	102.6		88-110			

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096



Environmental Services (SDB)

---

To: **URS Greiner Woodward Clyde- Oakland**  
Attn: April Giangerelli

Test Method: 8260A  
Prep Method: 5030

## Legend & Notes

Volatile Organic Compounds

### Analyte Flags

sh

Surrogate recoveries were higher than QC limits due to matrix interference.

# @AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

## WORK ORDER #: 9905388

### Work Order Summary

**CLIENT:** Mr. Ken Wright  
Chromalab, Inc.  
1220 Quarry Lane  
Pleasanton, CA 94566

**BILL TO:** Same

**PHONE:** 925-484-1919  
**FAX:** 925-484-1096  
**DATE RECEIVED:** 5/25/99  
**DATE COMPLETED:** 6/9/99

**P.O. # NR**  
**PROJECT # 99-05-1195**

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	ABC-GWDCE-1	Mod. SW-846 Method 3810
02A	ABC-GWDCE-2	Mod. SW-846 Method 3810
02AA	ABC-GWDCE-2 Duplicate	Mod. SW-846 Method 3810
03A	ABC-GWTPH-1	Mod. SW-846 Method 3810
03AA	ABC-GWTPH-1 Duplicate	Mod. SW-846 Method 3810
04A	Lab Blank	Mod. SW-846 Method 3810
05A	Method Spike	Mod. SW-846 Method 3810

CERTIFIED BY:

*John Swanson for:*  
Laboratory Director

DATE:

*6-9-99*

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA 95630  
(916) 985-1000 • (800) 985-5955 • FAX (916) 985-1020

# AIR TOXICS LTD.

Modified SW-846 Method 3810  
GC/FID/TCD

Field Sample I.D.	Lab Sample I.D.	File Name	Sample Date	Analyzed For	Dilution Factor	Det. Limit (uG/mL)	Amount (uG/mL)
ABC-GWDCE-1	9905388-01A	7052503	5/20/99	Methane	1.00	0.010	0.026 J
		7052708		Carbon Dioxide	1.00	1.0	120
ABC-GWDCE-2	9905388-02A	7052504	5/20/99	Methane	1.00	0.010	0.025 J
		7052707		Carbon Dioxide	1.00	1.0	21
ABC-GWDCE-2 Duplicate	9905388-02AA	7052708	5/20/99	Carbon Dioxide	1.00	1.0	25
ABC-GWTPH-1	9905388-03A	7052505	5/20/99	Methane	1.00	0.010	10
		7052709		Carbon Dioxide	1.00	1.0	510
ABC-GWTPH-1 Duplicate	9905388-03AA	7052506	5/20/99	Methane	1.00	0.010	8.6
Lab Blank	9905388-04A	7052502	NA	Methane	1.00	0.010	Not Detected
		7052702		Carbon Dioxide	1.00	1.0	Not Detected
<b>Spiked Sample</b>							<b>% Recovery</b>
Method Spike	9905388-05A	7052501	NA	Methane	1.00	0.010	115
		7052701		Carbon Dioxide	1.00	1.0	74

J = Estimated Value.

Analysis Date: 5/25/99, 5/27/99

Container Type: VOA Vial

COMMENTS: NA = Not Applicable

# @AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

## WORK ORDER #: 9905391

### Work Order Summary

**CLIENT:** Mr. Ken Wright  
Chromalab, Inc.  
1220 Quarry Lane  
Pleasanton, CA 94566

**BILL TO:** Same

**PHONE:** 925-484-1919  
**FAX:** 925-484-1096  
**DATE RECEIVED:** 5/25/99  
**DATE COMPLETED:** 6/9/99

**P.O. # NR**  
**PROJECT # 99-05-1214**

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	ABC-GWTPH-2	Mod. SW-846 Method 3810
01AA	ABC-GWTPH-2 Duplicate	Mod. SW-846 Method 3810
02A	ABC-GWTPH-4	Mod. SW-846 Method 3810
02AA	ABC-GWTPH-4 Duplicate	Mod. SW-846 Method 3810
03A	Lab Blank	Mod. SW-846 Method 3810
03B	Lab Blank	Mod. SW-846 Method 3810
04A	Method Spike	Mod. SW-846 Method 3810

