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Alameda County
Environmental Health

19 February 2009
Project No. 2543.04

Mr. Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Subject: Soil Vapor Sampling Report and
Response to Technical Comments
901 Jefferson Street
Oakland, California
SLIC Case RO0002924

Dear Mr. Wickham:

As a legally authorized representative of A.F. Evans Development, Inc., and on behalf of A.F. Evans Development, Inc, I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document titled *Soil Vapor Sampling Report and Response to Technical Comments, 901 Jefferson Street, Oakland, California, SLIC Case RO0002924*, are true and correct to the best of my knowledge.

Sincerely yours,

Rick Bell
AFE Executive VP
A.F. Evans Development, Inc.

A.F. EVANS COMPANY, INC. | A.F. EVANS DEVELOPMENT, INC. | EVANS PROPERTY MANAGEMENT, INC. | EVANS SENIOR COMMUNITIES, INC.

Treadwell&Rollo

19 February 2009
Project No. 2820.04

Mr. Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: Soil Vapor Sampling Report and
Response to Technical Comments
901 Jefferson Street
Oakland, California
SLIC Case RO0002924

Dear Mr. Wickham:

Treadwell & Rollo, Inc. is submitting this letter report on behalf of A.F. Evans Development, Inc. (A.F. Evans) in response to requirements of the Alameda County Environmental Health (ACEH) letter of 14 November 2008. This report presents the results of the soil vapor sampling performed on 12 January 2009 at the property located at 901 Jefferson Street in Oakland, California (Site, Figure 1). This sampling was performed in general accordance with our *Work Plan for Soil Vapor Investigation, 901 Jefferson Street, Oakland, California, SLIC Case RO0002924* (*Work Plan*), dated 30 October 2008, prepared in response to the requirements of your letter dated 26 August 2008, to provide additional data about potential volatile organic compounds (VOCs) in soil vapor beneath the Site. In addition, this report includes responses to other technical comments in your 26 August 2008 letter.

BACKGROUND

A.F. Evans has redeveloped the Site from a parking lot to a mixed residential/commercial development, with a parking garage, a commercial space at the corner of 9th Street and Jefferson Street, common areas, and nine live-work lofts on the ground floor, with four stories of residential units above. A plan of the ground floor is provided in Figure 2. A.F. Evans completed construction at the Site in 2008. The Site is currently vacant.

The Site was historically operated as a gasoline filling station, and underground fuel storage tanks were reportedly removed in 1953. Recent environmental activities have been ongoing at the Site since 1989, and have included Phase I Environmental Site Assessments, soil and groundwater investigations, groundwater remediation, and groundwater monitoring. The results of the investigations indicated the presence of petroleum hydrocarbons in soil and groundwater. In 1994, in-situ bioremediation was performed for remediation of groundwater at the Site. On 26 December 1996, Alameda County Environmental Health (ACEH) issued a completion certificate stating that “no further action related to the underground tank release is required.” The results from these historic activities have been reported elsewhere.

Since 1997, several investigations have been performed to evaluate Site soil quality for the purpose of redeveloping the Site. Elevated concentrations of lead and petroleum hydrocarbons were found in soil during these investigations. Treadwell & Rollo prepared a *Site Mitigation Plan, Proposed Residential Development, 901 Jefferson Street, Oakland, California*, dated 12 April 2006, which described actions to be taken during construction to mitigate potential environmental risks to the Site workers, future Site users, and the environment. These activities included removing soil in the upper seven feet of soil containing lead or petroleum hydrocarbons (if encountered) that exceeded Environmental Screening

Levels (ESLs)[1] for shallow soil with residential land use, established by the San Francisco Bay Regional Water Quality Control Board (RWQCB). In addition, several over-excavations and confirmation sampling events were conducted at the Site during development. Treadwell & Rollo subsequently submitted the *Site Mitigation Completion Report, 901 Jefferson Street, Oakland, California*, dated 17 March 2008, which documented the completion of these activities. ACEH issued technical comments on this report on 18 April 2008, to which Treadwell and Rollo responded on 5 June 2008. In a letter dated 26 August 2008, ACEH requested a work plan to evaluate the potential for vapor intrusion near the former monitoring well MW-5. The *Work Plan* was submitted 30 October 2008 and was approved in a letter issued by ACEH on 14 November 2008.

Soil Vapor Sampling Field Activities

Prior to advancing borings to collect soil vapor samples, Treadwell & Rollo obtained a boring permit from the Alameda County Department of Public Works and excavation and encroachment permits from the City of Oakland. These permits are provided as Attachment A on CD-ROM. We also prepared a Health and Safety Plan for the work, notified Underground Services Alert (USA) more than 48 hours prior to field work, and had a private utility locating contractor clear the boring locations for underground utilities.

On 12 January 2009, Treadwell & Rollo mobilized to the Site to collect the soil vapor samples. First, four-foot by two-foot sections of sidewalk were cut and removed at each location by Lewis M. Merlo, Inc. (Merlo) of San Francisco, California. Soil vapor samples were collected using a truck-mounted direct-push rig contracted from TEG Northern California Inc. (TEG), of Rancho Cordova, California. After completion of sampling, all five borings were filled with neat cement grout. On 14 January 2009, Merlo replaced the removed concrete sections to restore the Site.

Soil vapor samples were collected at five locations (SG-1, SG-2, SG-3, SG-4, and SG-5) around the northeast corner of the Site (Figure 2). These locations are in the vicinity of former monitoring well MW-5. Sample locations were chosen as near as practicable to the building. Soil vapor samples were collected at approximately five to six feet below the ground surface (bgs) from a dedicated soil vapor sampling probe advanced to the sampling depth using direct-push technology. To characterize the soil stratigraphy, two borings (SG-3 and SG-4) were logged continuously to a depth of nine feet. The logs of these borings are provided in Attachment B. Soil samples were collected in drive-sample tubes at 6.5 feet and 8.5 feet bgs in borings SG-3 and SG-4 for analysis of physical parameters.

The Work Plan specified that soil vapor samples be collected at approximately nine feet bgs. This depth was selected because it was below the depth of Site excavation, backfilling, and recompaction. During collection of the first samples, at SG-3, TEG was unable to extract vapor at nine feet bgs. Attempts were then made to extract soil vapor at eight feet bgs and seven feet bgs, but were unsuccessful. Soil vapor samples were successfully collected at six feet bgs. Per guidance issued by the California Department of Toxic Substances Control (DTSC)/Los Angeles Regional Water Quality Control Board (LARWQCB)2, soil vapor samples were collected from SG-3 after one, three and seven purge volumes had been extracted. Because the highest concentration of VOCs were detected by the mobile on-Site laboratory in the sample collected after seven purge volumes had been removed, subsequent samples in other borings were collected after the removal of seven purge volumes. In the remaining borings, vapor sampling was attempted at nine feet and six feet bgs, but again vapor could not be extracted. Soil vapor was successfully sampled in borings SG-1, SG-2, SG-4 and SG-5 at five feet bgs.

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[1] RWQCB, 2008, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, November 2007, revised May 2008.

[2] DTSC/LARWQCB, 2003, *Advisory – Active Soil Gas Investigations,* 28 January 2003.

In borings SG-3 and SG-4, it was noted that soil at 6.5 feet bgs was wet. This was likely the reason soil vapor could not be extracted at the planned depth of sampling. Since the water table at the Site has previously been determined to be at 21 to 25 feet bgs, the presence of this shallow water may be the result of a water line break in the vicinity of the sample locations. This possibility is supported by the presence of low concentrations of chloroform detected in seven of the ten samples collected (see below). Chloroform is commonly found in public water systems.

Soil vapor samples for on-site analysis were collected using the soil vapor sampling probe in accordance with the protocols outlined in the *Advisory – Active Soil Gas Investigations*. Eight soil vapor samples were collected in Tedlar bags and analyzed at the Site by TEG's mobile laboratory. These included one sample each from borings SG-1, SG-2, and SG-5; one sample plus one duplicate sample from boring SG-4; and three samples from boring SG-3. TEG analyzed the samples for total petroleum hydrocarbons as gasoline (TPHg) and VOCs by EPA Method 8260B. In addition, two quality control samples were collected in Tedlar bags from borings SG-1 and SG-5 and submitted to Air Toxics Ltd., a California state-certified laboratory located in Folsom, California, for analyses for TPHg and VOCs by EPA Method TO-15A.

Soil Vapor Sampling Results

A total of ten soil vapor samples were analyzed for TPH-g and VOCs. The analytical results are summarized on Table 1, and the laboratory reports, with chain-of-custody documentation, are provided as Attachment C. Detected compounds included chloroform, benzene, toluene, ethyl benzene and xylenes, as well as the group of compounds represented by TPH-g. With the exception of benzene, all reported concentrations were below the ESLs for residential exposure in shallow soil vapor. The soil vapor ESL for benzene is 84 micrograms per cubic meter ($\mu g/m^3$).

Benzene was detected in six of ten soil vapor samples collected. In samples from SG-2 and SG-3, benzene was reported at 92 $\mu g/m^3$ and 85 $\mu g/m^3$, respectively. In SG-3, this concentration was reported in the sample collected after three purge volumes had been extracted. In the SG-3 soil vapor samples collected with one purge volume and seven purge volumes, benzene was not reported above the detection limit of 80 $\mu g/m^3$. In the primary and duplicate samples collected from SG-4, benzene was reported at 83 $\mu g/m^3$ and 88 ug/m^3, respectively; one sample less than the ESL and one sample greater. These data indicate that analysis of three samples reported benzene at concentrations greater than the ESL, but very close to the ESL, and that two of these samples are questionable because: 1) three samples were collected from SG-3 and benzene was reported in only one, and 2) one of the two samples collected from SG-4 was below the ESL.

Chloroform was detected in locations SG-1, SG-3, SG-4, and SG-5. As there is no historic evidence of elevated chloroform concentrations at the Site, the source of the chloroform is not likely from the Site. Chloroform is commonly found in water supply systems, and its presence in the soil vapor, combined with the presence of water at a much shallower depth than historically found at the Site suggest the possibility of a leaking water supply line as the potential source of the chloroform.

Soil Sampling Results

Soil samples collected from boring SG-3 at 6.5 feet bgs and 8.5 feet bgs were analyzed by Geo Engineering Services of Pacifica, California, for soil bulk density by ASTM Method D2937 and soil volumetric water content by ASTM Method D2216. The laboratory report from Geo Engineering Services is provided in Attachment D.

Porosity was calculated from the soil bulk density and an assumed soil particle density of 2.65 grams per cubic centimeter (g/cm^3). This assumption for soil particle density is generally used in the absence of significant fractions of high density minerals (e.g., magnetite, garnet, etc.)[3].

At a depth of 6.5 feet bgs at boring SG-3, the soil bulk density was 1.81 g/cm^3, the volumetric water content was 0.188, and the porosity was calculated to be 0.316. At a depth of 8.5 feet bgs at boring SG-3, the soil bulk density was 1.84 g/cm^3, the volumetric water content was 0.174, and the porosity was calculated to be 0.306. The resulting average soil physical properties at boring SG-3 are a soil bulk density of 1.82 g/cm^3, a volumetric water content of 0.181, and a porosity of 0.311.

Site Specific Evaluation of Vapor Intrusion Risk

Results from the soil-vapor analyses were used along with building-specific information to evaluate the vapor intrusion risks associated with the presence of benzene in soil gas, since only benzene was reported at concentrations that exceeded the ESL of 84 µg/m^3 for residential exposure in shallow soil vapor. These exceedances of 92 µg/m^3, 88 µg/m^3, and 85 µg/m^3 were reported from sample locations SG-2, SG-3 and SG-4 at depths of five, six and five feet bgs, respectively.

Risks associated with contaminant concentrations are initially screened against ESLs to determine if more information is necessary to adequately determine whether measured subsurface concentrations represent risks to human health via the indoor air inhalation pathway. These ESL values represent a risk of 1 in 1,000,000 ($1x10^{-6}$) that persons could potentially be diagnosed with cancer under a highly conservative residential exposure scenario. When ESLs are exceeded, a site specific risk evaluation should be performed to determine if contaminant concentrations in the subsurface create a potential risk to building occupants that will require some mitigative action. To perform this site-specific risk evaluation, the Johnson & Ettinger (J&E) model was used to evaluate the risk associated with vapor intrusion of benzene from soil gas at the Site[4]. Specifically, the DTSC/Cal-EPA spreadsheet version of the J&E model was used to evaluate vapor intrusion risks associated with the presence of benzene in soil gas at the Site. Attachment E contains the sheets generated from using the model. Default values provided by the DTSC/Cal-EPA guidance document were generally used to calculate the potential risk associated with a benzene concentration of 92 µg/m^3 at a depth of 5 feet bgs (the greatest soil vapor benzene concentration measured at the Site) with several exceptions. The default value of 1×10^{-8} cubic centimeters (cm^2) was used as the input value for soil vapor permeability instead of the soil vapor permeability calculated by the model from soil type. This default value produces a more conservative estimate of risk than if the soil vapor permeability calculated from soil type had been used. The following site specific values were used in place of default values:

- A value of 15 centimeters (cm) was used for depth below grade to bottom of enclosed floor space (“L_F”) since the Site has a "slab-on-grade" foundation.
- A value of 152.4 cm was used for soil vapor sampling depth below grade (“L_S”) since the vapor sample collected with the greatest benzene concentration was collected at a depth of 5 feet bgs.
- A soil bulk density of 1.82 g/cm^3, a porosity of 0.31, and a volumetric water content of 0.18 were used based on the results of soil sampling at the Site. These values represent an average value from the two samples collected on 12 January 2009 from boring SG-3 at depths of 6.5 and 8.5 feet bgs. Boring logs for boring SG-3 and SG-4 indicate the soils are clayey sands to the maximum depth explored at each boring (9 feet). The guidance for use of the J&E model

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[3] Brady, N. and Weil, C. 2002, *The Nature and Properties of Soils*, Prentice Hall, Upper Saddle River, New Jersey.

[4] DTSC/Cal-EPA, 2004, *Interim Final, Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air*, 15 December 2004.

suggests that a soil type of loam (a soil conservation service classification) be used as an input in the J&E model for clayey sands (a Unified Soil Classification System term). The default J&E soil physical parameters for a loam are a bulk density of 1.59 g/cm^3, a porosity of 0.399, and a volumetric water content of 0.148. The soil physical results from the Site are similar to the default J&E parameters.

Using these input parameters in the DTSC/Cal-EPA spreadsheet version of the J&E model produced a risk of 2.2 x 10^{-7} associated with a benzene concentration of 92 µg/m^3 at a depth of 5 feet bgs, which is significantly less than the cancer risk criterion of 1 x 10^{-6}. Based on the results of this risk evaluation, no further action is necessary to mitigate the risks to human health via the indoor air inhalation pathway.

Responses to Technical Comments and Request for Information

In addition to requesting the work plan for soil vapor sampling and the subsequent soil vapor investigation, which are addressed above, your letter of 26 August 2008 contained three technical comments and a request for information. This section responds to your comments 2 through 4, which addressed imported soil, exported soil, and evaluation for possible contaminants other than lead and petroleum hydrocarbons. This letter also responds to your request for certain documents pertaining to the Site. Your comments are reproduced below, each followed by our response.

2. ***Imported Fill****. The "Response to Technical Comments," provides a brief summary of the analytical data for the imported fill brought to the site from 900 Minnesota Street in San Francisco. However, further information is required to evaluate the imported fill. We request that you submit the referenced report entitled "Phase II Environmental Site Assessment of the Former Esprit De Corp Office Elevator Shaft and Parking Lot, Located at 900 Minnesota Street, San Francisco, California," dated December 5, 2003 and prepared by Secor International Corporation as an attachment to the Work Plan requested below. Please also provide an estimate of the total volume of fill imported from 900 Minnesota Street.*

    Response. The requested document is provided as Attachment F to this letter. Please note that, as stated in our letter dated 5 June 2008, the material imported from 900 Minnesota Street was taken from the west and northwest part of the Minnesota Street site and consisted of sandstone and shale bedrock, after approximately four feet of overlying fill had been removed. The bedrock was crushed on site, then transported to 901 Jefferson Street. In October 2006, approximately 350 cubic yards of crushed bedrock was imported to 901 Jefferson Street from the Minnesota Street site.

3. ***Off-site Soil Removal.** Approximately 7,000 tons of soil was reportedly excavated from the upper 7 feet of the site and taken to the Vidrio Development in Pittsburg, California. Based on our review of the case files, the soil taken off-site was not sufficiently characterized for reuse at another site. Soils at the site were known to be impacted by petroleum hydrocarbons and lead. Lead-impacted soils were excavated in two areas of the site in June 2006 and disposed at off-site landfills. However, it is not clear that lead-impacted soils were limited to these two areas of the site. Total lead concentrations in the confirmation samples collected after the first phase of over-excavation ranged from 1.9 to 4,200 milligrams per kilogram (mg/kg). Total lead concentrations exceeded 150 mg/kg in 11 of the 14 confirmation soil samples collected at a depth of 2.0 feet bgs. The excavations were expanded several feet laterally and vertically at several locations to remove areas with confirmation soil samples that exceeded 150 mg/kg of total lead. Following the second phase of excavation, a total of only 4 confirmation soil samples were collected at depths ranging from 3.0 to 6.0 feet bgs. Although the concentrations of total lead did not exceed 150 mg/kg in any of the 4 confirmation soil samples, no soil samples were collected at*

depths less than 3 feet bgs and the limited number of confirmation soil samples (4) was not sufficient to confirm that the excavation had achieved removal of soil with lead concentrations exceeding the target concentration of 150 mg/kg. As an attachment to the Work Plan requested below, we request that you provide a detailed description of the off-site location where the approximately 7,000 tons of soil were reused. Specifically, the description is to include a map showing the location(s), current and future land use, current and future buildings, type of surface cover (pavement or bare ground), thickness of the fill, and any other features relevant to potential human or ecological exposure. Please include this information as an attachment to the Work Plan requested below.

Response. To characterize and segregate soil for disposal to off-Site landfills, for on-Site reuse or for exported fill, analytical results were evaluated throughout the Site from both pre-excavation soil borings and confirmation samples collected during and after excavation of impacted soil. Figure 3 of the Treadwell & Rollo 17 March 2008 *Site Mitigation Completion Report, 901 Jefferson Street, Oakland, California* shows the locations of 50 soil borings advanced at the Site, from which soil samples were collected and analyzed for lead. During segregation and excavation of lead-impacted soil, a total of 80 samples, collected from 35 locations, were collected and analyzed for lead, the remaining chemical of concern. Because of this great number of samples, we believe that the soil sent off-Site and the soil reused on-Site have been sufficiently characterized for their intended use.

A plan showing the location where fill exported from 901 Jefferson Street was placed at the Vidrio Development Project (formerly known as the Black Diamond Redevelopment), in the City of Concord, Contra Costa County, is provided as Attachment G to this letter report. The development consists of four- to five-story buildings on three blocks, constructed at close to site grade. The ground floor of each block consists of a parking garage surrounded on three sides by residential units and on the fourth side by retail space (along Railroad Avenue). The second, third and fourth floors on each block consist of residential units surrounding an interior courtyard.

All soil was placed within the “Building B” footprint, both under the parking garage and to build up the pads for the commercial units along Railroad Avenue and the residential units on the other three sides of the development. No imported fill was placed outside the building footprint.

The volume of soil exported to the Vidrio Development Project from the 901 Jefferson Street Site was approximately 3,038 cubic yards. Because of an over-estimation of the soil density in calculating the weight of this material, the weight of this material was reported as approximately 7,000 tons in the Treadwell & Rollo 17 March 2008 *Site Mitigation Completion Report, 901 Jefferson Street, Oakland, California*. Attachment H to this letter report provides an errata list and two replacement pages for the 2008 report changing the calculated weight to the reported volume of 3,038 cubic yards.

4. ***Assessment for Other Potential Contaminants.*** *Lead and petroleum hydrocarbons have been identified as chemicals of concern for soils at the site. In the Work Plan requested below, please describe how whether the soils were evaluated for other potential contaminants. In particular, please discuss whether the approximately 7,000 tons of soil discussed in technical comment 3 were evaluated for metals other than lead.*

   Response. Documentation of soil sampling and analysis for metals other than lead was not identified during this exercise. Based on the history of Site use, petroleum hydrocarbons and lead are the indicated contaminants of concern and would have been associated with the presence of artificial fill, the gasoline filling station, and the battery shop. Other metals potentially present at elevated concentrations, if any, would be associated with the lead and therefore removed with the soil containing elevated concentrations of lead. The excavation and disposition of these soils have been described in the Treadwell & Rollo Site Mitigation Completion Report. The presence of potential contaminants, other than metals and Total Petroleum Hydrocarbons quantified as gasoline (TPH-g), diesel (TPH-d) or motor oil (TPH-mo), has been tested in several previous studies, including:

a) In 1989, Woodward-Clyde Consultants tested soil from six borings across the Site for volatile organic compounds (VOCs), and ten soil samples from seven additional locations were sampled for benzene, toluene, ethyl benzene and total xylenes (BTEX compounds) (Attachment I1, Woodward-Clyde Consultants, *Hydrocarbon Investigation, 9th and Jefferson Streets, Oakland, California*, June 1990).

b) In 1997, Streamborn tested shallow soil in four locations for Total Petroleum Hydrocarbons as kerosene (TPH-k), and in five locations for VOCs (Attachment I4, Streamborn, *Letter Report, Shallow Soil Sampling, 901 Jefferson Street, Oakland CA*, 7 April 1998).

REQUEST FOR INFORMATION
During our review of the case file, we noted references to several documents that are not in the ACEH case file. We request that you submit copies of the following documents, which are referenced in other technical reports but are not in the ACEH case file:

Woodward-Clyde Consultants, Hydrocarbon Investigation, 9th and Jefferson Streets, Oakland, California. June 5, 1990.

Streamborn, 1996. Letter Report: Risk Assessment for Benzene, 901 Jefferson Street, Oakland, CA. June 4, 1996.

Streamborn, 1996. Letter Report: Abandonment of Monitoring Wells MW-5, MW-18, MW-19, and PTW-1, 901 Jefferson Street, Oakland, CA. October 31, 1996.

Streamborn, 1998. Letter Report: Shallow Soil Sampling, 901 Jefferson Street, Oakland, CA. April 7, 1998.

Streamborn, 1998. Petition (Application) for Reclassification of Lead-Contaminated Soil, 901 Jefferson Street, Oakland, CA. June 26, 1998.

Streamborn, 1999. Response to your Request for Additional Information Petition (Application) for Reclassification of Lead-Contaminated Soil, Waste Evaluation Unit File #F171, 901 Jefferson Street, Oakland, CA. February 19, 1999.

Department of Toxic Substances Control, Letter to Mr. Wayne Jordan, Jordan Real Estate Investments. August 23, 1999

Response. Copies of these documents are provided in Attachment I to this letter

Summary

To address ACEH's concern regarding the potential for vapor intrusion at the Site, which was based on the benzene concentration reported in groundwater in well MW-5 in 1996, we have performed a soil vapor investigation in accordance with our 30 October 2008 *Work Plan for Soil Vapor Investigation, 901 Jefferson Street, Oakland, California, SLIC Case RO0002924*, which you approved in your letter dated 14 November 2008. The investigation found benzene concentrations exceeding the residential ESL in three of ten samples collected. These concentrations were very close to the ESL (the highest concentration, 92 μg/m^3, is only eight μg/m^3 higher than the ESL of 84 μg/m^3). In addition, two of the three samples reported are inconclusive because of the samples in the same locations yielding concentrations less than the ESL.

We evaluated the risk to future Site users using the Johnson & Ettinger Soil Vapor Intrusion model. Our modeling resulted in calculating an excess cancer risk of 2.2 x 10^{-7}, significantly less than the cancer risk criterion of 1 x 10^{-6}.

As we have previously stated, no intrusion of soil vapors into the residential parts of the Site are expected, because of the nature of the foundation (concrete slab and moisture barrier), the air movement in the parking garage, and the excavation and replacement of the soil under the building.

Based on the chemical concentrations, the modeling results, and the nature of the building construction, we conclude there is no significant risk to future Site users because of indoor vapor intrusion.

With respect to your technical comments, we believe we have provided sufficient information in this and previous submittals to demonstrate that soil remaining on the Site, soil taken from the Site, and soil imported to the Site, have been managed appropriately.

We hope this letter answers your questions. Based on the provided information, Treadwell & Rollo asks on behalf of A.F. Evans that the ACEH approve this report and issue a determination of "No Further Action" for SLIC Case RO0002924.

We appreciate the opportunity to work with you on this project. If you have any questions or require additional information, please contact us at (510) 874-4500, extension 529.

Sincerely yours,
TREADWELL & ROLLO, INC.