CERTIFIED BY: John Swanson for:  
Laboratory Director

DATE: 6-9-99

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA 95630  
(916) 985-1000 • (800) 985-5955 • FAX (916) 985-1020

# AIR TOXICS LTD.

Modified SW-846 Method 3810  
GC/FID/TCD

Field Sample I.D.	Lab Sample I.D.	File Name	Sample Date	Analyzed For	Dilution Factor	Det. Limit ( $\mu\text{G/mL}$ )	Amount ( $\mu\text{G/mL}$ )
ABC-GWTPH-2	9905391-01A	7052507	5/21/99	Methane	1.00	0.010	0.34
		7052703		Carbon Dioxide	1.00	1.0	83
ABC-GWTPH-2 Duplicate	9905391-01AA	7052704	5/21/99	Carbon Dioxide	1.00	1.0	82
ABC-GWTPH-4	9905391-02A	7052603	5/21/99	Methane	1.00	0.010	1.5
		7052705		Carbon Dioxide	1.00	1.0	78
ABC-GWTPH-4 Duplicate	9905391-02AA	7052604	5/21/99	Methane	1.00	0.010	1.4
Lab Blank	9905391-03A	7052502	NA	Methane	1.00	0.010	Not Detected
		7052702		Carbon Dioxide	1.00	1.0	Not Detected
Lab Blank	9905391-03B	7052602	NA	Methane	1.00	0.010	Not Detected
<b>Spiked Sample</b>							<b>% Recovery</b>
Method Spike	9905391-04A	7052501	NA	Methane	1.00	0.010	115
		7052701		Carbon Dioxide	1.00	1.0	74

Analysis Date: 5/25/99, 5/26/99, 5/27/99  
Container Type: VOA Vial

COMMENTS: NA = Not Applicable



**Sequoia  
Analytical**

1455 McDowell Blvd. North, Ste. D  
Petaluma, CA 94954  
(707) 792-1865  
FAX (707) 792-0342

Sequoia San Carlos 1551 Industrial Blvd. San Carlos, CA 94070	Project: Subbed in Project Number: L905435/Chromolab Project Manager: Tim Costello	Sampled: 5/20/99 Received: 5/21/99 Reported: 6/16/99
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### ANALYTICAL REPORT FOR P905726

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
ABC-GWDCE-1/L905435-01	P905726-01	Water	5/20/99
ABC-GWDCE-2/L905435-02	P905726-02	Water	5/20/99
ABC-GWTPH-1/L905435-03	P905726-03	Water	5/20/99





**Sequoia  
Analytical**

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Petaluma, CA 94954  
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Sequoia San Carlos 1551 Industrial Blvd. San Carlos, CA 94070	Project: Subbed in Project Number: L905435/Chromolab Project Manager: Tim Costello	Sampled: 5/20/99 Received: 5/21/99 Reported: 6/16/99
---	--	--

**Conventional Chemistry Parameters by APHA/EPA Methods  
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>ABC-GWDCE-1/L905435-01</u> Total Organic Carbon	9060357	6/10/99	6/10/99	<u>P905726-01</u> EPA 415.1	4.00	7.76	<u>Water</u> mg/l	
<u>ABC-GWDCE-2/L905435-02</u> Total Organic Carbon	9060357	6/10/99	6/10/99	<u>P905726-02</u> EPA 415.1	1.00	3.99	<u>Water</u> mg/l	





# Sequoia Analytical

1455 McDowell Blvd. North, Ste. D  
Petaluma, CA 94954  
(707) 792-1865  
FAX (707) 792-0342

Sequoia San Carlos 1551 Industrial Blvd. San Carlos, CA 94070	Project: Subbed in Project Number: L905435/Chromolab Project Manager: Tim Costello	Sampled: 5/20/99 Received: 5/21/99 Reported: 6/16/99
---	--	--

**Anions by EPA Method 300.0  
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>ABC-GWDCE-2/L905435-02</u> Chloride	9060220	6/7/99	6/7/99	<u>P905726-02</u> EPA 300.0	10.0	139	Water mg/l	
<u>ABC-GWTPH-1/L905435-03</u> Sulfate as SO4	9060350	6/10/99	6/10/99	<u>P905726-03</u> EPA 300.0	50.0	68.3	Water mg/l	