Louis M. Arighi, PG
Senior Staff Geologist

Grover S. Buhr, PG
Senior Associate Geologist

GROVER BUHR
No. 5596

28200409.OAK

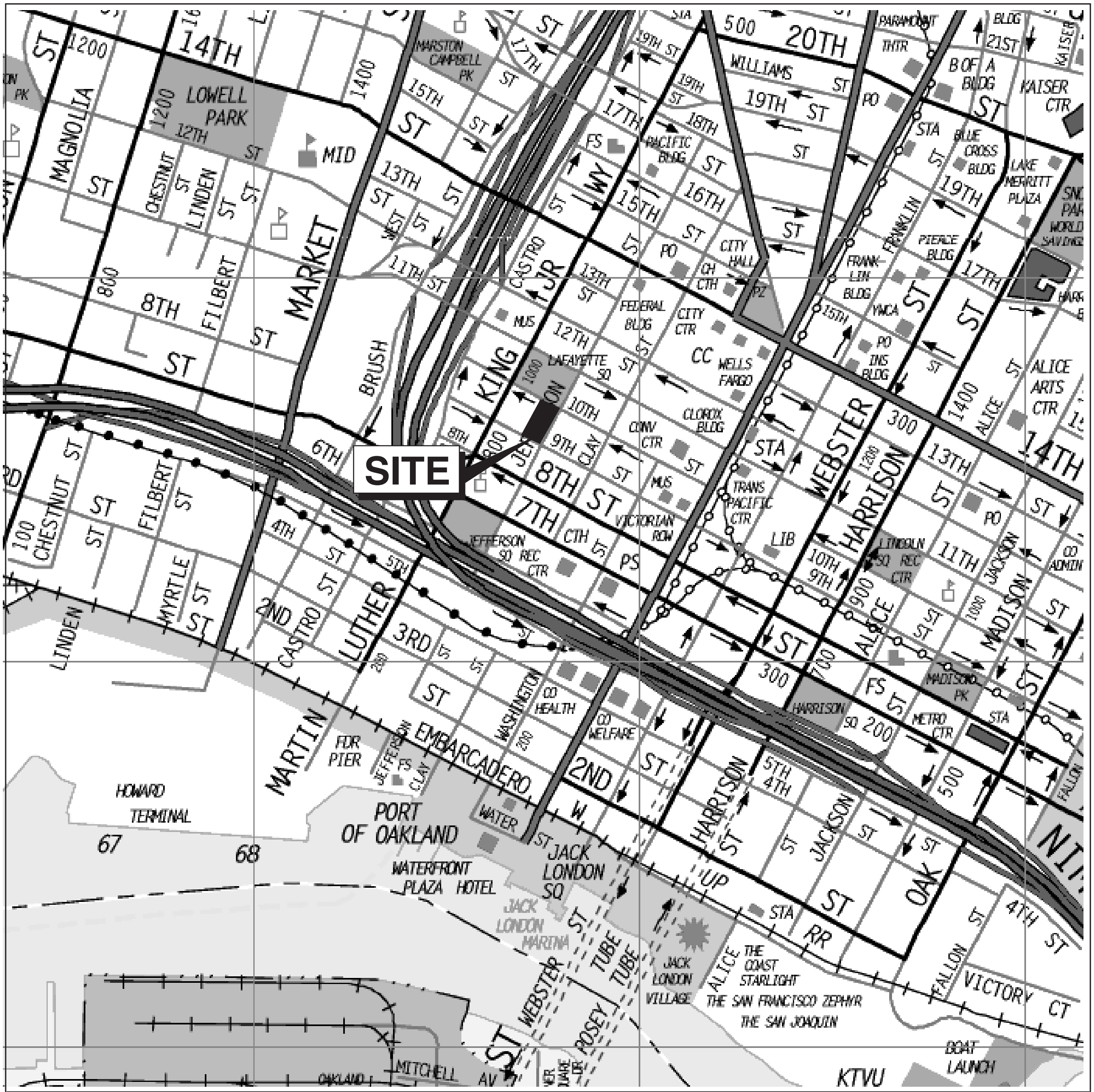
cc. Anye Spivey, A.F. Evans

Figures
Table

Attachments: On CD-ROM

A Permits
B Boring Logs
C Certified Chemical Analytical Results and Chain-of-Custody Record
D Geo Engineering Services Soil Testing Report
E DTSC Spreadsheets for Johnson & Ettinger Vapor Intrusion Model
F *Phase II Environmental Site Assessment of the Former Esprit De Corp Office Elevator Shaft and Parking Lot, Located at 900 Minnesota Street, San Francisco, California,* 5 December 2003, Secor International Corporation
G Site Plan, Vidrio Site (Black Diamond Redevelopment), Pittsburg, California
H Errata, Treadwell & Rollo, *Site Mitigation Completion Report, 901 Jefferson Street, Oakland, California*, 17 March 2008
I Seven Environmental Reports Listed in ACEH 26 August 2008 Letter: Request for Information
  I1 - Woodward-Clyde Consultants, *Hydrocarbon Investigation, 9th and Jefferson Streets, Oakland, California*, 5 June 1990
  I2 - Streamborn, *Letter Report: Risk Assessment for Benzene, 901 Jefferson Street, Oakland, CA.* 4 June 1996
  I3 - Streamborn, *Letter Report: Abandonment of Monitoring Wells MW-5, MW-18, MW-19, and PTW-1, 901 Jefferson Street, Oakland, CA.* 31 October 1996
  I4 - Streamborn, *Letter Report: Shallow Soil Sampling, 901 Jefferson Street, Oakland, CA.* 7 April 1998
  I5 - Streamborn, *Petition (Application) for Reclassification of Lead-Contaminated Soil, 901 Jefferson Street, Oakland, CA.* 26 June 1998
  I6 - Streamborn, *Response to your Request for Additional Information Petition (Application) for Reclassification of Lead-Contaminated Soil, Waste Evaluation Unit File #F171, 901 Jefferson Street, Oakland, CA*. 19 February 1999
  I7 - Department of Toxic Substances Control, *Letter to Mr. Wayne Jordan, Jordan Real Estate Investments*. 23 August 1999

FIGURES



Base map: The Thomas Guide
Alameda County
1999

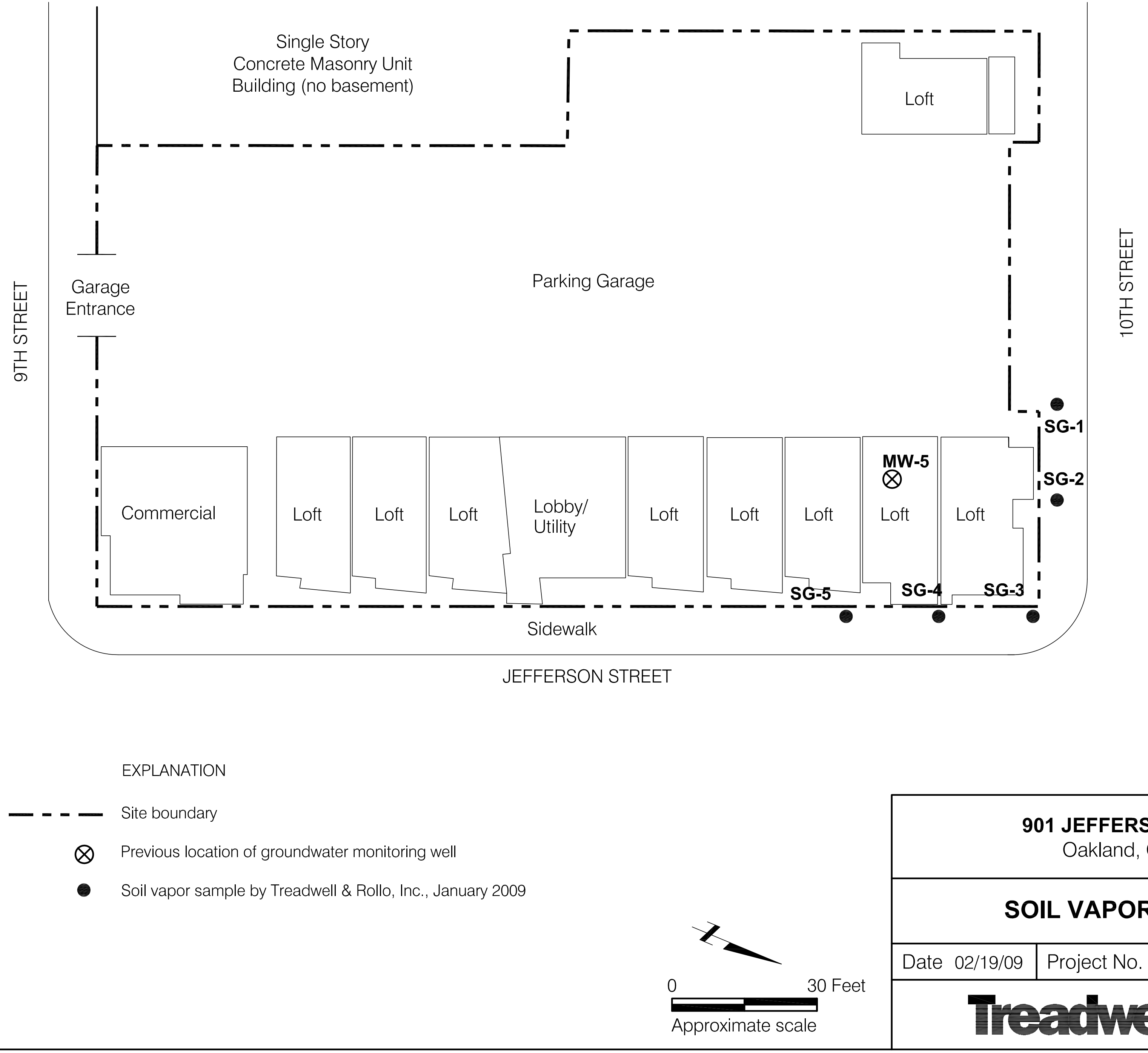
No scale

901 JEFFERSON STREET
Oakland, California

Treadwell&Rollo

SITE LOCATION MAP

Date 02/09/09 | Project No. 2820.04 | Figure 1



901 JEFFERSON STREET
Oakland, California

SOIL VAPOR SAMPLING

Date 02/19/09	Project No. 2820.04	Figure 2

Treadwell&Rollo

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TABLES

Table 1.
SOIL VAPOR ANALYTICAL RESULTS
901 JEFFERSON STREET
Oakland, California

Sample ID	**Purge Volumes**	**Sample Depth (feet bgs)**	**VOCs**							
			Chloroform (ug/m$^{3)}$	**Benzene** (ug/m$^{3)}$	**Toluene** (ug/m$^{3)}$	**Ethyl Benzene** (ug/m$^{3)}$	**m,p-xylenes** (ug/m$^{3)}$	**o-Xylene** (ug/m$^{3)}$	**All Other VOCs** (ug/m$^{3)}$	**TPHg** (ug/m$^{3)}$
SG-1 (TEG)	7	5	< 100	< 80	< 200	< 100	< 200	< 100	ND	ND
SG-1 (Air Toxics)	7	5	**11**	**5.8**	**34**	**8**	**38**	**12**	ND	**1300**
SG-2 (TEG)	7	5	< 100	**92**	< 200	< 100	< 200	< 100	ND	ND
SG-3 (TEG)	1	6	**170**	< 80	< 200	< 100	< 200	< 100	ND	ND
SG-3 (TEG)	3	6	**180**	**85**	< 200	< 100	< 200	< 100	ND	ND
SG-3 (TEG)	7	6	**230**	< 80	< 200	< 100	**240**	< 100	ND	ND
SG-4 (TEG)	7	5	**120**	**83**	< 200	< 100	< 200	< 100	ND	ND
SG-4-DUP (TEG)	7	5	**110**	**88**	< 200	< 100	< 200	< 100	ND	ND
SG-5 (TEG)	7	5	< 100	< 80	< 200	< 100	< 200	< 100	ND	ND
SG-5 (Air Toxics)	7	5	**73**	**10**	**110**	**17**	**61**	**19**	ND	**3700**
ESL-R			460	84	63,000	980	21,000	21,000		10,000

Notes:

VOCs - Volatile organic compounds

TPHg - Total petroleum hydrocarbons as gasoline

ug/m^3 - micrograms per cubic meter

(TEG) - Analysis performed by TEG Northern California, Inc. using EPA Method 8260

(Air Toxics) - Analysis performed by Air Toxics, Ltd using Modified EPA Method TO-15

11 = Bold value indicates detected chemical

< 100 - Not detected at or above the laboratory reporting limit of 100 ug/m^3

ND - Not detected above laboratory reporting limits (limits vary)

ESL-R - Environmental Screening Level for soil vapor, residential land use

ESL values cited from *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* by the San Francisco Bay Regional Water Quality Control Board (2007, revised May 2008) Table E-2, *Shallow Soil Gas Screening Levels*

APPENDIX A
Permits

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Appl# OB090056 Job Site 901 JEFFERSON ST Parcel# 002 -0025-009-00

PERMIT BLOCK 2 PARKING SPACES FOR CONSTRUCNION NO SIDEWALK NO TRAFFIC LANE Permit Issued 01/06/09

JOB SITE

901 JEFFERSON ST

Nbr of days: 1
Effective: 01/12/09

Nbr of meters: 2
Expiration: 01/12/09

SHORT TERM METERED

		Applcnt	Phone#	Lic#	--License Classes--
Owner	901 JEFFERSON STREET ASSOCIATE				
Contractor					
Arch/Engr	TREADWELL AND ROLLO	X	(510)874-4500		
Agent	LOUIS ARIGHI				
Applic Addr	501 14TH ST, OAKLAND, 94612				

$150.33 TOTAL FEES PAID AT ISSUANCE

$66.00	Applic	$65.00	Permit
$.00	Process	$12.45	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other	$6.88	Tech Enh

ADDRESS:

DIST:

TCP needs to be approved by Transportation Services every 30 days or whenever deviated from the previously approved plan.

Applicant: 1/6/09

Issued by: 1/6/09

CITY OF OAKLAND

PAID
SYK 1/6/09

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Appl# OB090057 Job Site 901 JEFFERSON ST Parcel# 002 -0025-009-00

PERMIT BLOCK SIDEWALK FOR CONSTRUCNION NO PARKING
NO TRAFFIC LANE

Permit Issued 01/06/09

JOB SITE

901 JEFFERSON ST

Nbr of days: 2 Linear feet: 25
Effective: 01/12/09 Expiration: 01/13/09

SHORT TERM NON-METERED

		Applcnt	Phone#	Lic#	--License Classes--
Owner	901 JEFFERSON STREET ASSOCIATE				
Contractor					
Arch/Engr	TREADWELL AND ROLLO	X	(510)874-4500		
Agent	LOUIS ARIGHI				
Applic Addr	501 14TH ST, OAKLAND, 94612				

$113.03	TOTAL FEES PAID AT ISSUANCE		
$66.00	Applic	$32.50	Permit
$.00	Process	$9.36	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other	$5.17	Tech Enh

ADDRESS: ______

DIST: ______

TCP needs to be approved by Transportation Services every 30 days or whenever deviated from the previously approved plan.

Applicant: ______ 1/6/09

Issued by: ______ 1/6/09

CITY OF OAKLAND

PAID
SYK 1/6/09

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Appl# X0900056 Job Site 901 JEFFERSON ST Parcel# 002 -0025-009-00

Descr PERMIT TO DO SOIL SAMPLING NO EXCAVATION WITHOUT C42 LICENCE Permit Issued 01/06/09

Work Type EXCAVATION-PRIVATE P

USA #
Util Co. Job #
Util Fund #:
Acctg#:

JOB SITE

		Applcnt	Phone#	Lic#	--License Classes--
Owner	901 JEFFERSON STREET ASSOCIATE				
Contractor					
Arch/Engr	TREADWELL AND ROLLO	X	(510)874-4500		
Agent	LOUIS ARIGHI				
Applic Addr	501 14TH ST, OAKLAND, 94612				

$419.99 TOTAL FEES PAID AT ISSUANCE

$66.00	Applic	$300.00	Permit
$.00	Process	$34.77	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other	$19.22	Tech Enh

DIST: ____ ADDRESS: ____

CITY OF OAKLAND

PAID
SYK 1/6/09

CITY OF OAKLAND
Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL
ENGINEERING

PAGE 2 of 2

Permit valid for 90 days from date of issuance.

PERMIT NUMBER X08 00056*	SITE ADDRESS/LOCATION 901 JEFFERSON
APPROX. START DATE / APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number)
CONTRACTOR'S LICENSE # AND CLASS	CITY BUSINESS TAX #

ATTENTION:

1- State law requires that the contractor/owner call Underground Service Alert (USA) two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1-800-642-2444. Underground Service Alert (USA) # ______________

2- 48 hours prior to starting work, you MUST CALL (510) 238-3651 to schedule an inspection.

3- 48 hours prior to re-paving, a compaction certificate is required (waived for approved slurry backfill).

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. ____________, B&PC for this reason ______________________________.

WORKER'S COMPENSATION

☐ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # ______________________ Company Name ______________________________

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

Signature of Permittee ☐ Agent for ☐ Contractor ☐ Owner

Date 1/6/09

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☐ NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) ☐ YES ☐ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☐ NO
ISSUED BY		DATE ISSUED 1/6/09	

Alameda County Public Works Agency - Water Resources Well Permit

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

Application Approved on: 01/14/2009 By jamesy

Permit Numbers: W2009-0015
Permits Valid from 01/20/2009 to 01/20/2009

Application Id: 1231283845314
City of Project Site: Oakland
Site Location: 901 Jefferson Street, Oakland, CA
[Request start date of Monday, 01/12/2009]
Project Start Date: 01/20/2009
Completion Date: 01/20/2009
Requested Inspection: 01/20/2009
Scheduled Inspection: 01/20/2009 at 8:30 AM (Contact your inspector, Ron Smalley at (510) 670-5407, to confirm.)

Applicant: Treadwell & Rollo, Inc. - Louis Arighi
501 14th Street, Oakland, CA 94612
Phone: 510-874-4500 x541
Property Owner: A.F. A. F. Evans Development, Inc.
1000 Broadway, Suite 300, Oakland, CA 94607
Phone: --
Client: ** same as Property Owner **

	Total Due:	$230.00
Receipt Number: WR2009-0012	**Total Amount Paid:**	$230.00
Payer Name : Louis Arighi	Paid By: VISA	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 5 Boreholes
Driller: TEG-Northern California - Lic #: 706568 - Method: DP

Work Total: $230.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2009-0015	01/14/2009	04/20/2009	5	4.00 in.	9.00 ft

Specific Work Permit Conditions

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

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

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

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

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

6. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and

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

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

APPENDIX B
Boring Logs

PROJECT: **901 JEFFERSON**
Oakland, California

Log of Boring SG-3B

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2
Date started: 1/12/09
Date finished: 1/12/09
Drilling method: Direct Push
Logged by: L. Arighi
Drilled By: TEG
Hammer weight/drop: --
Hammer type: --
Sampler: Microcore

DEPTH (feet)	SAMPLES Sample Number	Sample	Blow Count	Recovery (inches)	OVM (ppm)	LITHOLOGY	MATERIAL DESCRIPTION Surface Conditions:
							CLAYEY SAND (SC) red-brown, medium dense, moist, slightly plastic, no odor[FILL]
1							
2							
3						SC	
4							
5							
6	Soi Vapor Sample	▨					∇
7	SG-3B-6.5	▨					CLAYEY SAND (SC) blue-gray, medium dense, wet, plastic, moderate petroleum odor wet at 6.5 feet
8						SC	
9	SG-3B-8 5	▨					
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

Boring terminated at a depth of 9 feet
Boring backfilled with cement grout.
Groundwater encountered at a depth of 6 5 feet.

Treadwell&Rollo

Project No. 2820.06
Figure B-1

PROJECT: **901 JEFFERSON**
Oakland, California

Log of Boring SG-4B

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: L. Arighi
Drilled By: TEG

Date started: 1/12/09

Date finished: 1/12/09

Drilling method: Direct Push

Hammer weight/drop: --

Hammer type: --

Sampler: Microcore

DEPTH (feet)	SAMPLES Sample Number	Sample	Blow Count	Recovery (inches)	OVM (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
							Surface Conditions:
						SC	CLAYEY SAND (SC) red-brown, medium dense, moist, slightly plastic, no odor
1							
2							
3							
4							
5	Soi Vapor Sample	▨					
6	SG-4B-6 5	▨					∇
7						SC	CLAYEY SAND (SC) blue-gray, medium dense, wet, plastic, moderate petroleum odor wet at 6.5 feet
8	SG-4B-8 5	▨					
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

Boring terminated at a depth of 9 feet
Boring backfilled with cement grout
Groundwater encountered at a depth of 6 5 feet

Treadwell&Rollo

Project No : 2820.06

Figure B-2

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		Symbols	Typical Names
Coarse-Grained Soils (more than half of soil > no. 200 sieve size)	**Gravels** (More than half of coarse fraction > no. 4 sieve size)	**GW**	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)	**SW**	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
Fine -Grained Soils (more than half of soil < no. 200 sieve size)	**Silts and Clays** LL = < 50	**ML**	Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and Clays LL = > 50	**MH**	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic silts and clays of high plasticity
Highly Organic Soils		**PT**	Peat and other highly organic soils

GRAIN SIZE CHART

Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel	3" to No. 4	76.2 to 4.76
coarse	3" to 3/4"	76.2 to 19.1
fine	3/4" to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.075
coarse	No. 4 to No. 10	4.76 to 2.00
medium	No. 10 to No. 40	2.00 to 0.420
fine	No. 40 to No 200	0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

▽ Unstabilized groundwater level

▼ Stabilized groundwater level

SAMPLE DESIGNATIONS/SYMBOLS

▤	Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered
◩	Classification sample taken with Standard Penetration Test sampler
▥	Undisturbed sample taken with thin-walled tube
☒	Disturbed sample
◙	Sampling attempted with no recovery
▯	Core sample
▣	Analytical laboratory sample
▥	Sample taken with Direct Push sampler
▥	Sonic

SAMPLER TYPE

C	Core barrel
CA	California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter
D&M	Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube
O	Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube
PT	Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube
S&H	Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter
SPT	Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter
ST	Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

901 JEFFERSON
Oakland, California

Treadwell&Rollo

CLASSIFICATION CHART

Date 02/11/09 | Project No. 2820.06 | Figure B-3

APPENDIX C
Certified Chemical Analytical Results and Chain of Custody

teg

TEG Northern California Inc.

27 January 2009

Mr. Grover Buhr
Treadwell & Rollo
501 14th Street, 3rd Floor
Oakland, CA 94612

SUBJECT: DATA REPORT - Treadwell & Rollo Project #2820.05
901 Jefferson Street, Oakland, California

TEG Project # 90112D

Mr. Buhr:

Please find enclosed a data report for the samples analyzed from the above referenced project for Treadwell & Rollo. The samples were analyzed on site in TEG's mobile laboratory. TEG conducted a total of 8 analyses on 8 soil vapor samples.

-- 8 analyses on soil vapors for volatile organic hydrocarbons by EPA method 8260B.

The results of the analyses are summarized in the enclosed tables. Applicable detection limits and calibration data are included in the tables.

TEG appreciates the opportunity to have provided analytical services to Treadwell & Rollo on this project. If you have any further questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Leif Jonsson
Principal Analyst, TEG-Northern California

Treadwell & Rollo Project #2820.05
901 Jefferson Street, Oakland, California

TEG Project #90112D

EPA Method 8260B VOC Analyses of SOIL VAPOR in ug/L of Vapor

SAMPLE NUMBER:		Probe Blank	SG-1	SG-2	SG-3	SG-3	SG-3
SAMPLE DEPTH (feet):			5.0	5.0	7.0	7.0	7.0
PURGE VOLUME:			7	7	1	3	7
COLLECTION DATE:		1/12/09	1/12/09	1/12/09	1/12/09	1/12/09	1/12/09
COLLECTION TIME:		09:29	13:10	13:51	09:56	10:16	10:36
DILUTION FACTOR (VOCs):	RL	1	1	1	1	1	1
Dichlorodifluoromethane	0.10	nd	nd	nd	nd	nd	nd
Vinyl Chloride	0.10	nd	nd	nd	nd	nd	nd
Chloroethane	0.10	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.10	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.10	nd	nd	nd	nd	nd	nd
1,1,2-Trichloro-trifluoroethane	0.10	nd	nd	nd	nd	nd	nd
Methylene Chloride	0.10	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	0.10	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.10	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	0.10	nd	nd	nd	nd	nd	nd
Chloroform	0.10	nd	nd	nd	0.17	0.18	0.23
1,1,1-Trichloroethane	0.10	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.10	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane	0.10	nd	nd	nd	nd	nd	nd
Benzene	0.10	nd	nd	nd	nd	nd	nd
Trichloroethene	0.10	nd	nd	nd	nd	nd	nd
Toluene	0.20	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.10	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.10	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.10	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.10	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.20	nd	nd	nd	nd	nd	0.24
o-Xylene	0.10	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.10	nd	nd	nd	nd	nd	nd
1,1 Difluoroethane (leak check)	10	nd	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		110%	112%	109%	108%	106%	106%
Surrogate Recovery (1,2-DCA-d4)		111%	118%	115%	112%	109%	108%
Surrogate Recovery (1,4-BFB)		107%	110%	111%	113%	113%	113%

'RL' Indicates reporting limit at a dilution factor of 1
'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Mr. Jon Edmondson

TEG Project #90112D

EPA Method 8260B VOC Analyses of SOIL VAPOR in ug/L of Vapor

SAMPLE NUMBER:		SG-4	SG-4 dup	SG-5
SAMPLE DEPTH (feet):		5.0	5.0	5.0
PURGE VOLUME:		7	7	7
COLLECTION DATE:		1/12/09	1/12/09	1/12/09
COLLECTION TIME:		11:27	11:27	12:10
DILUTION FACTOR (VOCs):		1	1	1
	RL			
Dichlorodifluoromethane	0.10	nd	nd	nd
Vinyl Chloride	0.10	nd	nd	nd
Chloroethane	0.10	nd	nd	nd
Trichlorofluoromethane	0.10	nd	nd	nd
1,1-Dichloroethene	0.10	nd	nd	nd
1,1,2-Trichloro-trifluoroethane	0.10	nd	nd	nd
Methylene Chloride	0.10	nd	nd	nd
trans-1,2-Dichloroethene	0.10	nd	nd	nd
1,1-Dichloroethane	0.10	nd	nd	nd
cis-1,2-Dichloroethene	0.10	nd	nd	nd
Chloroform	0.10	0.12	0.11	nd
1,1,1-Trichloroethane	0.10	nd	nd	nd
Carbon Tetrachloride	0.10	nd	nd	nd
1,2-Dichloroethane	0.10	nd	nd	nd
Benzene	0.10	nd	nd	nd
Trichloroethene	0.10	nd	nd	nd
Toluene	0.20	nd	nd	nd
1,1,2-Trichloroethane	0.10	nd	nd	nd
Tetrachloroethene	0.10	nd	nd	nd
Ethylbenzene	0.10	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.10	nd	nd	nd
m,p-Xylene	0.20	nd	nd	nd
o-Xylene	0.10	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.10	nd	nd	nd
1,1 Difluoroethane (leak check)	10	nd	nd	nd
Surrogate Recovery (DBFM)		109%	108%	107%
Surrogate Recovery (1,2-DCA-d4)		114%	109%	106%
Surrogate Recovery (1,4-BFB)		112%	112%	109%

'RL' Indicates reporting limit at a dilution factor of 1
'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Mr. Jon Edmondson

TEG Project #90112D

CALIBRATION STANDARDS - Initial Calibration / LCS

Instrument: Agilent 5973N MSD

	INITIAL CALIBRATION		LCS	
COMPOUND	RF	%RSD	RF	%DIFF
Dichlorodifluoromethane*	0.397	4.9%	0.418	5.3%
Vinyl Chloride*	0.324	7.3%	0.334	3.1%
Chloroethane*	0.152	5.7%	0.158	3.9%
Trichlorofluoromethane	0.361	9.6%	0.369	2.2%
1,1-Dichloroethene	0.220	11.2%	0.239	8.6%
1,1,2-Trichloro-trifluoroethane*	0.240	11.8%	0.259	7.9%
Methylene Chloride	0.246	2.9%	0.252	2.4%
trans-1,2-Dichloroethene	0.256	6.2%	0.276	7.8%
1,1-Dichloroethane	0.395	4.7%	0.415	5.1%
cis-1,2-Dichloroethene	0.265	6.5%	0.290	9.4%
Chloroform	0.403	5.6%	0.414	2.7%
1,1,1-Trichloroethane	0.366	5.9%	0.393	7.4%
Carbon Tetrachloride	0.340	9.9%	0.369	8.5%
1,2-Dichloroethane	0.236	5.6%	0.252	6.8%
Benzene	0.932	11.0%	1.016	9.0%
Trichloroethene	0.260	3.9%	0.280	7.7%
Toluene	0.645	12.6%	0.693	7.4%
1,1,2-Trichloroethane	0.142	8.1%	0.156	9.9%
Tetrachloroethene	0.264	6.0%	0.294	11.4%
Ethylbenzene	0.485	8.8%	0.510	5.2%
1,1,1,2-Tetrachloroethane	0.324	3.9%	0.343	5.9%
m,p-Xylene	0.599	12.2%	0.680	13.5%
o-Xylene	0.557	8.4%	0.637	14.4%
1,1,2,2-Tetrachloroethane	0.424	6.7%	0.471	11.1%
Acceptable Limits		20.0%		15.0%

' * ' Indicates RSD not to exceed 30% & LCS not to exceed 25%

teg

Treadwell & Rollo Project #2820.05
901 Jefferson Street, Oakland, California

TEG Project #90112D

Benzene Analyses (EPA Method 8260B) of SOIL VAPOR with a reporting limit of 0.080 ug/L of Vapor

SAMPLE NUMBER:		Probe Blank	SG-1	SG-2	SG-3	SG-3
SAMPLE DEPTH (feet):			5.0	5.0	7.0	7.0
PURGE VOLUME:			7	7	1	3
COLLECTION DATE:		1/12/09	1/12/09	1/12/09	1/12/09	1/12/09
COLLECTION TIME:		09:29	13:10	13:51	09:56	10:16
DILUTION FACTOR (VOCs):	RL	1	1	1	1	1
Benzene	0.080	nd	nd	0.092	nd	0.085

SAMPLE NUMBER:		SG-3	SG-4	SG-4 dup	SG-5
SAMPLE DEPTH (feet):		7.0	5.0	5.0	5.0
PURGE VOLUME.		7	7	7	7
COLLECTION DATE:		1/12/09	1/12/09	1/12/09	1/12/09
COLLECTION TIME:		10:36	11 27	11:27	12:10
DILUTION FACTOR (VOCs):	RL	1	1	1	1
Benzene	0.080	nd	0.083	0.088	nd

'RL' Indicates reporting limit at a dilution factor of 1
'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by. Mr. Jon Edmondson

0901169 006976

Treadwell&Rollo
Environmental and Geotechnical Consultant

CHAIN OF CUSTODY RECORD

Page 1 of 1

☐ 555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041
☒ 501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507
☐ 777 Campus Commons Road, Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7413
☐ 50 Airport Parkway, Suite 175, San Jose, CA 95110 Ph: 408.437.7703/Fax: 408.437.7709

Site Name: 901 Jefferson St
Job Number: 2820.05
Project Manager/Contact: Grover Buhr (gsbuhr@treadwellrollo.com)
Samplers: Louis Arighi (larighi@treadwellrollo.com)
Recorder (Signature Required):

Turnaround Time: Standard

				Matrix				No. Containers & Preservative						Analysis Requested														
Field Sample Identification No.	Date	Time	Lab Sample No.	Soil	Water	Air	Other	HCL	H_2SO_4	HNO_3	Ice			VOCs and TPHg by EPA 8260B												Silica gel clean-up	Hold	Remarks
SG-1	1/12/09	1315	01A			X								X														Tedlar
SG-5	1/12/09	1225	02A			X								X														Tedlar

FED EX
INTACT?
N/A

Relinquished by: (Signature)	Date 1/12/09	Time 1500	Received by: (Signature) Li Li ATL	Date 1/13/09	Time 0850
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by Lab: (Signature)	Date	Time

Sent to Laboratory (Name): Air Toxics LTD.
Laboratory Comments/Notes:

Method of Shipment ☐ Lab courier ☒ Fed Ex ☐ Airborne ☐ UPS
☐ Hand Carried ☐ Private Courier (Co. Name)

White Copy - Original Yellow Copy - Laboratory Pink Copy - Field COC Number:

Air Toxics LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

1/26/2009

Mr. Grover Buhr
Treadwell & Rollo
501 14th St.
3rd Floor
Oakland CA 94612

Project Name: 901 Jefferson St
Project #: 2820.05

Dear Mr. Grover Buhr

The following report includes the data for the above referenced project for sample(s) received on 1/13/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for you air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori
Project Manager

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 .FAX (916) 985-1020
Hours 8:00 A.M to 6:00 P.M. Pacific

Air Toxics LTD.
AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0901169

Work Order Summary

CLIENT:
Mr. Grover Buhr
Treadwell & Rollo
501 14th St.
3rd Floor
Oakland, CA 94612

BILL TO:
Mr. Grover Buhr
Treadwell & Rollo
501 14th St.
3rd Floor
Oakland, CA 94612

PHONE: 510-874-4500 X529

FAX: 510-874-4507

DATE RECEIVED: 01/13/2009

DATE COMPLETED: 01/23/2009

P.O. #

PROJECT # 2820.05 901 Jefferson St

CONTACT: Kyle Vagadori

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SG-1	Modified TO-15	Tedlar Bag	Tedlar Bag
01AA	SG-1 Lab Duplicate	Modified TO-15	Tedlar Bag	Tedlar Bag
02A	SG-5	Modified TO-15	Tedlar Bag	Tedlar Bag
03A	Lab Blank	Modified TO-15	NA	NA
04A	CCV	Modified TO-15	NA	NA
05A	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda L. Freeman

DATE: 01/26/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

Air Toxics LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

LABORATORY NARRATIVE
Modified TO-15
Treadwell & Rollo
Workorder# 0901169

Two 1 Liter Tedlar Bag samples were received on January 13, 2009. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 0.2 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
Daily CCV	</= 30% Difference	</= 30% Difference; Compounds exceeding this criterion and associated data are flagged and narrated.
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The RPD of duplicate samples SG-1 and SG-1 Lab Duplicate exceeded acceptance limits for TPH gasoline.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction no performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SG-1

Lab ID#: 0901169-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,3-Butadiene	0.50	4.6	1.1	10
Freon 11	0.50	4.2	2.8	24
Ethanol	2.0	5.9	3.8	11
Acetone	2.0	18	4.8	42
2-Propanol	2.0	5.9	4.9	14
Carbon Disulfide	0.50	1.9	1.6	5.8
Hexane	0.50	1.6	1.8	5.8
2-Butanone (Methyl Ethyl Ketone)	0.50	2.5	1.5	7.3
Chloroform	0.50	2.3	2.4	11
Cyclohexane	0.50	1.3	1.7	4.6
2,2,4-Trimethylpentane	0.50	0.75	2.3	3.5
Benzene	0.50	1.8	1.6	5.8
Heptane	0.50	1.0	2.0	4.2
Toluene	0.50	8.9	1.9	34
Ethyl Benzene	0.50	1.8	2.2	8.0
m,p-Xylene	0.50	8.8	2.2	38
o-Xylene	0.50	2.7	2.2	12
Styrene	0.50	0.54	2.1	2.3
Propylbenzene	0.50	0.52	2.4	2.6
4-Ethyltoluene	0.50	2.5	2.4	12
1,3,5-Trimethylbenzene	0.50	1.2	2.4	5.7
1,2,4-Trimethylbenzene	0.50	3.5	2.4	17
TPH ref. to Gasoline (MW=100)	10	310	41	1300

Client Sample ID: SG-1 Lab Duplicate

Lab ID#: 0901169-01AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,3-Butadiene	2.0	5.0	4.4	11
Freon 11	2.0	4.5	11	25
Acetone	8.0	17	19	41
Carbon Disulfide	2.0	2.3	6.2	7.1
2-Butanone (Methyl Ethyl Ketone)	2.0	2.4	5.9	7.2
Chloroform	2.0	2.4	9.8	12
Toluene	2.0	8.9	7.5	33
m,p-Xylene	2.0	8.4	8.7	37
o-Xylene	2.0	2.4	8.7	11

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SG-1 Lab Duplicate

Lab ID#: 0901169-01AA

4-Ethyltoluene	2.0	2.4	9.8	12
1,2,4-Trimethylbenzene	2.0	3.2	9.8	16
TPH ref. to Gasoline (MW=100)	40	180	160	740

Client Sample ID: SG-5

Lab ID#: 0901169-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,3-Butadiene	0.50	2.8	1.1	6.3
Freon 11	0.50	3.1	2.8	18
Ethanol	2.0	8.0	3.8	15
Acetone	2.0	14	4.8	32
2-Propanol	2.0	6.6	4.9	16
Carbon Disulfide	0.50	2.3	1.6	7.1
Hexane	0.50	3.4	1.8	12
2-Butanone (Methyl Ethyl Ketone)	0.50	1.7	1.5	4.9
Chloroform	0.50	15	2.4	73
Cyclohexane	0.50	2.7	1.7	9.4
2,2,4-Trimethylpentane	0.50	12	2.3	58
Benzene	0.50	3.2	1.6	10
Heptane	0.50	5.8	2.0	24
Toluene	0.50	29	1.9	110
Ethyl Benzene	0.50	3.9	2.2	17
m,p-Xylene	0.50	14	2.2	61
o-Xylene	0.50	4.4	2.2	19
Styrene	0.50	0.65	2.1	2.8
Propylbenzene	0.50	0.89	2.4	4.4
4-Ethyltoluene	0.50	3.2	2.4	16
1,3,5-Trimethylbenzene	0.50	1.4	2.4	7.0
1,2,4-Trimethylbenzene	0.50	4.4	2.4	22
TPH ref. to Gasoline (MW=100)	10	900	41	3700

Client Sample ID: SG-1

Lab ID#: 0901169-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x011408**	**Date of Collection: 1/12/09**
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/09 05:18 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	4.6	1.1	10
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	4.2	2.8	24
Ethanol	2.0	5.9	3.8	11
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	18	4.8	42
2-Propanol	2.0	5.9	4.9	14
Carbon Disulfide	0.50	1.9	1.6	5.8
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	0.50	Not Detected	1.7	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	1.6	1.8	5.8
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	2.5	1.5	7.3
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	2.3	2.4	11
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	1.3	1.7	4.6
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	0.75	2.3	3.5
Benzene	0.50	1.8	1.6	5.8
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	1.0	2.0	4.2
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	8.9	1.9	34
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected

Client Sample ID: SG-1

Lab ID#: 0901169-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name: x011408 **Date of Collection:** 1/12/09
Dil. Factor: 1.00 **Date of Analysis:** 1/14/09 05:18 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	1.8	2.2	8.0
m,p-Xylene	0.50	8.8	2.2	38
o-Xylene	0.50	2.7	2.2	12
Styrene	0.50	0.54	2.1	2.3
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	0.52	2.4	2.6
4-Ethyltoluene	0.50	2.5	2.4	12
1,3,5-Trimethylbenzene	0.50	1.2	2.4	5.7
1,2,4-Trimethylbenzene	0.50	3.5	2.4	17
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
TPH ref. to Gasoline (MW=100)	10	310	41	1300

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	110	70-130

Client Sample ID: SG-1 Lab Duplicate

Lab ID#: 0901169-01AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x011407**	**Date of Collection: 1/12/09**
Dil. Factor:	**4.00**	**Date of Analysis: 1/14/09 04:31 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	2.0	Not Detected	9.9	Not Detected
Freon 114	2.0	Not Detected	14	Not Detected
Chloromethane	8.0	Not Detected	16	Not Detected
Vinyl Chloride	2.0	Not Detected	5.1	Not Detected
1,3-Butadiene	2.0	5.0	4.4	11
Bromomethane	2.0	Not Detected	7.8	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	2.0	4.5	11	25
Ethanol	8.0	Not Detected	15	Not Detected
Freon 113	2.0	Not Detected	15	Not Detected
1,1-Dichloroethene	2.0	Not Detected	7.9	Not Detected
Acetone	8.0	17	19	41
2-Propanol	8.0	Not Detected	20	Not Detected
Carbon Disulfide	2.0	2.3	6.2	7.1
3-Chloropropene	8.0	Not Detected	25	Not Detected
Methylene Chloride	2.0	Not Detected	6.9	Not Detected
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected
trans-1,2-Dichloroethene	2.0	Not Detected	7.9	Not Detected
Hexane	2.0	Not Detected	7.0	Not Detected
1,1-Dichloroethane	2.0	Not Detected	8.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	2.4	5.9	7.2
cis-1,2-Dichloroethene	2.0	Not Detected	7.9	Not Detected
Tetrahydrofuran	2.0	Not Detected	5.9	Not Detected
Chloroform	2.0	2.4	9.8	12
1,1,1-Trichloroethane	2.0	Not Detected	11	Not Detected
Cyclohexane	2.0	Not Detected	6.9	Not Detected
Carbon Tetrachloride	2.0	Not Detected	12	Not Detected
2,2,4-Trimethylpentane	2.0	Not Detected	9.3	Not Detected
Benzene	2.0	Not Detected	6.4	Not Detected
1,2-Dichloroethane	2.0	Not Detected	8.1	Not Detected
Heptane	2.0	Not Detected	8.2	Not Detected
Trichloroethene	2.0	Not Detected	11	Not Detected
1,2-Dichloropropane	2.0	Not Detected	9.2	Not Detected
1,4-Dioxane	8.0	Not Detected	29	Not Detected
Bromodichloromethane	2.0	Not Detected	13	Not Detected
cis-1,3-Dichloropropene	2.0	Not Detected	9.1	Not Detected
4-Methyl-2-pentanone	2.0	Not Detected	8.2	Not Detected
Toluene	2.0	8.9	7.5	33
trans-1,3-Dichloropropene	2.0	Not Detected	9.1	Not Detected

Client Sample ID: SG-1 Lab Duplicate

Lab ID#: 0901169-01AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name: x011407 **Date of Collection:** 1/12/09
Dil. Factor: 4.00 **Date of Analysis:** 1/14/09 04:31 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,2-Trichloroethane	2.0	Not Detected	11	Not Detected
Tetrachloroethene	2.0	Not Detected	14	Not Detected
2-Hexanone	8.0	Not Detected	33	Not Detected
Dibromochloromethane	2.0	Not Detected	17	Not Detected
1,2-Dibromoethane (EDB)	2.0	Not Detected	15	Not Detected
Chlorobenzene	2.0	Not Detected	9.2	Not Detected
Ethyl Benzene	2.0	Not Detected	8.7	Not Detected
m,p-Xylene	2.0	8.4	8.7	37
o-Xylene	2.0	2.4	8.7	11
Styrene	2.0	Not Detected	8.5	Not Detected
Bromoform	2.0	Not Detected	21	Not Detected
Cumene	2.0	Not Detected	9.8	Not Detected
1,1,2,2-Tetrachloroethane	2.0	Not Detected	14	Not Detected
Propylbenzene	2.0	Not Detected	9.8	Not Detected
4-Ethyltoluene	2.0	2.4	9.8	12
1,3,5-Trimethylbenzene	2.0	Not Detected	9.8	Not Detected
1,2,4-Trimethylbenzene	2.0	3.2	9.8	16
1,3-Dichlorobenzene	2.0	Not Detected	12	Not Detected
1,4-Dichlorobenzene	2.0	Not Detected	12	Not Detected
alpha-Chlorotoluene	2.0	Not Detected	10	Not Detected
1,2-Dichlorobenzene	2.0	Not Detected	12	Not Detected
1,2,4-Trichlorobenzene	8.0	Not Detected	59	Not Detected
Hexachlorobutadiene	8.0	Not Detected	85	Not Detected
TPH ref. to Gasoline (MW=100)	40	180	160	740

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	110	70-130

Client Sample ID: SG-5

Lab ID#: 0901169-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name: x011409 **Date of Collection:** 1/12/09
Dil. Factor: 1.00 **Date of Analysis:** 1/14/09 05:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	2.8	1.1	6.3
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	3.1	2.8	18
Ethanol	2.0	8.0	3.8	15
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	14	4.8	32
2-Propanol	2.0	6.6	4.9	16
Carbon Disulfide	0.50	2.3	1.6	7.1
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	0.50	Not Detected	1.7	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	3.4	1.8	12
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	1.7	1.5	4.9
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	15	2.4	73
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	2.7	1.7	9.4
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	12	2.3	58
Benzene	0.50	3.2	1.6	10
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	5.8	2.0	24
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	29	1.9	110
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected

Client Sample ID: SG-5

Lab ID#: 0901169-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x011409**	**Date of Collection: 1/12/09**
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/09 05:58 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	3.9	2.2	17
m,p-Xylene	0.50	14	2.2	61
o-Xylene	0.50	4.4	2.2	19
Styrene	0.50	0.65	2.1	2.8
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	0.89	2.4	4.4
4-Ethyltoluene	0.50	3.2	2.4	16
1,3,5-Trimethylbenzene	0.50	1.4	2.4	7.0
1,2,4-Trimethylbenzene	0.50	4.4	2.4	22
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
TPH ref. to Gasoline (MW=100)	10	900	41	3700

Container Type: 1 Liter Tedlar Bag

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	108	70-130

Client Sample ID: Lab Blank

Lab ID#: 0901169-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x011404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis:**	**1/14/09 12:59 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	2.0	Not Detected	4.1	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Chloroethane	0.50	Not Detected	1.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	2.0	Not Detected	4.8	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	0.50	Not Detected	1.7	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 0901169-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x011404**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/09 12:59 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
TPH ref. to Gasoline (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	106	70-130

Client Sample ID: CCV

Lab ID#: 0901169-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x011402**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/09 10:49 AM**

Compound	%Recovery
Freon 12	95
Freon 114	96
Chloromethane	98
Vinyl Chloride	93
1,3-Butadiene	85
Bromomethane	106
Chloroethane	100
Freon 11	95
Ethanol	87
Freon 113	88
1,1-Dichloroethene	86
Acetone	87
2-Propanol	88
Carbon Disulfide	87
3-Chloropropene	92
Methylene Chloride	85
Methyl tert-butyl ether	104
trans-1,2-Dichloroethene	80
Hexane	83
1,1-Dichloroethane	86
2-Butanone (Methyl Ethyl Ketone)	78
cis-1,2-Dichloroethene	76
Tetrahydrofuran	81
Chloroform	84
1,1,1-Trichloroethane	94
Cyclohexane	85
Carbon Tetrachloride	97
2,2,4-Trimethylpentane	82
Benzene	79
1,2-Dichloroethane	92
Heptane	84
Trichloroethene	87
1,2-Dichloropropane	84
1,4-Dioxane	88
Bromodichloromethane	90
cis-1,3-Dichloropropene	84
4-Methyl-2-pentanone	85
Toluene	86
trans-1,3-Dichloropropene	84

Client Sample ID: CCV

Lab ID#: 0901169-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x011402**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/09 10:49 AM**

Compound	%Recovery
1,1,2-Trichloroethane	83
Tetrachloroethene	90
2-Hexanone	87
Dibromochloromethane	88
1,2-Dibromoethane (EDB)	80
Chlorobenzene	86
Ethyl Benzene	84
m,p-Xylene	84
o-Xylene	86
Styrene	80
Bromoform	91
Cumene	85
1,1,2,2-Tetrachloroethane	88
Propylbenzene	93
4-Ethyltoluene	76
1,3,5-Trimethylbenzene	103
1,2,4-Trimethylbenzene	86
1,3-Dichlorobenzene	93
1,4-Dichlorobenzene	92
alpha-Chlorotoluene	92
1,2-Dichlorobenzene	92
1,2,4-Trichlorobenzene	95
Hexachlorobutadiene	103
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: LCS

Lab ID#: 0901169-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name: x011403 **Date of Collection:** NA
Dil. Factor: 1.00 **Date of Analysis:** 1/14/09 12:05 PM

Compound	%Recovery
Freon 12	92
Freon 114	92
Chloromethane	96
Vinyl Chloride	91
1,3-Butadiene	86
Bromomethane	105
Chloroethane	99
Freon 11	93
Ethanol	82
Freon 113	97
1,1-Dichloroethene	95
Acetone	92
2-Propanol	88
Carbon Disulfide	94
3-Chloropropene	106
Methylene Chloride	90
Methyl tert-butyl ether	117
trans-1,2-Dichloroethene	89
Hexane	96
1,1-Dichloroethane	90
2-Butanone (Methyl Ethyl Ketone)	88
cis-1,2-Dichloroethene	79
Tetrahydrofuran	91
Chloroform	86
1,1,1-Trichloroethane	94
Cyclohexane	95
Carbon Tetrachloride	96
2,2,4-Trimethylpentane	93
Benzene	81
1,2-Dichloroethane	93
Heptane	95
Trichloroethene	88
1,2-Dichloropropane	86
1,4-Dioxane	99
Bromodichloromethane	102
cis-1,3-Dichloropropene	85
4-Methyl-2-pentanone	98
Toluene	92
trans-1,3-Dichloropropene	86

Client Sample ID: LCS

Lab ID#: 0901169-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x011403**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/09 12:05 PM**

Compound	**%Recovery**
1,1,2-Trichloroethane	85
Tetrachloroethene	92
2-Hexanone	100
Dibromochloromethane	100
1,2-Dibromoethane (EDB)	80
Chlorobenzene	89
Ethyl Benzene	86
m,p-Xylene	87
o-Xylene	89
Styrene	81
Bromoform	104
Cumene	90
1,1,2,2-Tetrachloroethane	92
Propylbenzene	110
4-Ethyltoluene	90
1,3,5-Trimethylbenzene	110
1,2,4-Trimethylbenzene	90
1,3-Dichlorobenzene	98
1,4-Dichlorobenzene	96
alpha-Chlorotoluene	99
1,2-Dichlorobenzene	96
1,2,4-Trichlorobenzene	99
Hexachlorobutadiene	106
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	107	70-130

APPENDIX D
Geo Engineering Services Soil Testing Report

MOISTURE CONTENT, DENSITY AND PERCENT PASSING NO. 200 SIEVE TEST RESULTS

Sample ID	SG-3B-6.5	SG-3B-8.5					
Depth (ft)	-	-					
Date Tested	2/5/2009	2/5/2009					
Tested By	EG	EG					
Soil Description	Silty Sand (SM), dark brown	Silty Sand (SM), dark blue gray with some light gray seams, with some clay					
Specimen Height (in)	3.79	6.90					
Specimen Diameter (in)	1.25	1.25					
Wt. Specimen + Tare (gm)	195.4	345.7					
Wt. Tare (gm)	32.7	48.0					
Wet Wt. Soil + Dish (gm)	317.6	326.4					
Dry Wt. Soil + Dish (gm)	281.2	290.8					
Wt. Dish (gm)	87.3	86.4					
Dish ID Number	D-8	D-9					
Wet Density (pcf)	133.9	134.6					
Dry Density (pcf)	112.7	114.6					
Moisture Content (%)	18.8	17.4					
Gs (assumed)							
Void Ratio							
Saturation (%)							
Wt. Sieve (gm)							
Dry Wt. Soil + Dish (gm) (before washing)							
Dry Wt. Soil + Dish (gm) (after washing)							
% Passing No. 200 Sieve							
Comments	Sample Disturbed (tube diameter of samples varies from 1.15" at one end to 1.28" in center and opposite end)	(tube diameter of samples varies from 1.15" at one end to 1.28" in center and opposite end)					

CLIENT: TREADWELL & ROLLO
PROJECT NAME: 901 Jefferson Street
PROJECT NUMBER: 2820.06

GEO ENGINEERING SERVICES
11 Driftwood Court, Pacifica, Calfiornia 94044
tel 650.359.4260 fax 650.359.2911

APPENDIX E
DTSC Spreadsheets for Johnson & Ettinger Vapor Intrusion Model

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.7E-07	4.7E-04

MESSAGE SUMMARY BELOW:

END

901 JEFFERSON
Oakland, California

DTSC SPREADSHEETS FOR JOHNSON & ETTINGER VAPOR INTRUSION MODEL

Date 02/11/09 | Project No. 2820.06 | Figure E-1

Treadwell&Rollo

DATA ENTRY SHEET

SG-SCREEN
?A Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

	Soil Gas Concentration Data			
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g (?g/m^3)	OR	ENTER Soil gas conc., C_p (ppmv)	Chemical
71432	9.20E+01			Benzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	152.4	24			1.00E-08

MORE ↓

ENTER Vandose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, $?_b^A$ (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, $?_w^V$ (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
L	1.82	0.313	0.181	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

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DTSC SPREADSHEETS FOR JOHNSON & ETTINGER VAPOR INTRUSION MODEL

Date 02/11/09	Project No. 2820.06	Figure E-2

Treadwell&Rollo

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, ? $H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Unit risk factor, URF (?g/m^3)$^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
8.80E-02	9.80E-06	5.54E-03	25	7,342	353.24	562.16	2.9E-05	3.0E-02	78.11