# Sequoia Analytical

1455 McDowell Blvd. North, Ste. D  
Petaluma, CA 94954  
(707) 792-1865  
FAX (707) 792-0342

Sequoia San Carlos  
1551 Industrial Blvd.  
San Carlos, CA 94070

Project: Subbed in  
Project Number: L905435/Chromolab  
Project Manager: Tim Costello

Sampled: 5/20/99  
Received: 5/21/99  
Reported: 6/16/99

## Conventional Chemistry Parameters by APHA/EPA Methods/Quality Control Sequoia Analytical - Petaluma

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<u>Batch: 9060357</u>										
<u>Blank</u>										
Total Organic Carbon	6/10/99			ND	mg/l	1.00				
	<u>9060357-BLK1</u>									
	6/10/99									
<u>LCS</u>										
Total Organic Carbon	6/10/99	20.0		20.3	mg/l	80.0-120	101			
	<u>9060357-BS1</u>									
	6/10/99									
<u>Matrix Spike</u>										
Total Organic Carbon	6/10/99	40.0	1.17	37.0	mg/l	75.0-125	89.6			
	<u>9060357-MS1</u>		<u>P905518-01</u>							
	6/10/99									
<u>Matrix Spike Dup</u>										
Total Organic Carbon	6/10/99	40.0	1.17	37.8	mg/l	75.0-125	91.6	20.0	2.21	
	<u>9060357-MSD1</u>		<u>P905518-01</u>							
	6/10/99									





# Sequoia Analytical

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Petaluma, CA 94954  
(707) 792-1865  
FAX (707) 792-0342

Sequoia San Carlos  
1551 Industrial Blvd.  
San Carlos, CA 94070

Project: Subbed in  
Project Number: L905435/Chromolab  
Project Manager: Tim Costello

Sampled: 5/20/99  
Received: 5/21/99  
Reported: 6/16/99

## Anions by EPA Method 300.0/Quality Control Sequoia Analytical - Petaluma

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 9060220</b>			<b>Date Prepared: 6/7/99</b>			<b>Extraction Method: General Preparation</b>				
<b>Blank</b>	<b>9060220-BLK1</b>									
Chloride	6/7/99			ND	mg/l	1.00				
<b>LCS</b>	<b>9060220-BS1</b>									
Chloride	6/7/99	15.0		13.9	mg/l	80.0-120	92.7			
<b>Matrix Spike</b>	<b>9060220-MS1</b>		<b>P905515-02</b>							
Chloride	6/7/99	75.0	62.4	132	mg/l	75.0-125	92.8			
<b>Matrix Spike Dup</b>	<b>9060220-MSD1</b>		<b>P905515-02</b>							
Chloride	6/7/99	75.0	62.4	131	mg/l	75.0-125	91.5	20.0	1.41	
<b>Batch: 9060350</b>			<b>Date Prepared: 6/10/99</b>			<b>Extraction Method: General Preparation</b>				
<b>Blank</b>	<b>9060350-BLK1</b>									
Sulfate as SO4	6/10/99			ND	mg/l	1.00				
<b>LCS</b>	<b>9060350-BS1</b>									
Sulfate as SO4	6/10/99	15.0		14.5	mg/l	80.0-120	96.7			
<b>Matrix Spike</b>	<b>9060350-MS1</b>		<b>P905493-03</b>							
Sulfate as SO4	6/10/99	15.0	ND	14.5	mg/l	75.0-125	96.7			
<b>Matrix Spike Dup</b>	<b>9060350-MSD1</b>		<b>P905493-03</b>							
Sulfate as SO4	6/10/99	15.0	ND	14.6	mg/l	75.0-125	97.3	20.0	0.619	





# Sequoia Analytical

1455 McDowell Blvd. North, Ste. D  
Petaluma, CA 94954  
(707) 792-1865  
FAX (707) 792-0342

Sequoia San Carlos  
1551 Industrial Blvd.  
San Carlos, CA 94070

Project: Subbed in  
Project Number: 1,905435/Chromolab  
Project Manager: Tim Costello