END

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Oakland, California

DTSC SPREADSHEETS FOR JOHNSON & ETTINGER VAPOR INTRUSION MODEL

Date 02/11/09 | Project No. 2820.06 | Figure E-3

Treadwell&Rollo

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, $?_a^V$ (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($?g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.132	#N/A	#N/A	#N/A	1.00E-08	4,000	9.20E+01	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, ? (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $?H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} ($atm\text{-}m^3/mol$)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, $?_{TS}$ (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,977	5.29E-03	2.17E-01	1.80E-04	1.06E-03	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($?g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, ? (unitless)	Infinite source bldg. conc., $C_{building}$ ($?g/m^3$)
15	9.20E+01	1.25	1.76E+01	1.06E-03	5.00E+03	2.61E+14	1.58E-04	1.46E-02

Unit risk factor, URF $(?g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
2.9E-05	3.0E-02

END

901 JEFFERSON
Oakland, California

DTSC SPREADSHEETS FOR JOHNSON & ETTINGER VAPOR INTRUSION MODEL

Date 02/11/09 | Project No. 2820.06 | Figure E-4

Treadwell&Rollo

Soil Properties Lookup Table

SCS Soil Type	K_s (cm/h)	a_1 (1/cm)	N (unitless)	M (unitless)	n (cm^3/cm^3)	q_r (cm^3/cm^3)	Mean Grain Diameter (cm)	Bulk Density (g/cm^3)	q_w (cm^3/cm^3)	SCS Soil Name
C	0.61	0.01496	1.253	0.2019	0.459	0.098	0.0092	1.43	0.215	Clay
CL	0.34	0.01581	1.416	0.2938	0.442	0.079	0.016	1.48	0.168	Clay Loam
L	0.50	0.01112	1.472	0.3207	0.399	0.061	0.020	1.59	0.148	Loam
LS	4.38	0.03475	1.746	0.4273	0.390	0.049	0.040	1.62	0.076	Loamy Sand
S	26.78	0.03524	3.177	0.6852	0.375	0.053	0.044	1.66	0.054	Sand
SC	0.47	0.03342	1.208	0.1722	0.385	0.117	0.025	1.63	0.197	Sandy Clay
SCL	0.55	0.02109	1.330	0.2481	0.384	0.063	0.029	1.63	0.146	Sandy Clay Loam
SI	1.82	0.00658	1.679	0.4044	0.489	0.050	0.0046	1.35	0.167	Silt
SIC	0.40	0.01622	1.321	0.2430	0.481	0.111	0.0039	1.38	0.216	Silty Clay
SICL	0.46	0.00839	1.521	0.3425	0.482	0.090	0.0056	1.37	0.198	Silty Clay Loam
SIL	0.76	0.00506	1.663	0.3987	0.439	0.065	0.011	1.49	0.180	Silt Loam
SL	1.60	0.02667	1.449	0.3099	0.387	0.039	0.030	1.62	0.103	Sandy Loam

		Chemical Properties Lookup Table										CalEPA Toxicity Criteria in bold (last updated 1/21/05 DTSC/HERD)					Original EPA Values				CalEPA / USEPA Potency Ratio
CAS No.	Chemical	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Pure component water solubility, S (mg/L)	Henry's law constant H' (unitless)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°C)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Enthalpy of vaporization at the normal boiling point, $DH_{v,b}$ (cal/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)	URF extrapolated (X)	RfC extrapolated (X)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	URF extrapolated (X)	RfC extrapolated (X)	
56235	Carbon tetrachloride	1.74E+02	7.80E-02	8.80E-06	7.93E+02	1.24E+00	3.03E-02	25	349.90	556.60	7,127	4.2E-05	4.0E-02	1.54E+02			1.5E-05	0.0E+00			2.80
57749	Chlordane	1.20E+05	1.18E-02	4.37E-06	5.60E-02	1.99E-03	4.85E-05	25	624.24	885.73	14,000	3.4E-04	7.0E-04	4.10E+02			1.0E-04	7.0E-04			3.40
58899	gamma-HCH (Lindane)	1.07E+03	1.42E-02	7.34E-06	7.30E+00	5.73E-04	1.40E-05	25	596.55	839.36	15,000	3.1E-04	1.1E-03	2.91E+02	?	X	3.7E-04	1.1E-03	X	X	0.84
60297	Ethyl ether	5.73E+00	7.82E-02	8.61E-06	5.68E+04	1.35E+00	3.29E-02	25	307.50	466.74	6,338	0.0E+00	7.0E-01	7.41E+01		X	0.0E+00	7.0E-01		X	NC
60571	Dieldrin	2.14E+04	1.25E-02	4.74E-06	1.95E-01	6.18E-04	1.51E-05	25	613.32	842.25	17,000	4.6E-03	1.8E-04	3.81E+02		X	4.6E-03	1.8E-04		X	1.00
67641	Acetone	5.75E-01	1.24E-01	1.14E-05	1.00E+06	1.59E-03	3.87E-05	25	329.20	508.10	6,955	0.0E+00	3.5E-01	5.81E+01		X	0.0E+00	3.5E-01		X	NC
67663	Chloroform	3.98E+01	1.04E-01	1.00E-05	7.92E+03	1.50E-01	3.66E-03	25	334.32	536.40	6,988	5.3E-06	3.0E-01	1.19E+02			2.3E-05	0.0E+00			0.23
67721	Hexachloroethane	1.78E+03	2.50E-03	6.80E-06	5.00E+01	1.59E-01	3.88E-03	25	458.00	695.00	9,510	1.1E-05	3.5E-03	2.37E+02		X	4.0E-06	3.5E-03		X	2.75
71432	Benzene	5.89E+01	8.80E-02	9.80E-06	1.79E+03	2.27E-01	5.54E-03	25	353.24	562.16	7,342	2.9E-05	3.0E-02	7.81E+01			7.8E-06	0.0E+00			3.72
71556	1,1,1-Trichloroethane	1.10E+02	7.80E-02	8.80E-06	1.33E+03	7.03E-01	1.72E-02	25	347.24	545.00	7,136	0.0E+00	1.0E+00	1.33E+02			0.0E+00	2.2E+00			NC
72435	Methoxychlor	9.77E+04	1.56E-02	4.46E-06	1.00E-01	6.46E-04	1.58E-05	25	651.02	848.49	16,000	0.0E+00	1.8E-02	3.46E+02		X	0.0E+00	1.8E-02		X	NC
72559	DDE	4.47E+06	1.44E-02	5.87E-06	1.20E-01	8.59E-04	2.09E-05	25	636.44	860.38	15,000	9.7E-05	0.0E+00	3.18E+02	?		9.7E-05	0.0E+00	X		1.00
74839	Methyl bromide	1.05E+01	7.28E-02	1.21E-05	1.52E+04	2.55E-01	6.22E-03	25	276.71	467.00	5,714	0.0E+00	5.0E-03	9.49E+01			0.0E+00	5.0E-03			NC
74873	Methyl chloride (chloromethane)	2.12E+00	1.26E-01	6.50E-06	5.33E+03	3.61E-01	8.80E-03	25	249.00	416.25	5,115	1.0E-06	9.0E-02	5.05E+01			1.0E-06	9.0E-02			1.00
74908	Hydrogen cyanide	3.80E+00	1.93E-01	2.10E-05	1.00E+06	5.44E-03	1.33E-04	25	299.00	456.70	6,676	0.0E+00	3.0E-03	2.70E+01			0.0E+00	3.0E-03			NC
74953	Methylene bromide	1.26E+01	4.30E-02	8.44E-06	1.19E+04	3.52E-02	8.59E-04	25	370.00	583.00	7,868	0.0E+00	3.5E-02	1.74E+02		X	0.0E+00	3.5E-02		X	NC
75003	Chloroethane (ethyl chloride)	4.40E+00	2.71E-01	1.15E-05	5.68E+03	3.61E-01	8.80E-03	25	285.30	460.40	5,879	8.3E-07	1.0E+01	6.45E+01	X		8.3E-07	1.0E+01	X		1.00
75014	Vinyl chloride (chloroethene)	1.86E+01	1.06E-01	1.23E-05	8.80E+03	1.10E+00	2.69E-02	25	259.25	432.00	5,250	7.8E-05	1.0E-01	6.25E+01			8.8E-06	1.0E-01			8.86
75058	Acetonitrile	4.20E+00	1.28E-01	1.66E-05	1.00E+06	1.42E-03	3.45E-05	25	354.60	545.50	7,110	0.0E+00	6.0E-02	4.11E+01			0.0E+00	6.0E-02			NC
75070	Acetaldehyde	1.06E+00	1.24E-01	1.41E-05	1.00E+06	3.23E-03	7.87E-05	25	293.10	466.00	6,157	2.7E-06	9.0E-03	4.41E+01			2.2E-06	9.0E-03			1.23
75092	Methylene chloride	1.17E+01	1.01E-01	1.17E-05	1.30E+04	8.96E-02	2.18E-03	25	313.00	510.00	6,706	1.0E-06	4.0E-01	8.49E+01			4.7E-07	3.0E+00			2.13
75150	Carbon disulfide	4.57E+01	1.04E-01	1.00E-05	1.19E+03	1.24E+00	3.02E-02	25	319.00	552.00	6,391	0.0E+00	7.0E-01	7.61E+01			0.0E+00	7.0E-01			NC
75218	Ethylene oxide	1.33E+00	1.04E-01	1.45E-05	3.04E+05	2.27E-02	5.54E-04	25	283.60	469.00	6,104	8.8E-05	3.0E-02	4.41E+01			1.0E-04	0.0E+00			0.88
75252	Bromoform	8.71E+01	1.49E-02	1.03E-05	3.10E+03	2.41E-02	5.88E-04	25	422.35	696.00	9,479	1.1E-06	7.0E-02	2.53E+02		X	1.1E-06	7.0E-02		X	1.00
75274	Bromodichloromethane	5.50E+01	2.98E-02	1.06E-05	6.74E+03	6.54E-02	1.60E-03	25	363.15	585.85	7,800	3.7E-05	7.0E-02	1.64E+02	?	X	1.8E-05	7.0E-02	X	X	2.09
75296	2-Chloropropane	9.14E+00	8.88E-02	1.01E-05	3.73E+03	5.93E-01	1.45E-02	25	308.70	485.00	6,286	0.0E+00	1.0E-01	7.85E+01			0.0E+00	1.0E-01			NC
75343	1,1-Dichloroethane	3.16E+01	7.42E-02	1.05E-05	5.06E+03	2.30E-01	5.61E-03	25	330.55	523.00	6,895	1.6E-06	5.0E-01	9.90E+01			0.0E+00	5.0E-01			CalEPA only
75354	1,1-Dichloroethylene	5.89E+01	9.00E-02	1.04E-05	2.25E+03	1.07E+00	2.60E-02	25	304.75	576.05	6,247	0.0E+00	7.0E-02	9.69E+01			0.0E+00	2.0E-01			NC
75456	Chlorodifluoromethane	4.79E+01	1.01E-01	1.28E-05	2.00E+00	1.10E+00	2.70E-02	25	232.40	369.30	4,836	0.0E+00	5.0E+01	8.65E+01			0.0E+00	5.0E+01			NC
75694	Trichlorofluoromethane	4.97E+02	8.70E-02	9.70E-06	1.10E+03	3.97E+00	9.68E-02	25	296.70	471.00	5,999	0.0E+00	7.0E-01	1.37E+02			0.0E+00	7.0E-01			NC
75718	Dichlorodifluoromethane	4.57E+02	6.65E-02	9.92E-06	2.80E+02	1.40E+01	3.42E-01	25	243.20	384.95	9,421	0.0E+00	2.0E-01	1.21E+02			0.0E+00	2.0E-01			NC
76131	1,1,2-Trichloro-1,2,2-trifluoroetha	1.11E+04	7.80E-02	8.20E-06	1.70E+02	1.97E+01	4.80E-01	25	320.70	487.30	6,463	0.0E+00	3.0E+01	1.87E+02			0.0E+00	3.0E+01			NC
76448	Heptachlor	1.41E+06	1.12E-02	5.69E-06	1.80E-01	6.05E+01	1.48E+00	25	603.69	846.31	13,000	1.6E-03	1.8E-03	3.73E+02		X	1.3E-03	1.8E-03		X	1.23
77474	Hexachlorocyclopentadiene	2.00E+05	1.61E-02	7.21E-06	1.80E+00	1.10E+00	2.69E-02	25	512.15	746.00	10,931	0.0E+00	2.0E-04	2.73E+02			0.0E+00	2.0E-04			NC
78831	Isobutanol	2.59E+00	8.60E-02	9.30E-06	8.50E+04	4.83E-04	1.18E-05	25	381.04	547.78	10,936	0.0E+00	1.1E+00	7.41E+01		X	0.0E+00	1.1E+00		X	NC
78875	1,2-Dichloropropane	4.37E+01	7.82E-02	8.73E-06	2.80E+03	1.15E-01	2.79E-03	25	369.52	572.00	7,590	1.0E-05	4.0E-03	1.13E+02	?		1.9E-05	4.0E-03	X		0.52
78933	Methylethylketone (2-butanone)	2.30E+00	8.08E-02	9.80E-06	2.23E+05	2.29E-03	5.58E-05	25	352.50	536.78	7,481	0.0E+00	5.0E+00	7.21E+01			0.0E+00	1.0E+00			NC
79005	1,1,2-Trichloroethane	5.01E+01	7.80E-02	8.80E-06	4.42E+03	3.73E-02	9.11E-04	25	386.15	602.00	8,322	1.6E-05	1.4E-02	1.33E+02		X	1.6E-05	1.4E-02		X	1.00
79016	Trichloroethylene	1.66E+02	7.90E-02	9.10E-06	1.47E+03	4.21E-01	1.03E-02	25	360.36	544.20	7,505	2.0E-06	6.0E-01	1.31E+02	?		1.1E-04	4.0E-02	X		0.02
79209	Methyl acetate	3.26E+00	1.04E-01	1.00E-05	2.00E+03	4.84E-03	1.18E-04	25	329.80	506.70	7,260	0.0E+00	3.5E+00	7.41E+01		X	0.0E+00	3.5E+00		X	NC
79345	1,1,2,2-Tetrachloroethane	9.33E+01	7.10E-02	7.90E-06	2.96E+03	1.41E-02	3.44E-04	25	419.60	661.15	8,996	5.8E-05	2.1E-01	1.68E+02		X	5.8E-05	2.1E-01		X	1.00
79469	2-Nitropropane	1.17E+01	9.23E-02	1.01E-05	1.70E+04	5.03E-03	1.23E-04	25	393.20	594.00	8,383	2.7E-03	2.0E-02	8.91E+01			2.7E-03	2.0E-02			1.00
80626	Methylmethacrylate	6.98E+00	7.70E-02	8.60E-06	1.50E+04	1.38E-02	3.36E-04	25	373.50	567.00	8,975	0.0E+00	7.0E-01	1.00E+02			0.0E+00	7.0E-01			NC
83329	Acenaphthene	7.08E+03	4.21E-02	7.69E-06	3.57E+00	6.34E-03	1.55E-04	25	550.54	803.15	12,155	0.0E+00	2.1E-01	1.54E+02		X	0.0E+00	2.1E-01		X	NC
86737	Fluorene	1.38E+04	3.63E-02	7.88E-06	1.98E+00	2.60E-03	6.34E-05	25	570.44	870.00	12,666	0.0E+00	1.4E-01	1.66E+02		X	0.0E+00	1.4E-01		X	NC

901 JEFFERSON
Oakland, California

DTSC SPREADSHEETS FOR JOHNSON & ETTINGER VAPOR INTRUSION MODEL

Date 02/11/09	Project No. 2820.06	Figure E-5

Treadwell&Rollo

87683	Hexachloro-1,3-butadiene	5.37E+04	5.61E-02	6.16E-06	3.20E+00	3.33E-01	8.13E-03	25	486.15	738.00	10,206	2.2E-05	7.0E-04	2.61E+02		X	2.2E-05	7.0E-04		X	1.00
88722	o-Nitrotoluene	3.24E+02	5.87E-02	8.67E-06	6.50E+02	5.11E-04	1.25E-05	25	495.00	720.00	12,239	0.0E+00	3.5E-02	1.37E+02		X	0.0E+00	3.5E-02		X	NC
91203	Naphthalene	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	4.82E-04	25	491.14	748.40	10,373	3.4E-05	3.0E-03	1.28E+02			0.0E+00	3.0E-03			NC
91576	2-Methylnaphthalene	2.81E+03	5.22E-02	7.75E-06	2.46E+01	2.12E-02	5.17E-04	25	514.26	761.00	12,600	0.0E+00	7.0E-02	1.42E+02		X	0.0E+00	7.0E-02		X	NC
92524	Biphenyl	4.38E+03	4.04E-02	8.15E-06	7.45E+00	1.23E-02	2.99E-04	25	529.10	789.00	10,890	0.0E+00	1.8E-01	1.54E+02		X	0.0E+00	1.8E-01		X	NC
95476	o-Xylene	3.63E+02	8.70E-02	1.00E-05	1.78E+02	2.12E-01	5.18E-03	25	417.60	630.30	8,661	0.0E+00	1.0E-01	1.06E+02		?	0.0E+00	1.0E-01			NC
95501	1,2-Dichlorobenzene	6.17E+02	6.90E-02	7.90E-06	1.56E+02	7.77E-02	1.90E-03	25	453.57	705.00	9,700	0.0E+00	2.0E-01	1.47E+02			0.0E+00	2.0E-01			NC
95578	2-Chlorophenol	3.88E+02	5.01E-02	9.46E-06	2.20E+04	1.60E-02	3.90E-04	25	447.53	675.00	9,572	0.0E+00	1.8E-02	1.29E+02		X	0.0E+00	1.8E-02		X	NC
95636	1,2,4-Trimethylbenzene	1.35E+03	6.06E-02	7.92E-06	5.70E+01	2.52E-01	6.14E-03	25	442.30	649.17	9,369	0.0E+00	6.0E-03	1.20E+02			0.0E+00	6.0E-03			NC
96184	1,2,3-Trichloropropane	2.20E+01	7.10E-02	7.90E-06	1.75E+03	1.67E-02	4.08E-04	25	430.00	652.00	9,171	5.7E-04	4.9E-03	1.47E+02	X		5.7E-04	4.9E-03	X		1.00
96333	Methyl acrylate	4.53E+00	9.76E-02	1.02E-05	6.00E+04	7.68E-03	1.87E-04	25	353.70	536.00	7,749	0.0E+00	1.1E-01	8.61E+01		X	0.0E+00	1.1E-01		X	NC
97632	Ethylmethacrylate	2.95E+01	6.53E-02	8.37E-06	3.67E+03	3.44E-02	8.40E-04	25	390.00	571.00	10,957	0.0E+00	3.2E-01	1.14E+02		X	0.0E+00	3.2E-01		X	NC
98066	tert-Butylbenzene	7.71E+02	5.65E-02	8.02E-06	2.95E+01	4.87E-01	1.19E-02	25	442.10	1220.00	8,980	0.0E+00	1.4E-01	1.34E+02		X	0.0E+00	1.4E-01		X	NC
98828	Cumene	4.89E+02	6.50E-02	7.10E-06	6.13E+01	4.74E+01	1.16E+00	25	425.56	631.10	10,335	0.0E+00	4.0E-01	1.20E+02			0.0E+00	4.0E-01			NC
98862	Acetophenone	5.77E+01	6.00E-02	8.73E-06	6.13E+03	4.38E-04	1.07E-05	25	475.00	709.50	11,732	0.0E+00	3.5E-01	1.20E+02		X	0.0E+00	3.5E-01		X	NC
98953	Nitrobenzene	6.46E+01	7.60E-02	8.60E-06	2.09E+03	9.82E-04	2.39E-05	25	483.95	719.00	10,566	0.0E+00	2.0E-03	1.23E+02			0.0E+00	2.0E-03			NC
100414	Ethylbenzene	3.63E+02	7.50E-02	7.80E-06	1.69E+02	3.22E-01	7.86E-03	25	409.34	617.20	8,501	0.0E+00	1.0E+00	1.06E+02			0.0E+00	1.0E+00			NC
100425	Styrene	7.76E+02	7.10E-02	8.00E-06	3.10E+02	1.12E-01	2.74E-03	25	418.31	636.00	8,737	0.0E+00	9.0E-01	1.04E+02			0.0E+00	1.0E+00			NC
100447	Benzylchloride	6.14E+01	7.50E-02	7.80E-06	5.25E+02	1.70E-02	4.14E-04	25	452.00	685.00	8,773	4.9E-05	0.0E+00	1.27E+02	?		4.9E-05	0.0E+00	X		1.00
100527	Benzaldehyde	4.59E+01	7.21E-02	9.07E-06	3.30E+03	9.73E-04	2.37E-05	25	452.00	695.00	11,658	0.0E+00	3.5E-01	1.06E+02		X	0.0E+00	3.5E-01		X	NC
103651	n-Propylbenzene	5.62E+02	6.01E-02	7.83E-06	6.00E+01	4.37E-01	1.07E-02	25	432.20	630.00	9,123	0.0E+00	1.4E-01	1.20E+02		X	0.0E+00	1.4E-01		X	NC
104518	n-Butylbenzene	1.11E+03	5.70E-02	8.12E-06	2.00E+00	5.38E-01	1.31E-02	25	456.46	660.50	9,290	0.0E+00	1.4E-01	1.34E+02		X	0.0E+00	1.4E-01		X	NC
106423	p-Xylene	3.89E+02	7.69E-02	8.44E-06	1.85E+02	3.13E-01	7.64E-03	25	411.52	616.20	8,525	0.0E+00	1.0E-01	1.06E+02		?	0.0E+00	1.0E-01			NC
106467	1,4-Dichlorobenzene	6.17E+02	6.90E-02	7.90E-06	7.90E+01	9.82E-02	2.39E-03	25	447.21	684.75	9,271	1.1E-05	8.0E-01	1.47E+02			0.0E+00	8.0E-01			CalEPA on
106934	1,2-Dibromoethane (ethylene dibr	2.50E+01	2.17E-02	1.19E-05	4.18E+03	3.04E-02	7.41E-04	25	404.60	583.00	8,310	7.1E-05	8.0E-04	1.88E+02			6.0E-04	9.0E-03			0.12
106990	1,3-Butadiene	1.91E+01	2.49E-01	1.08E-05	7.35E+02	3.01E+00	7.34E-02	25	268.60	425.00	5,370	1.7E-04	2.0E-03	5.41E+01			3.0E-05	0.0E+00			5.67
107028	Acrolein	2.76E+00	1.05E-01	1.22E-05	2.13E+05	4.99E-03	1.22E-04	25	325.60	506.00	6,731	0.0E+00	2.0E-05	5.61E+01			0.0E+00	2.0E-05			NC
107062	1,2-Dichloroethane	1.74E+01	1.04E-01	9.90E-06	8.52E+03	4.00E-02	9.77E-04	25	356.65	561.00	7,643	2.1E-05	4.0E-01	9.90E+01			2.6E-05	0.0E+00			0.81
107131	Acrylonitrile	5.90E+00	1.22E-01	1.34E-05	7.40E+04	4.21E-03	1.03E-04	25	350.30	519.00	7,786	2.9E-04	2.0E-03	5.31E+01			6.8E-05	2.0E-03			4.26
108054	Vinyl acetate	5.25E+00	8.50E-02	9.20E-06	2.00E+04	2.09E-02	5.10E-04	25	345.65	519.13	7,800	0.0E+00	2.0E-01	8.61E+01			0.0E+00	2.0E-01			NC
108101	Methylisobutylketone (4-methyl-2-	9.06E+00	7.50E-02	7.80E-06	1.90E+04	5.64E-03	1.38E-04	25	389.50	571.00	8,243	0.0E+00	8.0E-02	1.00E+02			0.0E+00	8.0E-02			NC
108383	m-Xylene	4.07E+02	7.00E-02	7.80E-06	1.61E+02	3.00E-01	7.32E-03	25	412.27	617.05	8,523	0.0E+00	1.0E-01	1.06E+02		?	0.0E+00	1.0E-01			NC
108678	1,3,5-Trimethylbenzene	1.35E+03	6.02E-02	8.67E-06	2.00E+00	2.41E-01	5.87E-03	25	437.89	637.25	9,321	0.0E+00	6.0E-03	1.20E+02			0.0E+00	6.0E-03			NC
108872	Methylcyclohexane	7.85E+01	7.35E-02	8.52E-06	1.40E+01	4.22E+00	1.03E-01	25	373.90	572.20	7,474	0.0E+00	3.0E+00	9.82E+01			0.0E+00	3.0E+00			NC
108883	Toluene	1.82E+02	8.70E-02	8.60E-06	5.26E+02	2.72E-01	6.62E-03	25	383.78	591.79	7,930	0.0E+00	3.0E-01	9.21E+01			0.0E+00	4.0E-01			NC
108907	Chlorobenzene	2.19E+02	7.30E-02	8.70E-06	4.72E+02	1.51E-01	3.69E-03	25	404.87	632.40	8,410	0.0E+00	1.0E+00	1.13E+02			0.0E+00	6.0E-02			NC
109693	1-Chlorobutane	1.72E+01	8.26E-02	1.00E-05	1.10E+03	6.93E-01	1.69E-02	25	351.60	542.00	7,263	0.0E+00	1.4E+00	9.26E+01		X	0.0E+00	1.4E+00		X	NC
110009	Furan	1.86E+01	1.04E-01	1.22E-05	1.00E+04	2.21E-01	5.39E-03	25	304.60	490.20	6,477	0.0E+00	3.5E-03	6.81E+01		X	0.0E+00	3.5E-03		X	NC
110543	Hexane	4.34E+01	2.00E-01	7.77E-06	1.24E+01	6.82E+01	1.66E+00	25	341.70	508.00	6,895	0.0E+00	2.0E-01	8.62E+01			0.0E+00	2.0E-01			NC
111444	Bis(2-chloroethyl)ether	1.55E+01	6.92E-02	7.53E-06	1.72E+04	7.36E-04	1.80E-05	25	451.15	659.79	10,803	7.1E-04	0.0E+00	1.43E+02			3.3E-04	0.0E+00			2.15
115297	Endosulfan	2.14E+03	1.15E-02	4.55E-06	5.10E-01	4.58E-04	1.12E-05	25	674.43	942.94	14,000	0.0E+00	2.1E-02	4.07E+02		X	0.0E+00	2.1E-02		X	NC
118741	Hexachlorobenzene	5.50E+04	5.42E-02	5.91E-06	5.00E-03	5.40E-02	1.32E-03	25	582.55	825.00	14,447	5.1E-04	2.8E-03	2.85E+02		X	4.6E-04	2.8E-03		X	1.11
120821	1,2,4-Trichlorobenzene	1.78E+03	3.00E-02	8.23E-06	4.88E+01	5.81E-02	1.42E-03	25	486.15	725.00	10,471	0.0E+00	2.0E-01	1.81E+02			0.0E+00	2.0E-01			NC
123739	Crotonaldehyde (2-butenal)	4.82E+00	9.56E-02	1.07E-05	3.69E+04	7.99E-04	1.95E-05	25	375.20	568.00	9	5.4E-04	0.0E+00	7.01E+01	X		5.4E-04	0.0E+00	X		1.00
124481	Chlorodibromomethane	6.31E+01	1.96E-02	1.05E-05	2.60E+03	3.20E-02	7.81E-04	25	416.14	678.20	5,900	2.7E-05	7.0E-02	2.08E+02	?	X	2.4E-05	7.0E-02	X	X	1.13
126987	Methacrylonitrile	3.58E+01	1.12E-01	1.32E-05	2.54E+04	1.01E-02	2.46E-04	25	363.30	554.00	7,600	0.0E+00	7.0E-04	6.71E+01			0.0E+00	7.0E-04			NC
126998	2-Chloro-1,3-butadiene (chloropre	6.73E+01	8.58E-02	1.03E-05	2.12E+03	4.91E-01	1.20E-02	25	332.40	525.00	8,075	0.0E+00	7.0E-03	8.85E+01			0.0E+00	7.0E-03			NC
127184	Tetrachloroethylene	1.55E+02	7.20E-02	8.20E-06	2.00E+02	7.53E-01	1.84E-02	25	394.40	620.20	8,288	5.9E-06	3.5E-02	1.66E+02			3.0E-06	0.0E+00			1.97
129000	Pyrene	1.05E+05	2.72E-02	7.24E-06	1.35E+00	4.50E-04	1.10E-05	25	667.95	936	14370	0.0E+00	1.1E-01	2.02E+02		X	0.0E+00	1.1E-01		X	NC
132649	Dibenzofuran	5.15E+03	2.38E-02	6.00E-06	3.10E+00	5.15E-04	1.26E-05	25	560	824	66400	0.0E+00	1.4E-02	1.68E+02		X	0.0E+00	1.4E-02		X	NC
135988	sec-Butylbenzene	9.66E+02	5.70E-02	8.12E-06	3.94E+00	5.68E-01	1.39E-02	25	446.5	679	88730	0.0E+00	1.4E-01	1.34E+02		X	0.0E+00	1.4E-01		X	NC
141786	Ethylacetate	6.44E+00	7.32E-02	9.70E-06	8.03E+04	5.64E-03	1.38E-04	25	350.26	523.3	7633.66	0.0E+00	3.2E+00	8.81E+01		X	0.0E+00	3.2E+00		X	NC
156592	cis-1,2-Dichloroethylene	3.55E+01	7.36E-02	1.13E-05	3.50E+03	1.67E-01	4.07E-03	25	333.65	544	7192	0.0E+00	3.5E-02	9.69E+01		X	0.0E+00	3.5E-02		X	NC
156605	trans-1,2-Dichloroethylene	5.25E+01	7.07E-02	1.19E-05	6.30E+03	3.84E-01	9.36E-03	25	320.85	516.5	6717	0.0E+00	7.0E-02	9.69E+01		X	0.0E+00	7.0E-02		X	NC
205992	Benzo(b)fluoranthene	1.23E+06	2.26E-02	5.56E-06	1.50E-03	4.54E-03	1.11E-04	25	715.9	969.27	17000	1.1E-04	0.0E+00	2.52E+02	?		2.1E-04	0.0E+00	X		0.53
218019	Chrysene	3.98E+05	2.48E-02	6.21E-06	6.30E-03	3.87E-03	9.44E-05	25	714.15	979	16455	1.1E-05	0.0E+00	2.28E+02	?		2.1E-06	0.0E+00	X		5.26
309002	Aldrin	2.45E+06	1.32E-02	4.86E-06	1.70E-02	6.95E-03	1.70E-04	25	603.01	839.37	15000	4.9E-03	1.1E-04	3.65E+02		X	4.9E-03	1.1E-04		X	1.00
319846	alpha-HCH (alpha-BHC)	1.23E+03	1.42E-02	7.34E-06	2.00E+00	4.34E-04	1.06E-05	25	596.55	839.36	15000	7.7E-04	0.0E+00	2.91E+02			1.8E-03	0.0E+00			0.43
541731	1,3-Dichlorobenzene	1.98E+03	6.92E-02	7.86E-06	1.34E+02	1.27E-01	3.09E-03	25	446	684	9230.18	0.0E+00	1.1E-01	1.47E+02		X	0.0E+00	1.1E-01		X	NC
542756	1,3-Dichloropropene	4.57E+01	6.26E-02	1.00E-05	2.80E+03	7.24E-01	1.77E-02	25	381.15	587.38	7900	1.6E-05	2.0E-02	1.11E+02			4.0E-06	2.0E-02			4.00
630206	1,1,1,2-Tetrachloroethane	1.16E+02	7.10E-02	7.90E-06	1.10E+03	9.90E-02	2.41E-03	25	403.5	624	9768.282525	7.4E-06	1.1E-01	1.68E+02		X	7.4E-06	1.1E-01		X	1.00
1634044	MTBE	7.26E+00	1.02E-01	1.05E-05	5.10E+04	2.56E-02	6.23E-04	25	328.3	497.1	6677.66	2.6E-07	3.0E+00	8.82E+01			0.0E+00	3.0E+00			CalEPA on
7439976	Mercury (elemental)	5.20E+01	3.07E-02	6.30E-06	2.00E+01	4.40E-01	1.07E-02	25	629.88	1750	14127	0.0E+00	9.0E-05	2.01E+02			0.0E+00	3.0E-04			NC