Sampled: 5/20/99  
Received: 5/21/99  
Reported: 6/16/99

## Notes and Definitions

#	Note
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference





# Sequoia Analytical

680 Chesapeake Drive  
 404 N. Wiget Lane  
 819 Striker Avenue, Suite B  
 1455 McDowell Blvd. North, Ste. D  
 1551 Industrial Road

Redwood City, CA 94063  
 Walnut Creek, CA 94598  
 Sacramento, CA 95834  
 Petaluma, CA 94954  
 San Carlos, CA 94070-4111

(650) 364-9600  
 (925) 988-9600  
 (916) 921-9600  
 (707) 792-1865  
 (650) 232-9600

FAX (650) 364-9233  
 FAX (925) 988-9673  
 FAX (916) 921-0100  
 FAX (707) 792-0342  
 FAX (650) 232-9612

Chromalab, Inc.  
 1220 Quarry Ln.  
 Pleasanton, CA. 94566-4756  
 Attention: Afsaneh Sallmpour

Client Project ID: #89051195  
 Sample Descript: Water, ABC-GWDCE-1  
 Lab Number: 905-1975

Sampled: May 20, 1999  
 Received: May 24, 1999  
 Analyzed: Jun 1, 1999  
 Reported: Jun 15, 1999

## LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L	QC Batch Number	Instrument ID
Chloride	0.10	420	IN060199300011A	INIC-1

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

*Julianne Fogley*  
 Julianne Fogley  
 Project Manager

**Woodward-Clyde Consultants**

500 12th Street, Suite 200 • Oakland, CA 94607-4014  
(510) 893-3600

**Chain of Custody Record**

PROJECT NO. 5109967009.00			ANALYSES							Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
DATE	TIME	SAMPLE NUMBER	Sample Matrix (Soil, Water, Air)	EPA Method Total Pb	EPA Method	EPA Method	EPA Method	EPA Method			
5/19/99	1400	ABL-SSPb-1	S	X						1	Crush rocks and sample for Total Pb  Standard Turnaround Time  Please Return Cleaned Buckets to April Giangerelli  Fax Results to April Giangerelli @ (510) 874-3268  cooler temp 5.4°C - BSH
	1435	ABL-SSPb-2	S	X						1	
	1420	ABL-SSPb-3	S	X						1	
	1405	ABL-SSPb-4	S	X						1	
	1447	ABL-SSPb-5	S	X						1	
	1445	ABL-SSPb-6	S	X						1	
	1425	ABL-SSPb-7	S	X						1	
	1415	ABL-SSPb-8	S	X						1	
	1450	ABL-SSPb-9	S	X						1	
	1455	ABL-SSPb-10	S	X						1	
	1440	ABL-SSPb-11	S	X						1	
		ABL-SSPb-12	S	X						1	
	1410	ABL-SSPb-13	S	X						1	
	1505	ABL-SSPb-14	S	X						1	
		ABL-SSPb-15	S	X						1	
	1500	ABL-SSPb-16	S	X						1	
		ABL-SSPb-17	S	X						1	

TOTAL NUMBER OF CONTAINERS 17

RELINQUISHED BY: (Signature) <i>April Giangerelli</i>	DATE/TIME 5/19/99 15:30	RECEIVED BY: (Signature) <i>[Signature]</i> 1605 5/19/99	RELINQUISHED BY: (Signature) <i>[Signature]</i>	DATE/TIME 5/19/99 17:25	RECEIVED BY: (Signature) <i>[Signature]</i>
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY (Signature) <i>Denise Harrington</i>	DATE/TIME 5/19/99 17:25