901 JEFFERSON
Oakland, California

DTSC SPREADSHEETS FOR JOHNSON & ETTINGER VAPOR INTRUSION MODEL

Date 02/11/09 | Project No. 2820.06 | Figure E-6

Treadwell&Rollo

APPENDIX F

Phase II Environmental Site Assessment of the Former Esprit De Corp Office Elevator Shaft and Parking Lot, Located at 900 Minnesota Street, San Francisco, California, 5 December 2003, Secor International Corporation

December 5, 2003

Mr. Lou Vasquez
Build Inc.
322 Fell Street
San Francisco, CA 94102

PHASE II ENVIRONMENTAL SITE ASSESSMENT OF THE FORMER ESPRIT DE CORP OFFICE ELEVATOR SHAFT AND PARKING LOT, LOCATED AT 900 MINNESOTA STREET, SAN FRANCISCO, CALIFORNIA

SECOR Project No: 06OT.04385.00

Dear Mr. Vasquez:

This letter report presents Build, Inc. (Build) with the results of the Phase II Environmental Site Assessment (ESA) conducted by SECOR International Incorporated (SECOR) at the above referenced site (the Property; Figure 1, Site Location Map). According to an October 22, 2003 Phase I Environmental Site Assessment report by Avalon Environmental Consultants (Avalon), the Property consists of a three-story building which is vacant and was formerly occupied by the Esprit de Corp. (Esprit) corporate headquarters. The focus of this Phase II ESA was the elevator shaft within the existing three-story building and the parking lot area located on the northern portion of the Property (Figure 2, Site Plan).

SECOR understands that Build is considering purchasing and subsequently renovating the Property. This work was performed in accordance with SECOR's proposal dated November 3, 2003, which was authorized by Build on November 5, 2003. This Phase II ESA is subject to the Statement of Limitations provided in Attachment A.

BACKGROUND INFORMATION

Prior to performing the ESA, SECOR reviewed documents provided by Build. The documents included:

- Esprit De Corp., San Francisco, CA. Phase I Hazardous Waste and Petroleum Site Assessments on 6 Esprit De Corp. Properties. ENSR Consulting and Engineering (ENSR). April 1990.
- Esprit De Corp, San Francisco, CA. Phase II Investigation at 900 Minnesota Street in San Francisco, CA. ENSR Consulting and Engineering. July 1990.
- Limited Phase II Investigation for Esprit de Corp, (Esprit Park located on) 700 Minnesota Street, San Francisco, CA. Weiss Associates (Weiss). January 17, 2001.
- Phase I Environmental Site Assessment performed at 800-910 Minnesota Street (and) 801 Indiana Street, San Francisco, CA 94107. Avalon. October 22, 2003.

A summary of findings from the documents provided by Build are enumerated below:

- The April 1990 ENSR report states that the previous occupants of the Property (i.e. a paint and trucking firm) may have utilized hazardous materials. However, no reports or records were available to substantiate this statement. An underground storage tank (UST) installed by the trucking firm within the garden area immediately south of the parking lot had been emptied and filled with gravel. Evidence of proper closure procedures (soil sampling and analytical testing) was not available.
- According to the July 1990 ENSR report, laboratory testing of six (6) soil samples collected

from three (3) borings adjacent to the closed UST indicated only minor amounts (10ppm) of total petroleum hydrocarbons, and trace amounts of selected semi-volatile organics (SVOCs: fluorene, naphthalene, and phenanthrene). Two of the soil borings (SB-1 and SB-2) were located in the parking lot north of the closed UST; SB-3 was located east of the UST (refer to Figure 2 for locations). Soil borings SB-1 and SB-2 were drilled to a depth of 20 feet below ground surface (bgs); SB-3 was drilled to a depth of 5.5 feet bgs where bedrock was encountered.

- The Avalon October 2003 report stated that the Property contains an abandoned 7,500 gallon UST, which was formerly used to store diesel fuel. The UST was abandoned in place in 1993. Approval for this abandonment was granted by the City and County of San Francisco. Subsurface testing was performed by ENSR and no contamination was detected. The parking lot area was formerly used for a lead paint warehouse. Near surface heavy metals may be present in the parking lot area.

The objective of SECOR's Phase II ESA was to collect and analyze one (1) grab water sample from the elevator shaft within the existing building, and up to six (6) soil and groundwater samples from the parking lot area to identify "baseline" conditions.

SCOPE OF INVESTIGATION

During the period of November 11 and 14, 2003 SECOR collected one (1) grab water sample from the elevator shaft and advanced soil borings at six (6) locations within the parking lot area. Collected water and soil samples were submitted for laboratory analysis to achieve the above-stated objective. This Phase II ESA included the following prefield, investigative, and analytical activities:

- One (1) grab water sample was collected from the base of the elevator shaft using a Teflon bailer on November 11, 2003. SECOR submitted the grab water sample under chain-of-custody (COC) to STL San Francisco (STL) located in Pleasanton, California, a State of California-certified laboratory. The water sample was analyzed for total petroleum hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene and total Xylenes (collectively termed BTEX compounds), and Methyl Tertiary Butyl Ether (MTBE) by EPA Method 8015M/8021B; total extractable petroleum hydrocarbons (TEPH) as diesel/motor oil (TPHd/mo) by EPA Method 8015M; SVOC's by EPA Method 8270C; and LUFT heavy metals (cadmium, chromium, lead, nickel and zinc) using EPA Method 6010B.
- Eleven (11) potential soil boring locations were identified and marked within the parking lot to characterize subsurface conditions (Figure 2; SB-4 through SB-14). Borings SB-1, -2, and -3 were previously drilled and sampled as part of the ENSR Phase II investigation in 1990.
- A drilling permit application was submitted to the City and County of San Francisco Department of Health Services on November 10, 2003; the Department approved the application on November 11, 2003.
- Norcal Underground Locating (Norcal) of San Jose, CA was retained by SECOR on November 11, 2003, to clear utilities within the parking lot area. Based on Norcal's survey results, selected boring locations were relocated in order to reduce the potential for encountering subsurface utilities and/or other anomalies.
- SECOR retained Gregg Drilling and Testing (Gregg) of Martinez, CA to advance soil borings in the parking lot area. The soil borings were advanced on November 14, 2003 using an 8-inch hollow stem auger drill rig. Due to time constraints and difficult drilling conditions, proposed soil borings SB-4, SB-7, SB-8, SB-10 and SB-13 were not

advanced.

- Soil borings SB-5 and SB-6 were advanced at the northern perimeter of the parking lot. Soil boring SB-9 was advanced at the approximate center of the parking area. Soil boring SB-11 and SB-12 were advanced north and northwest, respectively, of the former UST. Soil boring SB-14 was advanced alongside the suspected trenchline of the former liquid cooler. Refer to Figure 2 for soil boring locations.
- Soil borings SB-5, SB-9, SB-11, and SB-12 were advanced to a total depth of 18, 15.5, 19, and 20 feet bgs, respectively. Gregg attempted to advance soil boring SB-6 but reached refusal at 3.5 feet bgs. The most difficult drilling conditions were encountered while advancing soil boring SB-14. Gregg encountered bedrock conditions at 14 feet bgs. The total depth of soil boring SB-14 was 15 feet bgs. Refer to soil boring logs in Appendix B for details.
- Soil samples were collected at five-foot intervals. Soil samples submitted to the laboratory were selected based on the highest PID readings and lithology. Three soil samples each were collected from soil borings SB-5, SB-9, SB-11, and SB-12 at depths of five, ten and fifteen feet bgs. Two soil samples were collected from soil boring SB-14 at depths of five and ten feet bgs.
- Groundwater was encountered at 19 feet bgs in soil boring SB-11; however, groundwater was not encountered at soil boring SB-5, SB-6, SB-9, SB-12, or SB-14. Furthermore, due to an insufficient volume of groundwater entering the borehole over several hours, no groundwater sample was available for collection or analysis from SB-11.
- SECOR submitted the collected soil samples under chain-of-custody to STL for analysis. The soil samples from all the borings were analyzed for TPHg by EPA Method 8015M, BTEX and MTBE by EPA Method 8021B, TPHd/mo by EPA Method 8015M; SVOCs by EPA Method 8270C; and LUFT heavy metals using EPA Method 6010B.

Field sampling procedures and the results of this limited Phase II ESA are summarized in the following sections.

SAMPLING PROCEDURES AND METHODS

Prior to beginning field activities a Site-specific Health and Safety Plan (HASP) was prepared for use by SECOR personnel. SECOR marked the proposed boring locations, notified Underground Service Alert (USA) approximately 48 hours in advance of the drilling date, and contracted a private utility locator (Norcal) to clear the proposed boring locations of potential subsurface obstructions.

SECOR contracted Gregg to advance six eight-inch HSA soil borings (SB-5, SB-6, SB-9, SB-11, SB-12, and SB-14) at the locations shown on Figure 2. A truck-mounted HSA drill rig was utilized to collect five-foot interval soil samples for field classification, field-screening for the presence of organic vapors, and identification of water bearing zones. Soil cores were obtained by driving an 18-inch long split-spoon sample barrel attached to the end of the rod to the desired sampling depth. Soil samples were collected in three six-inch brass sleeves fitted inside the sample barrel. Upon reaching the desired depth, the sample barrel was removed from the borehole. The 18-inch long split-spoon sample barrel containing the soil samples was subsequently removed and retained for field classification, field-screening, and potential chemical analysis. Following boring advancement to the desired depth, and the completion of soil and groundwater sampling activities, the borings were back-filled with cement grout to the ground surface, in accordance with City and County of San Francisco Department of Public Health guidelines.

A SECOR field geologist monitored the soil collected from each of the borings for odor, staining, photo-ionization detector (PID) readings, color, grain size, and moisture content. The field observations were recorded on boring logs, and are included as Attachment B. Each soil sample collected for possible chemical analysis was covered on each end with Teflon^{TM} tape, capped with plastic end caps, labeled, and placed in an ice-filled cooler for preservation. At the end of field activities, the cooler was transported to STL, under chain-of-custody by an STL courier.

Quality Assurance/Quality Control Procedures

The following sub-sections describe the quality assurance/quality control (QA/QC) measures that were followed during this investigation.

Decontamination Procedures

To minimize the potential for cross-contamination between sampling locations, all down hole boring equipment and soil sampling equipment was thoroughly cleaned prior to initiating work and between each sampling location. Boring equipment, and soil and groundwater sampling equipment was washed in a dilute Liquinox solution and rinsed with potable water between each sampling location.

Chain of Custody Procedures

A completed COC form accompanied all samples submitted to the analytical laboratory. The COC form documented the handling and shipping procedures as well as identifying and ensuring tractability of the samples collected. The COC form was completed and signed by the sample collector and subsequently signed through all custody transfers. The COC form was checked for accuracy and completeness at the analytical laboratory, then signed and dated by the laboratory custodian accepting the samples.

QA/QC Procedures

Laboratory QC data were evaluated to assess the acceptability of the analytical results. The laboratory QC results are included with the certified analytical results (CARs) in Attachment C.

Laboratory QC consisted of checking adherence to holding times and evaluating method blanks, surrogate recoveries, and laboratory control spike/laboratory control spike duplicates (LCS/LCSD). All analyses were performed within the required holding times.

FINDINGS

Site Conditions and Field Screening Results

During the Phase II ESA, soil borings were advanced to a maximum depth of 3.5 to 20.0 feet bgs. Soils encountered within the first ten feet bgs consisted predominantly of gravel-sand-clay combinations. During the advancement of soil boring SB-14, bedrock (possibly Franciscan) was encountered at 14 feet bgs. There was little variation of color, grain size, or moisture content within the borings. According to the July 1990 ENSR report, the Property "...rests primarily on weathered Franciscan rocks." Lithology encountered in each soil boring is indicated on the boring logs in Attachment B.

Chemical Testing Results

Laboratory analytical results for the grab water and soil samples are summarized in Tables 1 and 2, respectively and CARs are presented in Attachment C. Laboratory analytical results were compared to relevant screening values for the purpose of assessing whether detected concentrations would be expected to warrant further assessment, remediation, and/or special handling or disposal of soil and/or groundwater.

Review of the laboratory analytical results indicates that concentrations of TPHd/mo and metals were detected in the grab water sample, and one or more soil samples detected TPHg, BTEX, TPHd, metals and SVOC's. Reported concentrations in the grab water sample and the soil samples were compared to the following published regulatory screening levels:

- **Preliminary Remediation Goals (PRGs)** – Human health risk-based cleanup criteria established by U.S. EPA Region 9 for industrial soils and drinking water exposure scenarios.
- **Risked-Based Screening Levels (RBSLs)** – Human health and ecological risk-based cleanup criteria established by the California EPA (Cal EPA) Regional Water Quality Control Board for subsurface soils overlying potential drinking water aquifers, and groundwater of a potential drinking water aquifer.
- **Primary Drinking Water Standard Maximum Contaminant Levels (MCLs)**– Drinking water standards established by Cal EPA to protect human health.

Regulatory agencies utilize PRGs, RBSLs and MCLs as screening tools and for establishing conservative cleanup goals. Site-specific risk-based cleanup goals are often higher than PRG, RBSL and MCL values.

A discussion of the laboratory analytical results with respect to relevant screening values follows.

Gasoline

Gasoline was not detected in the grab water sample from the elevator shaft.

Gasoline concentrations in the soil samples were detected in the following samples: SB-11-10, SB-12-10, and SB-14-10. Gasoline concentrations in these samples ranged from 1.100 milligrams per kilogram (mg/kg) to 3.600 mg/kg. The RBSL for gasoline is 100 mg/kg.

BTEX and MTBE

BTEX and MTBE were not detected in the grab water sample from the elevator shaft.

Benzene concentrations were detected in soil samples SB-11-10 and SB-12-10 at 0.570 mg/kg and 0.070 mg/kg, respectively. Toluene was detected in soil samples SB-11-10 and SB-12-10 at 0.890 mg/kg and 0.280 mg/kg, respectively. Ethylbenzene was detected in soil samples SB-11-10 and SB-12-10 at 0.075 mg/kg and 0.029 mg/kg, respectively. Total xylenes were detected in soil samples SB-5-5, SB-11-10, and SB-12-10 ranging from 0.0051 mg/kg to 0.340 mg/kg. However, MTBE was not detected in any of the soil samples. The RBSL's for BTEX are 0.045, 2.6, 2.5, and 1.0 mg/kg, respectively.

Diesel

Diesel was detected in the grab water sample from the elevator shaft at 1.900 milligrams per liter (mg/L). The RBSL for diesel is 0.100 mg/L.

Diesel was detected in the all soil samples submitted for analysis (i.e. SB-5-5, SB-9-9, SB-11-10, SB-12-10, SB-14-10). Diesel concentrations ranged from 1.1 mg/kg to 12 mg/kg. The RBSL for diesel is 100 mg/kg.

Motor Oil

Motor oil was detected in the grab water sample from the elevator shaft at 6.1 mg/L. The RBSL for motor oil is 100 mg/L.

Motor oil was not detected in any of the soil samples selected for analyses.

SVOCs

SVOC's were not detected in the grab water sample from the elevator shaft.

Naphthalene was detected in three soil samples (SB-5-5, SB-11-10, and SB-12-10) ranging from 0.070 mg/kg to 0.26 mg/kg; 2-methylnaphthalene was detected in two soil samples (SB-11-10, and SB-14-10) at 0.44 mg/kg and 0.090 mg/kg, respectively. Fluorene and phenanthrene were detected in soil sample SB-12-10 both at 0.12 mg/kg. SVOC's were not detected in the soil sample from soil boring SB-9-9. The RBSL's for naphthalene, 2-methylnaphtalene, fluorene, and phenanthrene are 4.0, 0.25, 5.1, and 11.0 mg/kg, respectively.

Metals

Total chromium, lead, nickel, and zinc were detected in the grab water sample collected from the elevator shaft. Total chromium was detected at 0.0075 mg/L; lead was detected at 0.007 mg/L; nickel was detected at 0.015 mg/L; and zinc was detected at 0.51 mg/L. However, cadmium was not detected in the grab water sample from the elevator shaft. The RBSL's for chromium, lead, nickel and zinc are 0.050, 0.0032, 0.0082, and 0.023 mg/L, respectively.

Total chromium, lead, nickel and zinc were detected in all of the soil samples. However, cadmium was not detected in any of the soil samples. The maximum concentration of total chromium, lead and nickel was detected in SB-11-10 at 34, 24, and 67 mg/kg, respectively. The maximum concentration of zinc was detected in SB12-10 at 68 mg/kg. The RBSL's for total chromium, lead, nickel and zinc are 12, 1000, 1000, and 5000, respectively.

SUMMARY AND CONCLUSIONS

A summary of Phase II ESA investigative activities and analytical results are as follows:

A grab water sample was collected from the elevator shaft within the building and analyzed for TPHg, BTEX, MTBE, TPHd/mo, SVOC's and LUFT metals.

Six (6) soil borings were advanced within the parking lot area to a maximum depth of 20 feet bgs. Soil samples were collected at various depths within each boring and analyzed for TPHg, BTEX, MTBE, TPHd/mo, SVOC's, and LUFT metals. Groundwater was encountered in only one boring (SB-11) at a depth of 19 feet bgs, but there was insufficient groundwater available for collection or analysis. Bedrock was encountered at the total depth of all the borings.

Analytical results for water and soil are as follows:

Water

- Gasoline was not detected in the water sample from the elevator shaft.
- BTEX was not detected in the water sample from the elevator shaft.
- MTBE was not detected in the water sample from the elevator shaft.
- Diesel was detected in the water sample from the elevator shaft at a concentration of 1.900 mg/L.
- Motor oil was detected in the water sample from the elevator shaft at a concentration of 6.1 mg/L.
- SVOC's were not detected in the water sample from the elevator shaft.
- Total chromium, lead, nickel and zinc were detected in the water sample from the elevator shaft. Total chromium was detected at 0.0075 mg/L; lead was detected at 0.007 mg/L; nickel was detected at 0.015 mg/L; and zinc was detected at 0.51 mg/L. However, cadmium was not detected in the water sample from the elevator shaft.

Soil

- Gasoline concentrations were detected in soil samples from SB11-10 and SB-12-10 at concentrations of 3.600 mg/kg and 1.100 mg/kg, respectively.
- Benzene concentrations were detected in soil samples from SB-11-10 and SB-12-10 at concentrations of 0.570 mg/kg and 0.070 mg/kg, respectively.
- Toluene concentrations were detected in soil samples SB-11-10 and SB-12-10 at concentrations of 0.890 mg/kg and 0.280 mg/kg, respectively.
- Ethylbenzene was detected in soil samples SB-11-10 and SB-12-10 at concentrations of 0.075 mg/kg and 0.029 mg/kg, respectively.
- Total xylene concentrations were detected in soil samples SB-5-5, SB-11-10, and SB-12-10. Total xylene concentrations ranged from 0.0051 mg/kg to 0.340 mg/kg.
- MTBE was not detected in any soil samples.
- Diesel concentrations were detected in all the soil samples SB-5-5, SB-9-9, SB-11-10, SB-12-10, SB-14-10 at concentrations ranging from 1.1 mg/kg to 12 mg/kg.
- Motor oil was not detected in any of the soil samples.
- SVOC's naphthalene (SB 5-5, SB 11-10, SB 12-10), 2-Methylnaphtalene (SB 11-10, SB 14-10), fluorene (SB 11-10), and phenanthrene (SB 11-10) were detected in soil samples at maximum concentrations of 0.26, 0.44, 0.12, and 0.12 mg/kg, respectively.
- Total chromium, lead, nickel, and zinc were detected in all soil samples. However, cadmium was not detected in any soil samples.

Based on review of the laboratory analytical results for the "baseline" water and soil conditions at the Property (i.e. elevator shaft, parking lot area) and compared to the aforementioned regulatory criteria (i.e. RBSL's, PRG's, MCL's) the detectable concentrations do not appear to be a risk to human health or the environment.

If Build conducts activities at the Property that involve soil excavation and/or groundwater extraction, the data generated by this Phase II ESA should be utilized to assist in determining whether special handling and/or disposal requirements are applicable to those operations, and whether additional sampling and analysis are necessary..

Please contact Mr. Jack Hardin at (650) 691-0131 if you have any questions. SECOR appreciates the continued opportunity to provide environmental consulting services to Build Inc.