1999.05.1195 46150

**Woodward-Clyde Consultants**  
 500 12th Street, Suite 200 • Oakland, CA 94607-4014  
 (510) 893-3600

**Chain of Custody Record**

PROJECT NO.			Sample Matrix (Soil, Water, Air)	ANALYSES								Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)		
SAMPLES: (Signature)				EPA Method	EPA Method	EPA Method	TOC	HCl/Chloride	Methane/CO <sub>2</sub>	TPH-Di-M	gas/BTEX/MTBE			Sulfates	Nitrates
DATE	TIME	SAMPLE NUMBER		EPA Method	EPA Method	EPA Method									
		<del>ABL-GWDCE-3</del>													
	1100	ABL-GWDCE-1	W			3	1	3						8	Standard
	1130	ABL-GWDCE-2	W			3	1	3						8	Turnaround
	1345	ABL-GWDCE-5	W			3								3	Time
	1400	ABL-GWDCE-6	W			3								3	
	<del>1415</del>	<del>ABL-GWDCE-4</del>	<del>W</del>			<del>3</del>	<del>1</del>	<del>3</del>						<del>3</del>	
	1545	Trip Blank	W		2	2			2	2				2	
	1600	ABL-GWTPH-1	W						3	3	1			7	Fax Results
✓	1630	ABL-GWTPH-5	W							1				1	to April Giangerelli @ (510) 874-326
											TOTAL NUMBER OF CONTAINERS	33			

cooler temp 4.5°C *BSU*

RELINQUISHED BY: (Signature) <i>April Giangerelli</i>	DATE/TIME 5/20/99 1700	RECEIVED BY: (Signature) <i>B 504</i>	RELINQUISHED BY: (Signature) <i>B 504</i>	DATE/TIME 5/20/99 700	RECEIVED BY: (Signature) <i>Denise Harrington</i>
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY (Signature)	DATE/TIME 5/20/99 1900

99051214

46170

### Woodward-Clyde Consultants

500 12th Street, Suite 200 • Oakland, CA 94607-4014  
(510) 893-3600

### Chain of Custody Record

ANALYSES

PROJECT NO.			Sample Matrix (Soil, Water, Air)	ANALYSES								Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)	
SAMPLERS: (Signature)				EPA Method	6010	8080	8260	TPH-D <sub>5</sub> -M <sub>0</sub>	TPH gas/mex/MTBE	Nitrates	CH <sub>3</sub> & CO			Sulfates
DATE	TIME	SAMPLE NUMBER												
5/21/99														
	1030	ABL-GWTPH-3	W				2	3					5	Standard Turnaround Time
	1045	ABL-GWTPH-1	W				2	1					3	
	1100	ABL-GWTPH-5	W				2	2					4	
	1120	ABL-GWTPH-2	W				2	3	1	3	1		10	
	1145	ABL-GWTPH-4	W				2	3	1	3	1		10	Fax results to April Giangerelli @ (510) 874-3266
	1350	ABL-GWDCE-3D	W			3							3	
	1400	ABL-GWDCE-3	W			3							3	
	1415	ABL-GWDCE-4	W			2				1			4	
	1430	ABL-PURGE	W		1	1	3	2	3				10	
	1440	ABL-EQBLK	W		1	1	3	2	3				10	

TOTAL NUMBER OF CONTAINERS 62

cooler Temp 4.3°C - DSH

RELINQUISHED BY: (Signature) <i>April Giangerelli</i>	DATE/TIME 5/21/99 15:30	RECEIVED BY: (Signature) <i>B. Moon</i>	DATE/TIME 5:21 99	RELINQUISHED BY: (Signature) <i>[Signature]</i>	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY (Signature) <i>Dennis Harrington</i>	DATE/TIME 5/21/99 1647	

# CHROMALAB, INC.

Environmental Service (SDB)

## Sample Receipt Checklist

Client Name: URS Grainer/WCC Date/Time Received: 5/20/99 | 190  
Reference/Submis: 46150 99051195 Received by: D. Harrington  
Checklist completed by: Dennis Harrington 5/21/99 Reviewed by: \_\_\_\_\_  
Signature Date Initials | Date

Matrix: H2O Carrier name: Client - C/L \_\_\_\_\_

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Samples in proper container/bottle?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Temp: <u>4.5</u> °C	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt? <u>Yes</u>	Adjusted? <input type="checkbox"/>	Checked by _____	chemist for VOA's

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted: \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: ① no unpreserved portion rec'd for ABC-GWDCE-1 - cannot run chloride  
② Trip blank only 2 voa w/ multiple analysis marked-off (extractables, metals, volatiles)