Sincerely,
SECOR International Incorporated

Jack C. Hardin Principal Geologist	Gay L. Howard, P.E. Senior Engineer

Attachments: Table 1 – Grab Water Analytical Results
Table 2 – Soil Analytical Results

Figure 1 – Site Location Map
Figure 2 – Site Plan

Attachment A – Statement of Limitations
Attachment B – Boring Logs
Attachment C – Certified Analytical Reports

TABLES

Table 1
Grab Water Analytical Results
Build Inc.
900 Minnesota Street
San Francisco, California

Sample ID	Date Sampled	Regulatory Criteria	TPH as Gasoline (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	TPH as Diesel (mg/L)	TPH as Motor Oil (mg/L)	Cadmium (mg/L)	Total Chromium (mg/L)	Lead (mg/L)	Nickel (mg/L)	Zinc (mg/L)	SVOCs ** (mg/L)
		RBSL (1)	**(0.100)**	**(0.001)**	**(0.040)**	**(0.030)**	**(0.013)**	**(0.005)**	**(0.100)**	**(0.100)**	**(0.0011)**	**(0.050)**	**(0.0032)**	**(0.0082)**	**(0.023)**	**NA**
		MCL (2)	**NA**	**[0.001]**	**[0.15]**	**[0.7]**	**[1.750]**	**[0.013]**	**NA**	**NA**	**[0.005]**	**[0.05]**	**[0.015]**	**[0.1]**	**[5.0]**	**NA**
BW-1	11/11/2003		ND	ND	ND	ND	ND	ND	1.9*	6.1	ND	0.0075	0.0066	0.015	0.51	ND

Notes:

* Laboratory Qualifier: "Hydrocarbon reported does not match the pattern of our Diesel standard."

** Only detected SVOC analytes are presented.

mg/L = milligrams per Liter

ND = Not detected above laboratory reporting limits

(0.046) RBSL = Risk Based Screening Level

[0.001] MCL = Primary Maximum Contaminant Level

TPH = Total petroleum hydrocarbons

MTBE = Methyl tert-butyl ether

TPHg analyzed by EPA Method 8015M

TPHd analyzed by EPA Method 8015M

TPHmo analyzed by EPA Method 8015M

BTEX compounds analyzed by EPA Method 8021B

MTBE analyzed by EPA Method 8021B

SVOCs analyzed by EPA Method 8270C

Metals analyzed by EPA Method 6010B

References:

(1) Table F-1. Components for Groundwater Screening Levels (groundwater is a current or potential drinking water resource) Application fo Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater, Vol 2, California Regional Quality Control Board, San Francisco Bay Region, Interim Final - August 2000.

(2) Section 64444 of Title 22 of the California Code of Regulation, Primary Maximum Contaminant Levels for Volatile Organic Chemicals, and Section 64431 of Title 22 of the California Code of Regulation, Primary MCLs for Inorganic Chemicals

Table 2
Soil Analytical Results
Build Inc.
900 Minnesota Street
San Francisco, California

Sample ID	Date Sampled	Regulatory Criteria	TPH as Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TPH as Diesel (mg/kg)	TPH as Motor Oil (mg/kg)	Cadmium (mg/kg)	Total Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	SVOCs ** (mg/kg)			
																Naph-thalene	2-Methyl-naph-thalene	Fluorene	Phen-anthrene
		RBSL (1)	(100)	(0.045)	(2.5)	(2.5)	(1.0)	(0.023)	(100)	(100)	(61)	(12)	(1,000)	(1,000)	(5,000)	(4.8)	(0.25)	(5.1)	(11)
		PRG (2)	NA	[1.5]	[520]	[230]	[210]	[37]	NA	NA	[810]	[450]	[750]	[41,000]	[100,000]	[1,900]	NA	[33,000]	NA
SB 5-5	11/14/2003		ND	ND	ND	ND	0.0051	ND	5.9*	ND	ND	19	7.7	37	59	0.070	ND	ND	ND
SB 9-9	11/14/2003		ND	ND	ND	ND	ND	ND	1.1	ND	ND	24	4.7	34	50	ND	ND	ND	ND
SB 11-10	11/14/2003		3.600	0.57	0.89	0.075	0.340	ND	12	ND	ND	34	24	67	57	0.26	0.44	0.12	0.12
SB 12-10	11/14/2003		1.100	0.070	0.280	0.029	0.120	ND	4.7	ND	ND	20	7.7	36	68	0.14	ND	ND	ND
SB 14-10	11/14/2003		ND	ND	ND	ND	ND	ND	6.9	ND	ND	17	6.9	33	51	ND	0.090	ND	ND

Notes:

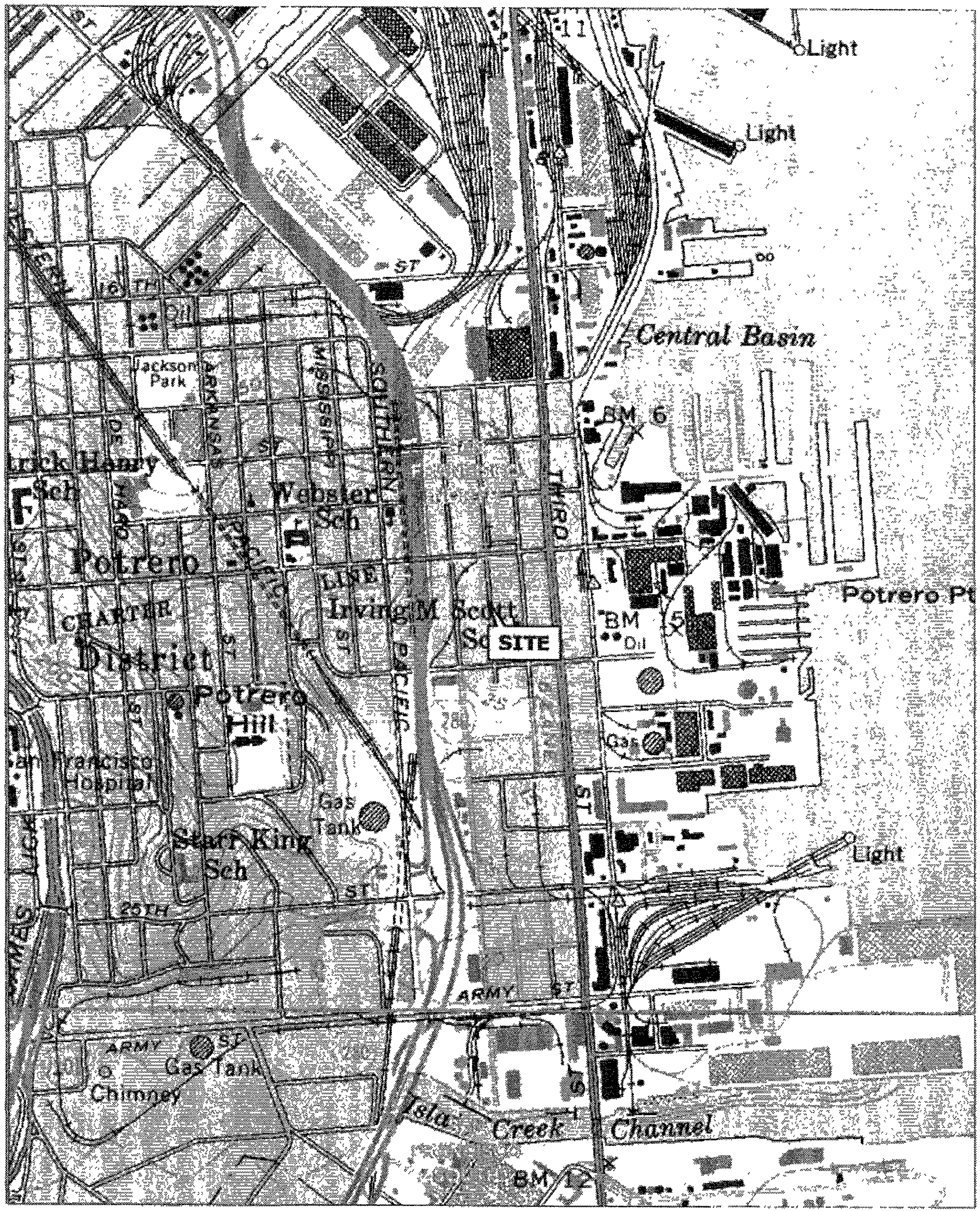
* Laboratory Qualifier: "Hydrocarbon reported does not match the pattern of our Diesel standard."
** Only detected SVOC analytes are presented.
mg/Kg = milligrams per Kilogram
ND = Not detected above laboratory reporting limits
(0.045) RBSL = Risk Based Screening Level
[1.5] PRG = Preliminary Remediation Goals
TPH = Total petroleum hydrocarbons
MTBE = Methyl tert-butyl ether
TPHg analyzed by EPA Method 8015M
TPHd analyzed by EPA Method 8015M
TPHmo analyzed by EPA Method 8015M
BTEX compounds analyzed by EPA Method 8021B
MTBE analyzed by EPA Method 8021B
SVOCs analyzed by EPA Method 8270C
Metals analyzed by EPA Method 6010B

References:

(1) Table C-2. Risk-Based Screening Level Components for Subsurface Soil (>3m bgs), (potentially impacted groundwater is a current or potential drinking water resource) Application fo Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater, Vol 2, California Regional Quality Control Board, San Francisco Bay Region, Interim Final - August 2000.

(2) Memo to PRG Table Mailing List, "Region 9 Preliminary Remediation Goals (PRGs) 1999", Stanford J. Smucker, October 1, 1999.

FIGURES



REFERENCE: U.S.G.S., 1993, SAN FRANCISCO NORTH QUADRANGLE CALIFORNIA – SAN FRANCISCO COUNTY, 7.5' SERIES (TOPOGRAPHIC).

0 500 1000 2000

1" = 1000' (APPROX. SCALE IN FEET)

NORTH

SECOR

2301 LEGHORN STREET
MOUNTAIN VIEW, CALIFORNIA
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PREPARED FOR:

BUILD INCORPORATED
FORMER ESPRIT DE CORP OFFICE
800, 900 & 910 MINNESOTA STREET
SAN FRANCISCO, CALIFORNIA

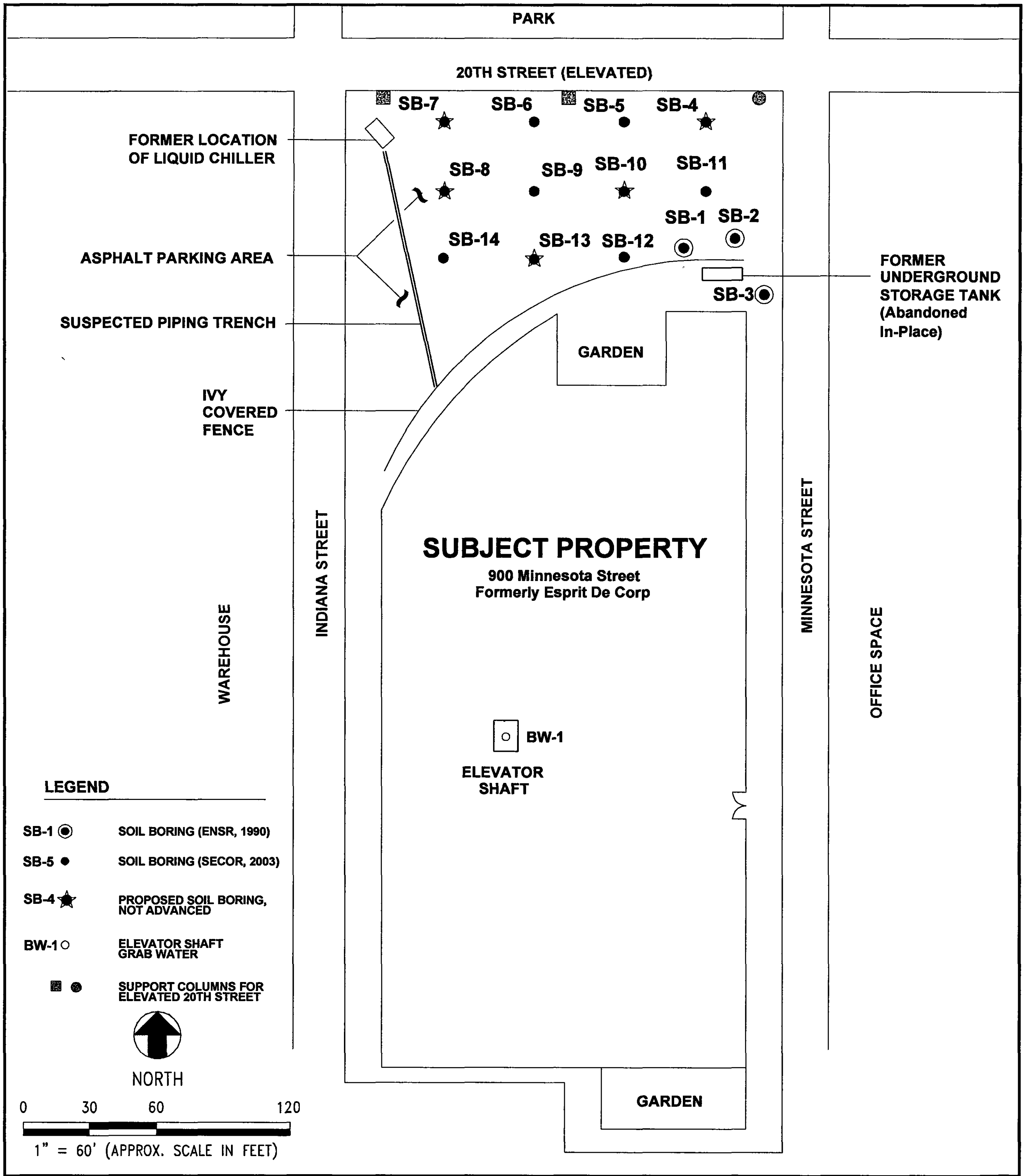
SITE LOCATION MAP

FIGURE: 1

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
06OT.04385.00.0001	DW	AL	JH	12/01/03

I:\build inc\fig\fig.1-slm.dwg DW 12.1.03 4p

FIG.1-SLM



SECOR
2301 LEGHORN STREET
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PREPARED FOR.
BUILD INCORPORATED
FORMER ESPRIT DE CORP OFFICE
900 MINNESOTA STREET
SAN FRANCISCO, CALIFORNIA

SITE PLAN

FIGURE.
2

JOB NUMBER	DRAWN BY	CHECKED BY·	APPROVED BY	DATE
06OT 04385 00 0001	DW	AL	JH	12/05/03

I \build inc\fiq\fiq 2-sp dwq DW 12 5 03 10a

FIG.2-SP

ATTACHMENT A
STATEMENT OF LIMITATIONS

STATEMENT OF LIMITATIONS

The conclusions presented in this report are professional opinions based on data described in this document. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location at the time the work was performed, and are subject to the following inherent limitations:

The data reported and the findings, observations, and conclusions expressed in the document are limited by the scope-of-work performed. The scope of work was specified in the SECOR proposal that is referenced in the report text, and was agreed to by the client. Since Site activities and conditions beyond our control could change at any time after the completion of this report, our findings, observations, and conclusions can only be considered valid as of the date hereof.

Because of the limitations stated above, the findings, observations, and conclusions expressed by SECOR in this document are not, nor should not be, considered an opinion concerning the condition of areas of the Site after the date of this document, or areas of the Site that were not investigated.

No warranty or guarantee, whether express or implied, is made with respect to the data reported as findings, observations, and conclusions that are based solely upon Site conditions in existence at the time of investigation.

This document presents professional opinions and findings of a scientific and technical nature, and shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations, or policies of federal, state, or local government agencies.

Any use of this document constitutes acceptance of the limits of SECOR's liability. SECOR's liability extends only to its client and not to any other parties who may obtain this report, unless a specific reliance agreement between SECOR and the other party is executed.

ATTACHMENT B
BORING LOGS

SECOR
International Incorporated

Logged By:	Dates Drilled:	Drilling Contractor	Project Name:	Method/Equipment:	Boring Number:
AL	11/14/03 11/14/03	Gregg Drilling	900 Minnesota Street San Francisco, CA	HSA/B-53 Split Spoon Sampling	SB-5

See "Legend to Logs" for sampling method, classifications and laboratory testing methods	Boring Diam.(in.):	Surface Elev.(ft.):	Groundwater Depth (ft.):	Total Depth (ft.):	Drive wt.(lbs.):	Drop Dist.(in.):
	8		No water encountered	18.0	140	30

Soil Boring Abandonment	Depth (ft.)	Sample Type	Blows/6"	Lithologic Description	PID Readings (ppm)	Sample ID
Cement/ Grout				Three-inch asphalt. Hand auger to 5 feet below ground surface (bgs). SANDY CLAY WITH GRAVEL (CL), VERY DARK GRAY (5Y 3/1), subangular to subrounded gravel, fine- to medium-grained sand, poorly sorted, very stiff, damp, medium plasticity, no hydrocarbon odor (15, 35, 0, 50)		
	5		7 9 11	SANDY CLAY WITH GRAVEL (CL), BLACK (5Y 2.5/1), subangula to subrounded gravel, fine- to medium-grained sand, poorly sorted, very stiff, medium plasticity, damp, no hydrocarbon odor (15, 35, 0, 50)	1.2	SB-5-5'
	10		8 9 10	Same as 5.5 feet bgs sample.	1.0	SB-5-10'
	15		48 50/3	SANDY CLAY WITH GRAVEL (CL), BLACK (5Y 2.5/1), subangula to subrounded gravel, fine- to medium-grained sand, poorly sorted, hard, medium plasticity, damp, no hydrocarbon odor (15, 35, 0, 50)	0.6	SB-5-15'
			50/2		0.0	
				Total depth of boring at 18 feet bgs. No groundwater encountered.		
	20					

The substrata descriptions above are generalized representations and based upon visual/manual classification of cuttings and/or samples obtained during drilling. Predominant material types shown on the log may contain different materials and the change from one predominant material type to another could be different than indicated. Descriptions on this log apply only at the specific location at the time of drilling and may not be representative of subsurface conditions at other locations or times.

Project No. **06OT.04385.00.0001** Date **November 14, 2003**

GAY LYNN HOWARD
No. C33119
6/30/06

Log of Boring

Approved by

Figure (sheet 1 of 1)

BUII DSB.GPJ
LOG OF BOREHOLE

SECOR
International Incorporated

Logged By: **AL**	Dates Drilled: **11/14/03** **11/14/03**	Drilling Contractor **Gregg Drilling**	Project Name: **900 Minnesota Street** **San Francisco, CA**	Method/Equipment: **HSA/B-53** **Split Spoon Sampling**	Boring Number: **SB-6**

See "Legend to Logs" for sampling method, classifications and laboratory testing methods	Boring Diam.(in.) **8**	Surface Elev.(ft.):	Groundwater Depth (ft.): **No water encountered**	Total Depth (ft.): **3.5**	Drive wt.(lbs.): **140**	Drop Dist.(in.): **30**

Soil Boring Abandonment	Depth. (ft.)	Sample Type	Lithologic Description	PID Readings (ppm)
Cement/ Grout		▨	Three-inch asphalt. SANDY CLAY WITH GRAVEL (CL), VERY DARK GRAY (5Y 3/1), subangular to subrounded gravel, fine- to medium-grained sand, poorly sorted, very stiff, damp, medium plasticity, no hydrocarbon odor (15, 35, 0, 50)	0.0
			Total depth of boring at 3.5 feet below ground surface (bgs) due to refusal. No groundwater encountered. No soil samples taken.	
	5			
	10			
	15			
	20			

The substrata descriptions above are generalized representations and based upon visual/manual classification of cuttings and/or samples obtained during drilling. Predominant material types shown on the log may contain different materials and the change from one predominant material type to another could be different than indicated. Descriptions on this log apply only at the specific location at the time of drilling and may not be representative of subsurface conditions at other locations or times.

Project No. **06OT.04385.00.0001** Date **November 14, 2003**

Log of Boring

Approved by Gay L. Howard

Figure (sheet 1 of 1)

REGISTERED PROFESSIONAL ENGINEER
GAY LYNN HOWARD
No. C33119
EXP 6/30/06
CIVIL
STATE OF CALIFORNIA

BUILDSB.GPJ
LOG OF BOREHOLE

SECOR
International Incorporated

Logged By:	Dates Drilled:	Drilling Contractor	Project Name:	Method/Equipment:	Boring Number:
AL	11/14/03 11/14/03	Gregg Drilling	900 Minnesota Street San Francisco, CA	HSA/B-53 Split Spoon Sampling	SB-9

See "Legend to Logs" for sampling method, classifications and laboratory testing methods	Boring Diam.(in.):	Surface Elev.(ft.):	Groundwater Depth (ft.):	Total Depth (ft.):	Drive wt.(lbs.):	Drop Dist.(in.):
	8		No water encountered	15.5	140	30

Soil Boring Abandonment	Depth (ft.)	Sample Type	Blows/6"	Lithologic Description	PID Readings (ppm)	Sample ID
Cement/ Grout				Three-inch asphalt. Hand auger to 5 feet below ground surface (bgs). SANDY GRAVELLY CLAY (CL), VERY DARK GRAY (5Y 3/1), subangular to subrounded gravel, fine- to medium-grained sand, poorly sorted, very stiff, damp, medium to high plasticity, no hydrocarbon odor (30, 30, 0, 40)		
	5		29 50 5	SANDY GRAVELLY CLAY (CL), VERY DARK GRAY (5Y 3/1), subangular to subrounded gravel, fine- to medium-grained sand, poorly sorted, hard, damp, medium to high plasticity, no hydrocarbon odor (30, 30, 0, 40) Driller reports tight drilling.	0.0	SB-9-5'
			35 45 50		0.2	SB-9-9'
	10			SANDY GRAVELLY CLAY (CL), VERY DARK GRAY (5Y 3/1), subangular to angular gravel, decreasing size of gravel, fine-to medium-grained sand, poorly sorted, hard, damp, low to medium plasticity, no hydrocarbon odor (35, 25, 0, 40)		
	15		34 45 50	SANDY CLAY WITH GRAVEL (CL), VERY DARK GRAY (5Y 3/1), subangular to subrounded gravel, fine-to medium-grained sand, poorly sorted, hard, damp, low to medium plasticity, no hydrocarbon odor (15, 35, 0, 50) Successfully obtained a soil sample. Total depth of boring at 15.5 feet bgs. No groundwater encountered.	0.6 0.0	SB-9-15.5
	20					

The substrata descriptions above are generalized representations and based upon visual/manual classification of cuttings and/or samples obtained during drilling. Predominant material types shown on the log may contain different materials and the change from one predominant material type to another could be different than indicated. Descriptions on this log apply only at the specific location at the time of drilling and may not be representative of subsurface conditions at other locations or times.

Project No **06OT.04385.00.0001** Date **November 14, 2003**

BUILDSB.GPJ
LOG OF BOREHOLE

Gay Lynn Howard
No. C33119
Exp 6/30/06
Civil

Log of Boring

Approved by Gay L. Howard

Figure (sheet 1 of 1)

SECOR
International Incorporated

Logged By:	Dates Drilled:	Drilling Contractor	Project Name:	Method/Equipment:	Boring Number:
AL	**11/14/03** **11/14/03**	**Gregg Drilling**	**900 Minnesota Street** **San Francisco, CA**	**HSA/B-53** **Split Spoon Sampling**	**SB-11**

See "Legend to Logs" for sampling method, classifications and laboratory testing methods	Boring Diam.(in.):	Surface Elev.(ft.):	Groundwater Depth (ft.):	Total Depth (ft.):	Drive wt.(lbs.):	Drop Dist.(in.):
	8		▽ **19 First Water** ▼ **19 Stabilized Water**	**19.0**	**140**	**30**

Soil Boring Abandonment	Depth, (ft.)	Sample Type	Blows/6"	Lithologic Description	PID Readings (ppm)	Sample ID
				Three-inch asphalt. Hand auger to 4 feet below ground surface (bgs).		
				SANDY CLAY WITH GRAVEL (CL), VERY DARK GRAY (5Y 3/1), subangular to subrounded gravel, fine- to medium-grained sand, poorly sorted, very stiff, damp, medium plasticity, no hydrocarbon odor (15, 35, 0, 50)		
Cement/ Grout	5		29 50	SANDY CLAYEY GRAVEL (GC), DARK GRAY (2.5Y 4/1), subangular to subrounded gravel, fine- to medium-grained sand, poorly sorted, hard, damp, no hydrocarbon odor (50, 30, 0, 20)	0.4	SB-11-5'
	10		11 17 26	SANDY CLAYEY GRAVEL (GC), DARK GRAY (2.5Y 4/1), subangular to subrounded gravel, fine- to medium-grained sand, poorly sorted, hard, damp, no hydrocarbon odor (50, 35, 0, 15)	0.7	SB-11-10'
	15		36 50	SANDY GRAVEL WITH CLAY (GW), VERY DARK GRAY (5Y 3/1), angular gravel, coarse-grained sand, poorly sorted, hard, damp, no hydrocarbon odor (60, 30, 0, 10)	0.0	SB-11-15'
▼					0.7	
	20			Total depth of boring at 19 feet bgs. Groundwater encountered. No groundwater sample taken due to insufficient water in borehole. At 19 feet bgs, driller reports hard rock conditions. Waited for at least 20 minutes for water to recover in borehole, depth to water was measured again. Water still at 19 feet bgs. Water measured again at the end of the day and was at 19 feet bgs.		

The substrata descriptions above are generalized representations and based upon visual/manual classification of cuttings and/or samples obtained during drilling. Predominant material types shown on the log may contain different materials and the change from one predominant material type to another could be different than indicated. Descriptions on this log apply only at the specific location at the time of drilling and may not be representative of subsurface conditions at other locations or times.

Project No **06OT.04385.00.0001** Date **November 14, 2003**

BUILDSB.GPJ
LOG OF BOREHOLE

GAY LYNN HOWARD
No. C37119
Exp 6/30/06
CIVIL

Log of Boring

Approved by Gay L. Howard

Figure (sheet 1 of 1)

SECOR
International Incorporated

Logged By:	Dates Drilled:	Drilling Contractor	Project Name:	Method/Equipment:	Boring Number:
AL	11/14/03 11/14/03	Gregg Drilling	900 Minnesota Street San Francisco, CA	HSA/B-53 Split Spoon Sampling	SB-12

See "Legend to Logs" for sampling method, classifications and laboratory testing methods	Boring Diam.(in.):	Surface Elev.(ft.):	Groundwater Depth (ft.):	Total Depth (ft.):	Drive wt.(lbs.):	Drop Dist.(in.):
	8		No water encountered	20.0	140	30

Soil Boring Abandonment	Depth, (ft.)	Sample Type	Blows/6"	Lithologic Description	PID Readings (ppm)	Sample ID
Cement/ Grout	0			Three-inch asphalt. Hand auger to 5 feet below ground surface (bgs). SANDY GRAVELLY CLAY (CL), VERY DARK GRAY (5Y 3/1), subangular to subrounded gravel, fine- to medium-grained sand, hard, damp, medium plasticity, no hydrocarbon odor (25, 35, 0, 40)		
	5		31 27 34	SANDY CLAY WITH GRAVEL (CL), DARK GRAY (5Y 4/1), fine-to coarse-grained, subangular to subrounded gravel, fine-to medium-grained sand, poorly sorted, hard, damp, medium plasticity, no hydrocarbon odor (15, 40, 0, 45)	1.0	SB-12-5'
	10		7 10 13	SANDY CLAY WITH GRAVEL (CL), VERY DARK GRAY (2.5Y 4/1), subangular to subrounded gravel, fine- to medium-grained sand, hard, damp, medium plasticity, no hydrocarbon odor (15, 35, 0, 50)	1.2	SB-12-10'
	15		11 18 31	Same as 8.5' feet bgs sample. Driller reports difficult, tight drilling conditions at 16 feet bgs. No recovery at 18.5 feet bgs. No soil sample taken.	0.7	SB-12-15'
			50/2			
	20			Total depth of boring at 20 feet bgs. No groundwater encountered.	5.2	

The substrata descriptions above are generalized representations and based upon visual/manual classification of cuttings and/or samples obtained during drilling. Predominant material types shown on the log may contain different materials and the change from one predominant material type to another could be different than indicated. Descriptions on this log apply only at the specific location at the time of drilling and may not be representative of subsurface conditions at other locations or times.

Project No. **06OT.04385.00.0001** Date **November 14, 2003**

BUILDSB.GPJ
LOG OF BOREHOLE

GAY LYNN HOWARD
No. C[illegible]19
EXP 6/30/06

Log of Boring

Approved by Gay L. Howard

Figure (sheet 1 of 1)

SECOR
International Incorporated

Logged By: AL	Dates Drilled: 11/14/03 11/14/03	Drilling Contractor **Gregg Drilling**	Project Name: **900 Minnesota Street** **San Francisco, CA**	Method/Equipment: **HSA/B-53** **Split Spoon Sampling**	Boring Number: **SB-14**

See "Legend to Logs" for sampling method, classifications and laboratory testing methods	Boring Diam.(in.): **8**	Surface Elev.(ft.):	Groundwater Depth (ft.): **No water encountered**	Total Depth (ft.): **16.0**	Drive wt.(lbs.): **140**	Drop Dist.(in.): **30**

Soil Boring Abandonment	Depth (ft.)	Sample Type	Blows/6"	Lithologic Description	PID Readings (ppm)	Sample ID
Cement/ Grout				Three-inch asphalt. Hand auger to 5 feet below ground surface (bgs). SANDY GRAVELLY CLAY (CL), VERY DARK GRAY (5Y 3/1), subangular to subrounded gravel, fine- to medium-grained sand, poorly sorted, very stiff, damp, medium to high plasticity, no hydrocarbon odor (30, 30, 0, 40)		
	5		38 50/4	SANDY CLAY WITH GRAVEL (CL), GRAY (2.5Y 5/1), subangular to subrounded gravel, fine- to medium-grained sand, poorly sorted, hard, damp, no hydrocarbon odor (15, 40, 0, 45). Material appears as ground up (powdered) rock, possibly Franciscan Bedrock.	0.3	SB-14-5'
	10		7 19 27	SANDY CLAY WITH GRAVEL (CL), GRAYISH BROWN (10YR 5/2), subangular to subrounded gravel, fine- to medium-grained sand, poorly sorted, hard, damp, high plasticity, no hydrocarbon odor (15, 40, 0, 45) At 14 feet bgs, Driller reports hard, stiff drilling conditions. Note: It took at least 15 minutes to go down 10 inches. Grooves on the drill bit were smoothed out and glowing hot from trying to drill through bedrock.	0.3	SB-14-10'
	15		60/3	BEDROCK, GRAY (2.5Y 5/1), damp, no hydrocarbon odor. Possibly Franciscan Bedrock. At 15 feet bgs, Driller reports harder drilling conditions; observed grinding and screeching noise as augers increased depth; augers occasionally locked in place. Total depth of boring at 16 feet bgs. Drilling was stopped due to hard drilling conditions. No groundwater encountered.	0.7	
	20			Reference: "Ground Shaking in San Francisco" by Jack Boatwright, Linda Seekins, and Manuel G. Bonilla (USGS), 1995, reprinted 1996.		

The substrata descriptions above are generalized representations and based upon visual/manual classification of cuttings and/or samples obtained during drilling. Predominant material types shown on the log may contain different materials and the change from one predominant material type to another could be different than indicated. Descriptions on this log apply only at the specific location at the time of drilling and may not be representative of subsurface conditions at other locations or times.

Project No. **06OT.04385.00.0001** Date **November 14, 2003**

GAY LYNN HOWARD
No. C53119
Exp 6/30/06

Log of Boring

Approved by Gay L. Howard

Figure

(sheet 1 of 1)

ATTACHMENT C
CERTIFIED ANALYTICAL REPORTS

SEVERN
TRENT
STL

Submission#: 2003-11-0368

SECOR-Mountain View

November 14, 2003

2301 Leghorn Street
Mountain View, CA 94043

Attn.: Jack Hardin
Project: 900 Minnesota St., SF

Dear Mr. Hardin,

Attached is our report for your samples received on 11/11/2003 17:05
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 12/26/2003 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.
You can also contact me via email. My email address is: asalimpour@stl-inc.com

Sincerely,

Afsaneh. Salimpour

Afsaneh Salimpour
Project Manager

Severn Trent Laboratories, Inc.
STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566
A part of Severn Trent Plc
Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

Gas/BTEX Compounds by 8015M/8021

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
BW-1	11/11/2003 11:30	Water	1

Gas/BTEX Compounds by 8015M/8021

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF   Received: 11/11/2003 17:05

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**BW-1**	Lab ID:	2003-11-0368 - 1
Sampled:	11/11/2003 11:30	Extracted:	11/12/2003 12:15
Matrix:	Water	QC Batch#:	2003/11/12-01.05

Analysis Flag: fm (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	250	ug/L	5.00	11/12/2003 12:15	.
Benzene	ND	2.5	ug/L	5.00	11/12/2003 12:15	
Toluene	ND	2.5	ug/L	5.00	11/12/2003 12:15	
Ethyl benzene	ND	2.5	ug/L	5.00	11/12/2003 12:15	
Xylene(s)	ND	2.5	ug/L	5.00	11/12/2003 12:15	
MTBE	ND	25	ug/L	5.00	11/12/2003 12:15	
Surrogate(s)						
Trifluorotoluene	105.6	58	%	5.00	11/12/2003 12:15	
4-Bromofluorobenzene-FID	104.8	50	%	5.00	11/12/2003 12:15	

Gas/BTEX Compounds by 8015M/8021

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Method Blank

Water

QC Batch # 2003/11/12-01.05

MB: 2003/11/12-01.05-001

Date Extracted: 11/12/2003 08:26

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	11/12/2003 08:26	
Benzene	ND	0.5	ug/L	11/12/2003 08:26	
Toluene	ND	0.5	ug/L	11/12/2003 08:26	
Ethyl benzene	ND	0.5	ug/L	11/12/2003 08:26	
Xylene(s)	ND	0.5	ug/L	11/12/2003 08:26	
MTBE	ND	5.0	ug/L	11/12/2003 08:26	
Surrogates(s)					
Trifluorotoluene	98.6	58-124	%	11/12/2003 08:26	
4-Bromofluorobenzene-FID	93.6	50-150	%	11/12/2003 08:26	

Gas/BTEX Compounds by 8015M/8021

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF   Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 5030   Test(s): 8021B

Laboratory Control Spike   **Water**   **QC Batch # 2003/11/12-01.05**

LCS 2003/11/12-01.05-004   Extracted: 11/12/2003   Analyzed: 11/12/2003 10:04
LCSD 2003/11/12-01.05-005   Extracted: 11/12/2003   Analyzed: 11/12/2003 10:36

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	97.2	97.4	100.0	97.2	97.4	0.2	77-123	20		
Toluene	119	98.6	100.0	119.0	98.6	18.8	78-122	20		
Ethyl benzene	111	90.9	100.0	111.0	90.9	19.9	70-130	20		
Xylene(s)	345	294	300	115.0	98.0	16.0	75-125	20		
Surrogates(s)										
Trifluorotoluene	541	476	500	108.2	95.2		58-124			

Gas/BTEX Compounds by 8015M/8021

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2003/11/12-01.05

LCS 2003/11/12-01.05-006 Extracted: 11/12/2003 Analyzed: 11/12/2003 11:08
LCSD 2003/11/12-01.05-007 Extracted: 11/12/2003 Analyzed: 11/12/2003 11:40

Compound	Conc.	ug/L	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	453	493	500	90.6	98.6	8.5	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	461	483	500	92.2	96.6		50-150			

Gas/BTEX Compounds by 8015M/8021

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF
Received: 11/11/2003 17:05

Legend and Notes

Analysis Flag

fm

Reporting limit raised due to foaming nature of the sample.

Result Flag

.

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
BW-1	11/11/2003 11:30	Water	1

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF　Received: 11/11/2003 17:05

Prep(s):	3510C/8270C	Test(s):	8270C
Sample ID:	**BW-1**	Lab ID:	2003-11-0368 - 1
Sampled:	11/11/2003 11:30	Extracted:	11/11/2003 19:02
Matrix:	Water	QC Batch#:	2003/11/11-03.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Phenol	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Bis(2-chloroethyl)ether	ND	2.0	ug/L	1.00	11/12/2003 13:44	
2-Chlorophenol	ND	2.0	ug/L	1.00	11/12/2003 13:44	
1,3-Dichlorobenzene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
1,4-Dichlorobenzene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Benzyl alcohol	ND	5.0	ug/L	1.00	11/12/2003 13:44	
1,2-Dichlorobenzene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
2-Methylphenol	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Bis(2-chloroisopropyl) ether	ND	2.0	ug/L	1.00	11/12/2003 13:44	
4-Methylphenol	ND	2.0	ug/L	1.00	11/12/2003 13:44	
N-Nitroso-di-n-propylamine	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Hexachloroethane	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Nitrobenzene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Isophorone	ND	2.0	ug/L	1.00	11/12/2003 13:44	
2-Nitrophenol	ND	2.0	ug/L	1.00	11/12/2003 13:44	
2,4-Dimethylphenol	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Bis(2-chloroethoxy) methane	ND	5.0	ug/L	1.00	11/12/2003 13:44	
2,4-Dichlorophenol	ND	2.0	ug/L	1.00	11/12/2003 13:44	
1,2,4-Trichlorobenzene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Naphthalene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
4-Chloroaniline	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Hexachlorobutadiene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
4-Chloro-3-methylphenol	ND	5.0	ug/L	1.00	11/12/2003 13:44	
2-Methylnaphthalene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Hexachlorocyclopentadiene	ND	5.0	ug/L	1.00	11/12/2003 13:44	
2,4,6-Trichlorophenol	ND	2.0	ug/L	1.00	11/12/2003 13:44	
2,4,5-Trichlorophenol	ND	2.0	ug/L	1.00	11/12/2003 13:44	
2-Chloronaphthalene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
2-Nitroaniline	ND	10	ug/L	1.00	11/12/2003 13:44	
Dimethyl phthalate	ND	5.0	ug/L	1.00	11/12/2003 13:44	
Acenaphthylene	ND	2.0	ug/L	1.00	11/12/2003 13:44	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Prep(s): 3510C/8270C

Test(s): 8270C

Sample ID: **BW-1**

Lab ID: 2003-11-0368 - 1

Sampled: 11/11/2003 11:30

Extracted: 11/11/2003 19:02

Matrix: Water

QC Batch#: 2003/11/11-03.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
3-Nitroaniline	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Acenaphthene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
2,4-Dinitrophenol	ND	10	ug/L	1.00	11/12/2003 13:44	
4-Nitrophenol	ND	10	ug/L	1.00	11/12/2003 13:44	
Dibenzofuran	ND	2.0	ug/L	1.00	11/12/2003 13:44	
2,4-Dinitrotoluene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
2,6-Dinitrotoluene	ND	5.0	ug/L	1.00	11/12/2003 13:44	
Diethyl phthalate	ND	5.0	ug/L	1.00	11/12/2003 13:44	
4-Chlorophenyl phenyl ether	ND	5.0	ug/L	1.00	11/12/2003 13:44	
Fluorene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
4-Nitroaniline	ND	10	ug/L	1.00	11/12/2003 13:44	
2-Methyl-4,6-dinitrophenol	ND	10	ug/L	1.00	11/12/2003 13:44	
N-Nitrosodiphenylamine	ND	2.0	ug/L	1.00	11/12/2003 13:44	
4-Bromophenyl phenyl ether	ND	5.0	ug/L	1.00	11/12/2003 13:44	
Hexachlorobenzene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Pentachlorophenol	ND	10	ug/L	1.00	11/12/2003 13:44	
Phenanthrene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Anthracene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Di-n-butyl phthalate	ND	5.0	ug/L	1.00	11/12/2003 13:44	
Fluoranthene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Pyrene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Butyl benzyl phthalate	ND	5.0	ug/L	1.00	11/12/2003 13:44	
3,3-Dichlorobenzidine	ND	5.0	ug/L	1.00	11/12/2003 13:44	
Benzo(a)anthracene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	1.00	11/12/2003 13:44	
Chrysene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Di-n-octyl phthalate	ND	5.0	ug/L	1.00	11/12/2003 13:44	
Benzo(b)fluoranthene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Benzo(k)fluoranthene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Benzo(a)pyrene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Indeno(1,2,3-c,d)pyrene	ND	2.0	ug/L	1.00	11/12/2003 13:44	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Prep(s): 3510C/8270C

Test(s): 8270C

Sample ID: **BW-1**

Lab ID: 2003-11-0368 - 1

Sampled: 11/11/2003 11:30

Extracted: 11/11/2003 19:02

Matrix: Water

QC Batch#: 2003/11/11-03.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Dibenzo(a,h)anthracene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Benzo(g,h,i)perylene	ND	2.0	ug/L	1.00	11/12/2003 13:44	
Benzoic acid	ND	10	ug/L	1.00	11/12/2003 13:44	
Surrogate(s)						
Nitrobenzene-d5	48.8	35-114	%	1.00	11/12/2003 13:44	
2-Fluorobiphenyl	57.2	43-116	%	1.00	11/12/2003 13:44	
p-Terphenyl-d14	67.8	33-141	%	1.00	11/12/2003 13:44	
2-Fluorophenol	30.2	25-100	%	1.00	11/12/2003 13:44	
Phenol-d6	28.3	10-110	%	1.00	11/12/2003 13:44	
2,4,6-Tribromophenol	63.7	10-123	%	1.00	11/12/2003 13:44	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 3510C/8270C Test(s): 8270C

Method Blank **Water** **QC Batch # 2003/11/11-03.11**

MB: 2003/11/11-03.11-001 Date Extracted: 11/11/2003 19:02

Compound	Conc.	RL	Unit	Analyzed	Flag
Phenol	ND	2.0	ug/L	11/12/2003 12:17	
Bis(2-chloroethyl)ether	ND	2.0	ug/L	11/12/2003 12:17	
2-Chlorophenol	ND	2.0	ug/L	11/12/2003 12:17	
1,3-Dichlorobenzene	ND	2.0	ug/L	11/12/2003 12:17	
1,4-Dichlorobenzene	ND	2.0	ug/L	11/12/2003 12:17	
Benzyl alcohol	ND	5.0	ug/L	11/12/2003 12:17	
1,2-Dichlorobenzene	ND	2.0	ug/L	11/12/2003 12:17	
2-Methylphenol	ND	2.0	ug/L	11/12/2003 12:17	
Bis(2-chloroisopropyl) ether	ND	2.0	ug/L	11/12/2003 12:17	
4-Methylphenol	ND	2.0	ug/L	11/12/2003 12:17	
N-Nitroso-di-n-propylamine	ND	2.0	ug/L	11/12/2003 12:17	
Hexachloroethane	ND	2.0	ug/L	11/12/2003 12:17	
Nitrobenzene	ND	2.0	ug/L	11/12/2003 12:17	
Isophorone	ND	2.0	ug/L	11/12/2003 12:17	
2-Nitrophenol	ND	2.0	ug/L	11/12/2003 12:17	
2,4-Dimethylphenol	ND	2.0	ug/L	11/12/2003 12:17	
Bis(2-chloroethoxy) methane	ND	5.0	ug/L	11/12/2003 12:17	
2,4-Dichlorophenol	ND	2.0	ug/L	11/12/2003 12:17	
1,2,4-Trichlorobenzene	ND	2.0	ug/L	11/12/2003 12:17	
Naphthalene	ND	2.0	ug/L	11/12/2003 12:17	
4-Chloroaniline	ND	2.0	ug/L	11/12/2003 12:17	
Hexachlorobutadiene	ND	2.0	ug/L	11/12/2003 12:17	
4-Chloro-3-methylphenol	ND	5.0	ug/L	11/12/2003 12:17	
2-Methylnaphthalene	ND	2.0	ug/L	11/12/2003 12:17	
Hexachlorocyclopentadiene	ND	5.0	ug/L	11/12/2003 12:17	
2,4,6-Trichlorophenol	ND	2.0	ug/L	11/12/2003 12:17	
2,4,5-Trichlorophenol	ND	2.0	ug/L	11/12/2003 12:17	
2-Chloronaphthalene	ND	2.0	ug/L	11/12/2003 12:17	
2-Nitroaniline	ND	10	ug/L	11/12/2003 12:17	
Dimethyl phthalate	ND	5.0	ug/L	11/12/2003 12:17	
Acenaphthylene	ND	2.0	ug/L	11/12/2003 12:17	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 3510C/8270C

Test(s): 8270C

Method Blank

Water

QC Batch # 2003/11/11-03.11

MB: 2003/11/11-03.11-001

Date Extracted: 11/11/2003 19:02

Compound	Conc.	RL	Unit	Analyzed	Flag
3-Nitroaniline	ND	2.0	ug/L	11/12/2003 12:17	
Acenaphthene	ND	2.0	ug/L	11/12/2003 12:17	
2,4-Dinitrophenol	ND	10	ug/L	11/12/2003 12:17	
4-Nitrophenol	ND	10	ug/L	11/12/2003 12:17	
Dibenzofuran	ND	2.0	ug/L	11/12/2003 12:17	
2,4-Dinitrotoluene	ND	2.0	ug/L	11/12/2003 12:17	
2,6-Dinitrotoluene	ND	5.0	ug/L	11/12/2003 12:17	
Diethyl phthalate	ND	5.0	ug/L	11/12/2003 12:17	
4-Chlorophenyl phenyl ether	ND	5.0	ug/L	11/12/2003 12:17	
Fluorene	ND	2.0	ug/L	11/12/2003 12:17	
4-Nitroaniline	ND	10	ug/L	11/12/2003 12:17	
2-Methyl-4,6-dinitrophenol	ND	10	ug/L	11/12/2003 12:17	
N-Nitrosodiphenylamine	ND	2.0	ug/L	11/12/2003 12:17	
4-Bromophenyl phenyl ether	ND	5.0	ug/L	11/12/2003 12:17	
Hexachlorobenzene	ND	2.0	ug/L	11/12/2003 12:17	
Pentachlorophenol	ND	10	ug/L	11/12/2003 12:17	
Phenanthrene	ND	2.0	ug/L	11/12/2003 12:17	
Anthracene	ND	2.0	ug/L	11/12/2003 12:17	
Di-n-butyl phthalate	ND	5.0	ug/L	11/12/2003 12:17	
Fluoranthene	ND	2.0	ug/L	11/12/2003 12:17	
Pyrene	ND	2.0	ug/L	11/12/2003 12:17	
Butyl benzyl phthalate	ND	5.0	ug/L	11/12/2003 12:17	
3,3-Dichlorobenzidine	ND	5.0	ug/L	11/12/2003 12:17	
Benzo(a)anthracene	ND	2.0	ug/L	11/12/2003 12:17	
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	11/12/2003 12:17	
Chrysene	ND	2.0	ug/L	11/12/2003 12:17	
Di-n-octyl phthalate	ND	5.0	ug/L	11/12/2003 12:17	
Benzo(b)fluoranthene	ND	2.0	ug/L	11/12/2003 12:17	
Benzo(k)fluoranthene	ND	2.0	ug/L	11/12/2003 12:17	
Benzo(a)pyrene	ND	2.0	ug/L	11/12/2003 12:17	
Indeno(1,2,3-c,d)pyrene	ND	2.0	ug/L	11/12/2003 12:17	
Dibenzo(a,h)anthracene	ND	2.0	ug/L	11/12/2003 12:17	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 3510C/8270C

Test(s): 8270C

Method Blank

Water

QC Batch # 2003/11/11-03.11

MB: 2003/11/11-03.11-001

Date Extracted: 11/11/2003 19:02

Compound	Conc.	RL	Unit	Analyzed	Flag
Benzo(g,h,i)perylene	ND	2.0	ug/L	11/12/2003 12:17	
Benzoic acid	ND	10	ug/L	11/12/2003 12:17	
Surrogates(s)					
Nitrobenzene-d5	74.0	35-114	%	11/12/2003 12:17	
2-Fluorobiphenyl	82.2	43-116	%	11/12/2003 12:17	
p-Terphenyl-d14	88.6	33-141	%	11/12/2003 12:17	
2-Fluorophenol	50.1	25-100	%	11/12/2003 12:17	
Phenol-d6	31.8	10-110	%	11/12/2003 12:17	
2,4,6-Tribromophenol	89.8	10-123	%	11/12/2003 12:17	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF   Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 3510C/8270C   Test(s): 8270C

Laboratory Control Spike   **Water**   **QC Batch # 2003/11/11-03.11**

LCS 2003/11/11-03.11-002   Extracted: 11/11/2003   Analyzed: 11/12/2003 12:46
LCSD 2003/11/11-03.11-003   Extracted: 11/11/2003   Analyzed: 11/12/2003 13:15

Compound	Conc.	ug/L	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Phenol	19.5	19.6	60.0	32.5	32.7	0.6	12-89	35		
2-Chlorophenol	44.5	43.2	60.0	74.2	72.0	3.0	23-134	25		
1,4-Dichlorobenzene	18.7	18.5	30.0	62.3	61.7	1.0	36-97	30		
N-Nitroso-di-n-propylamine	19.9	19.4	30.0	66.3	64.7	2.4	10-130	34		
1,2,4-Trichlorobenzene	22.4	20.8	30.0	74.7	69.3	7.5	44-142	35		
4-Chloro-3-methylphenol	47.3	45.1	60.0	78.8	75.2	4.7	22-147	31		
Acenaphthene	22.2	22.8	30.0	74.0	76.0	2.7	56-118	30		
4-Nitrophenol	23.6	22.4	60.0	39.3	37.3	5.2	1-132	35		
2,4-Dinitrotoluene	25.0	25.9	30.0	83.3	86.3	3.5	39-139	35		
Pentachlorophenol	36.5	30.1	60.0	60.8	50.2	19.1	45-125	35		
Pyrene	24.5	23.1	30.0	81.7	77.0	5.9	52-115	35		
Surrogates(s)										
Nitrobenzene-d5	19.8	18.6	25	79.2	74.4		35-114			
2-Fluorobiphenyl	21.5	21.8	25	86.0	87.2		43-116			
p-Terphenyl-d14	23.9	21.5	25	95.6	86.0		33-141			
2-Fluorophenol	26.2	25.6	50	52.4	51.2		25-100			
Phenol-d6	19.0	19.0	50	38.0	38.0		10-110			
2,4,6-Tribromophenol	45.3	48.7	50	90.6	97.4		10-123			

Submission #: 2003-11-0368

Metals

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
BW-1	11/11/2003 11:30	Water	1

Metals

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Prep(s): 3010A
Test(s): 6010B
Sample ID: **BW-1**
Lab ID: 2003-11-0368 - 1
Sampled: 11/11/2003 11:30
Extracted: 11/11/2003 19:46
Matrix: Water
QC Batch#: 2003/11/11-15.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Cadmium	ND	0.0020	mg/L	1.00	11/12/2003 21:32	
Chromium	0.0075	0.0050	mg/L	1.00	11/12/2003 21:32	
Lead	0.0066	0.0050	mg/L	1.00	11/12/2003 21:32	
Nickel	0.015	0.0050	mg/L	1.00	11/12/2003 21:32	
Zinc	0.51	0.010	mg/L	1.00	11/12/2003 21:32	

Metals

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 3010A

Test(s): 6010B

Method Blank

Water

QC Batch # 2003/11/11-15.15

MB: 2003/11/11-15.15-119

Date Extracted: 11/11/2003 19:46

Compound	Conc.	RL	Unit	Analyzed	Flag
Cadmium	ND	0.0020	mg/L	11/12/2003 21:19	
Chromium	ND	0.0050	mg/L	11/12/2003 21:19	
Lead	ND	0.0050	mg/L	11/12/2003 21:19	
Nickel	ND	0.0050	mg/L	11/12/2003 21:19	
Zinc	ND	0.010	mg/L	11/12/2003 21:19	

Metals

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 3010A Test(s): 6010B

Laboratory Control Spike **Water** **QC Batch # 2003/11/11-15.15**

LCS 2003/11/11-15.15-120 Extracted: 11/11/2003 Analyzed: 11/12/2003 21:23
LCSD 2003/11/11-15.15-121 Extracted: 11/11/2003 Analyzed: 11/12/2003 21:27