Corrective Action: \_\_\_\_\_





Lab: Sequoia

Sub-Contract

# CHROMALAB, INC.

1220 Quarry Lane • Pleasanton, California 94566-4756  
510/484-1919 • Facsimile 510/484-1098

## Chain of Custody

Environmental Services (SDB) (DOHS 1094)

DATE 5/21/99 PAGE 1 of 1

510 484 1096:# 9/15

6-18-99 ; 15:26 ; SEQUOIA ANALYTICAL-

SENT BY:

PROF. MON					ANALYSIS REPORT												Chromalab Reference or Submission Number(s)	NUMBER OF CONTAINERS						
COMPANY	ADDRESS	SAMPLE ID(S) (SIGNATURE)	(PHONE NO.)	(FAX NO.)	Chloride	Sulfate	TOC																	
<u>Chromalab</u>		<u>Afaneh Afaneh Selimpour</u>																						
		<u>L905475</u>																						
SAMPLE ID	DATE	TIME	MATRIX	PRESERV.																				
<u>ABC-GWDCE-1</u>	<u>5/20</u>	<u>—</u>	<u>H2O</u>	<u>—</u>																				
<u>ABC-GWDCE-2</u>	<u>↓</u>	<u>—</u>	<u>↓</u>	<u>—</u>	X					X	X													
<u>ABC-GWTPH-1</u>	<u>↓</u>	<u>—</u>	<u>↓</u>	<u>—</u>		X																		

**PROJECT INFORMATION**

PROJECT NAME: \_\_\_\_\_  
 PROJECT NUMBER: 99051195  
 P.O. # \_\_\_\_\_

**SAMPLE RECEIPT**

TOTAL NO OF CONTAINERS \_\_\_\_\_  
 HEAD SPACE \_\_\_\_\_  
 RECD GOOD CONDITION/COLD \_\_\_\_\_  
 CONFORMS TO RECORD \_\_\_\_\_

TAT: STANDARD 5-DAY \_\_\_\_\_  
 24 \_\_\_\_\_ 48 \_\_\_\_\_ 72 \_\_\_\_\_ **OTHER** \_\_\_\_\_

RELINQUISHED BY <u>D. Harrington</u> (SIGNATURE) (TIME) <u>D. Harrington</u> (PRINTED NAME) (DATE) <u>Chromalab 5/21/99</u> (COMPANY)	RELINQUISHED BY <u>C. Blalock</u> (SIGNATURE) (TIME) (PRINTED NAME) (DATE) (COMPANY)	RELINQUISHED BY (SIGNATURE) (TIME) (PRINTED NAME) (DATE) (COMPANY)
RECEIVED BY <u>A. Andrews</u> (SIGNATURE) (TIME) <u>A. Andrews</u> (PRINTED NAME) (DATE) <u>Sequoia 5-21-99</u> (COMPANY)	RECEIVED BY (SIGNATURE) (TIME) (PRINTED NAME) (DATE) (COMPANY)	RECEIVED BY (LABORATORY) <u>A. Andrews</u> 1796 (SIGNATURE) (TIME) <u>B. E. Blalock</u> 5/21 (PRINTED NAME) (DATE) <u>Sequoia</u> (COMPANY) (PAB)

SPECIAL INSTRUCTIONS/COMMENTS:  
Standard 10-day TAT





# CHROMALAB, INC.

1220 Quarry Lane • Pleasanton, California 94566-4758  
510/484-1919 • Facsimile 510/484-1096

## Chain of Custody

Environmental Services (SDB) (DOLIS 1094)

DATE 5/24/99 PAGE 1 OF 1

PROJECT INFORMATION						ANALYSIS REPORT																		
PROJ MGR: <u>Afsaneh Salimpour</u> COMPANY: <u>Chromalab</u> ADDRESS: _____ PHONE NO.: _____ FAX NO.: _____																								
SAMPLE ID: _____ DATE: _____ TIME: _____ MATRIX: _____ PRESERV.: _____ SAMPLES (SIGNATURE): _____ (PHONE NO.): _____ (FAX NO.): _____																								
						Methane		CO2																
OK	OKA	ABC-GWTPH-2	5/24/99	11:20	HZO	NP	HET	X	X															3
		ABC-GWTPH-4	↓	11:45	↓	↓	↓	X	X															3
PROJECT INFORMATION						SAMPLE RECEIPT						RELINQUISHED BY 1			RELINQUISHED BY 2			RELINQUISHED BY 3						
PROJECT NAME: _____						TOTAL NO. OF CONTAINERS: _____						SIGNATURE: _____ (TIME) _____			SIGNATURE: _____ (TIME) _____			SIGNATURE: _____ (TIME) _____						
PROJECT NUMBER: <u>99-05-1214</u>						HEAD SPACE: _____						D. Harrington (PRINTED NAME) (DATE) _____			_____ (PRINTED NAME) (DATE) _____			_____ (PRINTED NAME) (DATE) _____						
P.O. #: _____						RECD GOOD CONDITION/COLD: _____						Chromalab 5/24/99 (COMPANY) (DATE) _____			_____ (COMPANY) (DATE) _____			_____ (COMPANY) (DATE) _____						
TAT: _____ STANDARD 5-DAY: _____						CONFORMS TO RECORD: <input type="checkbox"/> 24 <input type="checkbox"/> 48 <input type="checkbox"/> 72 <input checked="" type="checkbox"/> OTHER						RECEIVED BY 1			RECEIVED BY 2			RECEIVED BY (LABORATORY) 3						
SPECIAL INSTRUCTIONS/COMMENTS: <u>STANDARD TAT</u>												Theresa Stiepeke (SIGNATURE) (TIME) _____			_____ (SIGNATURE) (TIME) _____			_____ (SIGNATURE) (TIME) _____						
												Theresa Stiepeke 5/24/99 (PRINTED NAME) (DATE) _____			_____ (PRINTED NAME) (DATE) _____			_____ (PRINTED NAME) (DATE) _____						
												AR (COMPANY) _____			_____ (COMPANY) _____			_____ (COMPANY) _____						

Custody Seal Intact? Y N None Temp. on Ice

# CHROMALAB, INC.

Environmental Services (SDB) (DOI IS 1094)

Lab: Geo.  
 1220 Quarry Lane • Pleasanton, California 94566-4756  
 510/484-1919 • Facsimile 510/484-1096

K148-15

Sub-Contract  
 Chain of Custody

DATE 5/28/99 PAGE 1 OF 1

PROJ MGR Ameh. Salimpour  
 COMPANY \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 SAMPLERS (SIGNATURE) \_\_\_\_\_ (PHONE NO) \_\_\_\_\_  
 (FAX NO.) \_\_\_\_\_

ANALYSIS REPORT

SAMPLE ID	DATE	TIME	MATRIX	PRESERV.	Hg											ChromaLab Reference or Submission Number(s)	NUMBER OF CONTAINERS
ABC - PURGE	5/21		water													K32737	1999-05-1214-09
ABC - EGBLK	5/21		↓													K32738	1999 05-1214-10

PROJECT INFORMATION				SAMPLE RECEIPT				RELINQUISHED BY		2	RELINQUISHED BY		3	
PROJECT NAME _____				TOTAL NO. OF CONTAINERS _____				Denise Harrington (SIGNATURE)		(TIME)	(TIME)	(SIGNATURE)		(TIME)
PROJECT NUMBER <u>1999-05-1214</u>				HEAD SPACE _____				D. Harrington (PRINTED NAME)		(DATE)	(DATE)	(PRINTED NAME)		(DATE)
P.O. # _____				REC'D GOOD CONDITION/COLD _____				Chromalab (COMPANY)		(COMPANY)	(COMPANY)	(COMPANY)		(COMPANY)
TAT	STANDARD 5-DAY	24		48	72	OTHER		RECEIVED BY		2	RECEIVED BY (LABORATORY)		3	
SPECIAL INSTRUCTIONS/COMMENTS:				RECEIVED BY				Richard Chron (SIGNATURE)		(TIME)	(TIME)	(SIGNATURE)		(TIME)
				RICHARD CHRON (PRINTED NAME)				5/28/99 (DATE)		(DATE)	(DATE)	(PRINTED NAME)		(DATE)
				Crescent Analytical Labs (COMPANY)						(COMPANY)	(COMPANY)	(LAB)		(LAB)