Compound	Conc. mg/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Cadmium	0.505	0.502	0.500	101.0	100.4	0.6	80-120	20		
Chromium	0.534	0.529	0.500	106.8	105.8	0.9	80-120	20		
Lead	0.498	0.489	0.500	99.6	97.8	1.8	80-120	20		
Nickel	0.516	0.521	0.500	103.2	104.2	1.0	80-120	20		
Zinc	0.530	0.523	0.500	106.0	104.6	1.3	80-120	20		

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
BW-1	11/11/2003 11:30	Water	1

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Prep(s): 3510/8015M
Test(s): 8015M
Sample ID: **BW-1**
Lab ID: 2003-11-0368 - 1
Sampled: 11/11/2003 11:30
Extracted: 11/12/2003 13:33
Matrix: Water
QC Batch#: 2003/11/12-06.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	1900	50	ug/L	1.00	11/13/2003 11:10	ndp
Motor Oil	6100	500	ug/L	1.00	11/13/2003 11:10	
Surrogate(s)						
o-Terphenyl	79.3	60	%	1.00	11/13/2003 11:10	

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Method Blank

Water

QC Batch # 2003/11/12-06.10

MB: 2003/11/12-06.10-001

Date Extracted: 11/12/2003 13:33

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	11/13/2003 15:10	
Motor Oil	ND	500	ug/L	11/13/2003 15:10	
Surrogates(s)					
o-Terphenyl	89.0	60-130	%	11/13/2003 15:10	

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2003/11/12-06.10

LCS	2003/11/12-06.10-002	Extracted: 11/12/2003	Analyzed: 11/13/2003 14:09
LCSD	2003/11/12-06.10-003	Extracted: 11/12/2003	Analyzed: 11/13/2003 14:39

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	793	853	1000	79.3	85.3	7.3	60-130	25		
Surrogates(s)										
o-Terphenyl	17.5	18.9	20.0	87.3	94.4		60-130	0		

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/11/2003 17:05

Legend and Notes

Result Flag

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

SEVERN TRENT STL

STL San Francisco

Sample Receipt Checklist

Submission #:2003- 11 - 0368

Checklist completed by: (initials) NK Date: 11 / 11 /03

Courier name: ☐ STL San Francisco ☐ Client ASC COURIER

Custody seals intact on shipping container/samples	Yes____ No____ Not Present ✓
Chain of custody present?	Yes ✓ No____
Chain of custody signed when relinquished and received?	Yes ✓ No____
Chain of custody agrees with sample labels?	Yes ✓ No____
Samples in proper container/bottle?	Yes ✓ No____
Sample containers intact?	Yes ✓ No____
Sufficient sample volume for indicated test?	Yes ✓ No____
All samples received within holding time?	Yes ✓ No____
Container/Temp Blank temperature in compliance (4^0 C ± 2)?	Temp: 3.8 °C Yes ✓ No____
	Ice Present Yes ✓ No____
Water - VOA vials have zero headspace?	No VOA vials submitted____ Yes ✓ No____

(if bubble is present, refer to approximate bubble size and itemize in comments as **S** (small ~O), **M** (medium ~ O) or L (large ~ O)

Water - pH acceptable upon receipt? ☑ Yes ☐ No

☐ **pH adjusted**– Preservative used. ☐ HNO_3 ☐ HCl ☐ H_2SO_4 ☐ NaOH ☐ ZnOAc –**Lot #(s)** ____________________

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments:

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) ______ Date: _____ / _____ /03

Client contacted: ☐ Yes ☐ No

Summary of discussion:

Corrective Action (per PM/Client):

SEVERN TRENT SERVICES

STL ChromaLab
Chain of Custody

1220 Quarry Lane ● Pleasanton CA 94566-4756
Phone: (925) 484-1919 ● Fax: (925) 484-1096
Email: info@chromalab.com

2003-11-0368

Reference #: 80120

Date 11/11/03 Page 1 of 1

From

Proj Mgr: JACK HARDIN
Company: SECOR
Address: 2301 LEGHORN ST.
MOUNTAIN VIEW, CA
Sampler (Signature): Aurora A. Liongson
Phone: 650-691-0131
Fax/Email: 650-691-9837 aliongson@secor.com

Analysis Request

Sample ID	Date	Time	Matrix	Preservative	TPH (EPA 8015, 8020/8021) ☒ Gas w/ ☒ BTEX ☒ MTBE	Purgeable Aromatics BTEX (EPA 8020/8021)	TEPH (EPA 8015M) ☐ Silica Gel ☒ Diesel ☐ Motor Oil ☐ Other	Fuel Oxygenates (EPA 8260) ☐ [illegible] ☐ Full Oxygenate List ☐ MTBE ☐ BTEX	Purgeable Halocarbons (HVOCs) (EPA 8010/8021)	Volatile Organics GC/MS (VOCs) (EPA 8260A/8260B)	Semivolatiles GC/MS (EPA 8270)	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	☐ Pesticides (EPA 8081) ☐ PCBs (EPA 8082)	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☒ LUFT ☐ RCRA ☒ Other: See Note	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H₂O)	☐ Spec Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions ☐ Cl ☐ SO₄ ☐ NO₃ ☐ F ☐ Br ☐ NO₂ ☐ PO₄					Number of Containers
BW-1	11/11/03	1130	W		X		X				X	~~[illegible]~~ anl				X									

RUSH

Project Info.	**Sample Receipt**
Project Name: 900 MINNESOTA ST, SF	# of Containers: 8
Project#	Head Space:
PO#	Temp: 3.0
Credit Card#	Conforms to record:

TAT: Std 5 Day 72h 48h [✓ 24h]

Other

Report: ☐ Routine ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

Special Instructions / Comments:

① 24-HR TAT

② Metals: cadmium, chromium, lead, nickel, zinc

1) Relinquished by:
Signature: Aurora A. Liongson Time: 1400
Printed Name: AURORA A. LIONGSON Date: 11/11/03
Company: SECOR INTL INC.

2) Relinquished by:
Signature: Steve Time: 17:05
Printed Name: Date: 11/11/03
Company: STC

3) Relinquished by:
Signature: Time:
Printed Name: Date:
Company:

1) Received by:
Signature: Steve Time: 14:00
Printed Name: Date: 11/11/03
Company: STC

2) Received by:
Signature: Time:
Printed Name: Date:
Company:

3) Received by:
Signature: Time: 1705
Printed Name: M. VILLANUEVA Date: 11/11/03
Company: STL SF

Rev 05/02

SEVERN TRENT STL

Submission#: 2003-11-0519

SECOR-Mountain View
2301 Leghorn Street
Mountain View, CA 94043

November 18, 2003

Attn.: Jack Hardin
Project: 900 Minnesota St., SF

Dear Mr. Hardin,

Attached is our report for your samples received on 11/14/2003 19:50
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 12/29/2003 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.
You can also contact me via email. My email address is: asalimpour@stl-inc.com

Sincerely,

Afsaneh. Salimpour

Afsaneh Salimpour
Project Manager

Severn Trent Laboratories, Inc.
STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566
Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
SB-5-5	11/14/2003 15:15	Soil	1
SB-9-9	11/14/2003 12:45	Soil	2
SB-11-10	11/14/2003 09:15	Soil	3
SB-12-10	11/14/2003 16:35	Soil	4
SB-14-10	11/14/2003 10:55	Soil	5

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3550/8015M

Test(s): 8015M

Sample ID: **SB-5-5**

Lab ID: 2003-11-0519 - 1

Sampled: 11/14/2003 15:15

Extracted: 11/15/2003 07:32

Matrix: Soil

QC Batch#: 2003/11/15-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	5.9	1.0	mg/Kg	1.00	11/15/2003 11:07	ndp
Motor Oil	ND	50	mg/Kg	1.00	11/15/2003 11:07	
Surrogate(s)						
o-Terphenyl	101.6	60	%	1.00	11/15/2003 11:07	

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF
Received: 11/14/2003 19:50

Prep(s): 3550/8015M
Test(s): 8015M
Sample ID: **SB-9-9**
Lab ID: 2003-11-0519 - 2
Sampled: 11/14/2003 12:45
Extracted: 11/15/2003 07:32
Matrix: Soil
QC Batch#: 2003/11/15-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	1.1	1.0	mg/Kg	1.00	11/15/2003 11:32	ndp
Motor Oil	ND	50	mg/Kg	1.00	11/15/2003 11:32	
Surrogate(s)						
o-Terphenyl	91.3	60	%	1.00	11/15/2003 11:32	

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s):	3550/8015M	Test(s):	8015M
Sample ID:	**SB-11-10**	Lab ID:	2003-11-0519 - 3
Sampled:	11/14/2003 09:15	Extracted:	11/15/2003 07:32
Matrix:	Soil	QC Batch#:	2003/11/15-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	12	1.0	mg/Kg	1.00	11/15/2003 11:57	ndp
Motor Oil	ND	50	mg/Kg	1.00	11/15/2003 11:57	
Surrogate(s)						
o-Terphenyl	95.1	60	%	1.00	11/15/2003 11:57	

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3550/8015M
Test(s): 8015M
Sample ID: **SB-12-10**
Lab ID: 2003-11-0519 - 4
Sampled: 11/14/2003 16:35
Extracted: 11/15/2003 07:32
Matrix: Soil
QC Batch#: 2003/11/15-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	4.7	1.0	mg/Kg	1.00	11/15/2003 12:23	ndp
Motor Oil	ND	50	mg/Kg	1.00	11/15/2003 12:23	
Surrogate(s)						
o-Terphenyl	89.6	60	%	1.00	11/15/2003 12:23	

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3550/8015M

Test(s): 8015M

Sample ID: **SB-14-10**

Lab ID: 2003-11-0519 - 5

Sampled: 11/14/2003 10:55

Extracted: 11/15/2003 07:32

Matrix: Soil

QC Batch#: 2003/11/15-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	6.9	1.0	mg/Kg	1.00	11/15/2003 12:48	ndp
Motor Oil	ND	50	mg/Kg	1.00	11/15/2003 12:48	
Surrogate(s)						
o-Terphenyl	91.7	60	%	1.00	11/15/2003 12:48	

Total Extractable Petroleum Hydrocarbons (TEPH)

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 3550/8015M

Test(s): 8015M

Method Blank

Soil

QC Batch # 2003/11/15-01.10

MB: 2003/11/15-01.10-003

Date Extracted: 11/15/2003 07:32

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	1	mg/Kg	11/15/2003 16:15	
Motor Oil	ND	50	mg/Kg	11/15/2003 16:15	
Surrogates(s)					
o-Terphenyl	97.6	60-130	%	11/15/2003 16:15	

Total Extractable Petroleum Hydrocarbons (TEPH)

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 3550/8015M

Test(s): 8015M

Laboratory Control Spike

Soil

QC Batch # 2003/11/15-01.10

LCS 2003/11/15-01.10-001 Extracted: 11/15/2003 Analyzed: 11/15/2003 15:14

LCSD 2003/11/15-01.10-002 Extracted: 11/15/2003 Analyzed: 11/15/2003 15:44

Compound	Conc.	mg/Kg	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	37.1	36.0	41.6	89.2	86.7	2.8	60-130	25		
Surrogates(s)										
o-Terphenyl	19.1	19.2	20.0	95.7	96.2		60-130	0		

Total Extractable Petroleum Hydrocarbons (TEPH)

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Legend and Notes

Result Flag

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

Metals

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Received: 11/14/2003 19:50

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
SB-5-5	11/14/2003 15:15	Soil	1
SB-9-9	11/14/2003 12:45	Soil	2
SB-11-10	11/14/2003 09:15	Soil	3
SB-12-10	11/14/2003 16:35	Soil	4
SB-14-10	11/14/2003 10:55	Soil	5

Metals

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s):	3050B	Test(s):	6010B
Sample ID:	**SB-5-5**	Lab ID:	2003-11-0519 - 1
Sampled:	11/14/2003 15:15	Extracted:	11/15/2003 08:07
Matrix:	Soil	QC Batch#:	2003/11/15-01.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Cadmium	ND	0.50	mg/Kg	1.00	11/16/2003 15:37	
Chromium	19	1.0	mg/Kg	1.00	11/16/2003 15:37	
Lead	7.7	1.0	mg/Kg	1.00	11/16/2003 15:37	
Nickel	37	1.0	mg/Kg	1.00	11/16/2003 15:37	
Zinc	59	1.0	mg/Kg	1.00	11/16/2003 15:37	

Metals

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s):	3050B	Test(s):	6010B
Sample ID:	**SB-9-9**	Lab ID:	2003-11-0519 - 2
Sampled:	11/14/2003 12:45	Extracted:	11/15/2003 08:07
Matrix:	Soil	QC Batch#:	2003/11/15-01.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Cadmium	ND	0.50	mg/Kg	1.00	11/16/2003 16:10	
Chromium	24	1.0	mg/Kg	1.00	11/16/2003 16:10	
Lead	4.7	1.0	mg/Kg	1.00	11/16/2003 16:10	
Nickel	34	1.0	mg/Kg	1.00	11/16/2003 16:10	
Zinc	50	1.0	mg/Kg	1.00	11/16/2003 16:10	

Metals

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3050B

Test(s): 6010B

Sample ID: **SB-11-10**

Lab ID: 2003-11-0519 - 3

Sampled: 11/14/2003 09:15

Extracted: 11/15/2003 08:07

Matrix: Soil

QC Batch#: 2003/11/15-01.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Cadmium	ND	0.50	mg/Kg	1.00	11/16/2003 16:14	
Chromium	34	1.0	mg/Kg	1.00	11/16/2003 16:14	
Lead	24	1.0	mg/Kg	1.00	11/16/2003 16:14	
Nickel	67	1.0	mg/Kg	1.00	11/16/2003 16:14	
Zinc	57	1.0	mg/Kg	1.00	11/16/2003 16:14	

Metals

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3050B
Test(s): 6010B
Sample ID: **SB-12-10**
Lab ID: 2003-11-0519 - 4
Sampled: 11/14/2003 16:35
Extracted: 11/15/2003 08:07
Matrix: Soil
QC Batch#: 2003/11/15-01.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Cadmium	ND	0.50	mg/Kg	1.00	11/16/2003 16:18	
Chromium	20	1.0	mg/Kg	1.00	11/16/2003 16:18	
Lead	7.7	1.0	mg/Kg	1.00	11/16/2003 16:18	
Nickel	36	1.0	mg/Kg	1.00	11/16/2003 16:18	
Zinc	68	1.0	mg/Kg	1.00	11/16/2003 16:18	

Metals

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s):	3050B	Test(s):	6010B
Sample ID:	**SB-14-10**	Lab ID:	2003-11-0519 - 5
Sampled:	11/14/2003 10:55	Extracted:	11/15/2003 08:07
Matrix:	Soil	QC Batch#:	2003/11/15-01.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Cadmium	ND	0.50	mg/Kg	1.00	11/16/2003 16:22	
Chromium	17	1.0	mg/Kg	1.00	11/16/2003 16:22	
Lead	6.9	1.0	mg/Kg	1.00	11/16/2003 16:22	
Nickel	33	1.0	mg/Kg	1.00	11/16/2003 16:22	
Zinc	51	1.0	mg/Kg	1.00	11/16/2003 16:22	

Metals

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 3050B

Test(s): 6010B

Method Blank

Soil

QC Batch # 2003/11/15-01.15

MB: 2003/11/15-01.15-011

Date Extracted: 11/15/2003 08:07

Compound	Conc.	RL	Unit	Analyzed	Flag
Cadmium	ND	0.50	mg/Kg	11/17/2003 08:45	
Chromium	ND	1.0	mg/Kg	11/17/2003 08:45	
Lead	ND	1.0	mg/Kg	11/17/2003 08:45	
Nickel	ND	1.0	mg/Kg	11/17/2003 08:45	
Zinc	ND	1.0	mg/Kg	11/17/2003 08:45	

Metals

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Project: 900 Minnesota St., SF   Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 3050B   Test(s): 6010B

Laboratory Control Spike   **Soil**   **QC Batch # 2003/11/15-01.15**

LCS	2003/11/15-01.15-012	Extracted: 11/15/2003	Analyzed: 11/17/2003 08:49
LCSD	2003/11/15-01.15-013	Extracted: 11/15/2003	Analyzed: 11/17/2003 08:55

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Cadmium	99.5	102	100.0	99.5	102.0	2.5	80-120	20		
Chromium	102	105	100.0	102.0	105.0	2.9	80-120	20		
Lead	99.6	102	100.0	99.6	102.0	2.4	80-120	20		
Nickel	102	106	100.0	102.0	106.0	3.8	80-120	20		
Zinc	97.2	100	100.0	97.2	100.0	2.8	80-120	20		

Semi-volatile analysis by GC/MS - EPA8270C

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
SB-5-5	11/14/2003 15:15	Soil	1
SB-9-9	11/14/2003 12:45	Soil	2
SB-11-10	11/14/2003 09:15	Soil	3
SB-12-10	11/14/2003 16:35	Soil	4
SB-14-10	11/14/2003 10:55	Soil	5

Semi-volatile analysis by GC/MS - EPA8270C

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Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF Received: 11/14/2003 19:50

Prep(s):	3550B/8270C	Test(s):	8270C
Sample ID:	**SB-5-5**	Lab ID:	2003-11-0519 - 1
Sampled:	11/14/2003 15:15	Extracted:	11/15/2003 07:47
Matrix:	Soil	QC Batch#:	2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Phenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Bis(2-chloroethyl)ether	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
2-Chlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
1,3-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
1,4-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Benzyl alcohol	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
1,2-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
2-Methylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Bis(2-chloroisopropyl) ether	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
4-Methylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
N-Nitroso-di-n-propylamine	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Hexachloroethane	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Nitrobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Isophorone	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
2-Nitrophenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
2,4-Dimethylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Bis(2-chloroethoxy) methane	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
2,4-Dichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
1,2,4-Trichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Naphthalene	0.070	0.067	mg/Kg	1.00	11/17/2003 12:30	
4-Chloroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 12:30	
Hexachlorobutadiene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
4-Chloro-3-methylphenol	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
2-Methylnaphthalene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Hexachlorocyclopentadiene	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
2,4,6-Trichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
2,4,5-Trichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
2-Chloronaphthalene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
2-Nitroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 12:30	
Dimethyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
Acenaphthylene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	

Semi-volatile analysis by GC/MS - EPA8270C

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3550B/8270C

Test(s): 8270C

Sample ID: **SB-5-5**

Lab ID: 2003-11-0519 - 1

Sampled: 11/14/2003 15:15

Extracted: 11/15/2003 07:47

Matrix: Soil

QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
3-Nitroaniline	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Acenaphthene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
2,4-Dinitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 12:30	
4-Nitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 12:30	
Dibenzofuran	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
2,4-Dinitrotoluene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
2,6-Dinitrotoluene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Diethyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
4-Chlorophenyl phenyl ether	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
Fluorene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
4-Nitroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 12:30	
2-Methyl-4,6-dinitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 12:30	
N-Nitrosodiphenylamine	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
4-Bromophenyl phenyl ether	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
Hexachlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Pentachlorophenol	ND	0.33	mg/Kg	1.00	11/17/2003 12:30	
Phenanthrene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Di-n-butyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
Fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Butyl benzyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
3,3-Dichlorobenzidine	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
Benzo(a)anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
bis(2-Ethylhexyl) phthalate	ND	0.33	mg/Kg	1.00	11/17/2003 12:30	
Chrysene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Di-n-octyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 12:30	
Benzo(b)fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Benzo(k)fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Benzo(a)pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Indeno(1,2,3-c,d)pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	

Semi-volatile analysis by GC/MS - EPA8270C

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3550B/8270C

Test(s): 8270C

Sample ID: **SB-5-5**

Lab ID: 2003-11-0519 - 1

Sampled: 11/14/2003 15:15

Extracted: 11/15/2003 07:47

Matrix: Soil

QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Dibenzo(a,h)anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Benzo(g,h,i)perylene	ND	0.067	mg/Kg	1.00	11/17/2003 12:30	
Benzoic acid	ND	0.33	mg/Kg	1.00	11/17/2003 12:30	
Surrogate(s)						
Nitrobenzene-d5	93.8	23	%	1.00	11/17/2003 12:30	
2-Fluorobiphenyl	112.1	30	%	1.00	11/17/2003 12:30	
p-Terphenyl-d14	90.4	18	%	1.00	11/17/2003 12:30	
2-Fluorophenol	88.2	25	%	1.00	11/17/2003 12:30	
Phenol-d6	103.3	24	%	1.00	11/17/2003 12:30	
2,4,6-Tribromophenol	114.7	19	%	1.00	11/17/2003 12:30	

Semi-volatile analysis by GC/MS - EPA8270C

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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s):	3550B/8270C	Test(s):	8270C
Sample ID:	**SB-9-9**	Lab ID:	2003-11-0519 - 2
Sampled:	11/14/2003 12:45	Extracted:	11/15/2003 07:47
Matrix:	Soil	QC Batch#:	2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Phenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Bis(2-chloroethyl)ether	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
2-Chlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
1,3-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
1,4-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Benzyl alcohol	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
1,2-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
2-Methylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Bis(2-chloroisopropyl) ether	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
4-Methylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
N-Nitroso-di-n-propylamine	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Hexachloroethane	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Nitrobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Isophorone	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
2-Nitrophenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
2,4-Dimethylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Bis(2-chloroethoxy) methane	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
2,4-Dichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
1,2,4-Trichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Naphthalene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
4-Chloroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 12:58	
Hexachlorobutadiene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
4-Chloro-3-methylphenol	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
2-Methylnaphthalene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Hexachlorocyclopentadiene	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
2,4,6-Trichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
2,4,5-Trichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
2-Chloronaphthalene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
2-Nitroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 12:58	
Dimethyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
Acenaphthylene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	

Semi-volatile analysis by GC/MS - EPA8270C

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Project: 900 Minnesota St., SF   Received: 11/14/2003 19:50

Prep(s): 3550B/8270C   Test(s): 8270C
Sample ID: **SB-9-9**   Lab ID: 2003-11-0519 - 2
Sampled: 11/14/2003 12:45   Extracted: 11/15/2003 07:47
Matrix: Soil   QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
3-Nitroaniline	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Acenaphthene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
2,4-Dinitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 12:58	
4-Nitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 12:58	
Dibenzofuran	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
2,4-Dinitrotoluene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
2,6-Dinitrotoluene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Diethyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
4-Chlorophenyl phenyl ether	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
Fluorene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
4-Nitroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 12:58	
2-Methyl-4,6-dinitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 12:58	
N-Nitrosodiphenylamine	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
4-Bromophenyl phenyl ether	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
Hexachlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Pentachlorophenol	ND	0.33	mg/Kg	1.00	11/17/2003 12:58	
Phenanthrene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Di-n-butyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
Fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Butyl benzyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
3,3-Dichlorobenzidine	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
Benzo(a)anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
bis(2-Ethylhexyl) phthalate	ND	0.33	mg/Kg	1.00	11/17/2003 12:58	
Chrysene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Di-n-octyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 12:58	
Benzo(b)fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Benzo(k)fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Benzo(a)pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Indeno(1,2,3-c,d)pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF	Received: 11/14/2003 19:50

Prep(s):	3550B/8270C	Test(s):	8270C
Sample ID:	**SB-9-9**	Lab ID:	2003-11-0519 - 2
Sampled:	11/14/2003 12:45	Extracted:	11/15/2003 07:47
Matrix:	Soil	QC Batch#:	2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Dibenzo(a,h)anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Benzo(g,h,i)perylene	ND	0.067	mg/Kg	1.00	11/17/2003 12:58	
Benzoic acid	ND	0.33	mg/Kg	1.00	11/17/2003 12:58	
Surrogate(s)						
Nitrobenzene-d5	91.5	23	%	1.00	11/17/2003 12:58	
2-Fluorobiphenyl	105.9	30	%	1.00	11/17/2003 12:58	
p-Terphenyl-d14	86.1	18	%	1.00	11/17/2003 12:58	
2-Fluorophenol	85.0	25	%	1.00	11/17/2003 12:58	
Phenol-d6	95.5	24	%	1.00	11/17/2003 12:58	
2,4,6-Tribromophenol	94.7	19	%	1.00	11/17/2003 12:58	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
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Project: 900 Minnesota St., SF
Received: 11/14/2003 19:50

Prep(s): 3550B/8270C
Test(s): 8270C
Sample ID: **SB-11-10**
Lab ID: 2003-11-0519 - 3
Sampled: 11/14/2003 09:15
Extracted: 11/15/2003 07:47
Matrix: Soil
QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Phenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Bis(2-chloroethyl)ether	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
2-Chlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
1,3-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
1,4-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Benzyl alcohol	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
1,2-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
2-Methylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Bis(2-chloroisopropyl) ether	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
4-Methylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
N-Nitroso-di-n-propylamine	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Hexachloroethane	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Nitrobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Isophorone	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
2-Nitrophenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
2,4-Dimethylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Bis(2-chloroethoxy) methane	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
2,4-Dichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
1,2,4-Trichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Naphthalene	0.26	0.067	mg/Kg	1.00	11/17/2003 13:27	
4-Chloroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 13:27	
Hexachlorobutadiene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
4-Chloro-3-methylphenol	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
2-Methylnaphthalene	0.44	0.067	mg/Kg	1.00	11/17/2003 13:27	
Hexachlorocyclopentadiene	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
2,4,6-Trichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
2,4,5-Trichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
2-Chloronaphthalene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
2-Nitroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 13:27	
Dimethyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
Acenaphthylene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
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2301 Leghorn Street
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Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF   Received: 11/14/2003 19:50

Prep(s):	3550B/8270C	Test(s):	8270C
Sample ID:	**SB-11-10**	Lab ID:	2003-11-0519 - 3
Sampled:	11/14/2003 09:15	Extracted:	11/15/2003 07:47
Matrix:	Soil	QC Batch#:	2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
3-Nitroaniline	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Acenaphthene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
2,4-Dinitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 13:27	
4-Nitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 13:27	
Dibenzofuran	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
2,4-Dinitrotoluene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
2,6-Dinitrotoluene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Diethyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
4-Chlorophenyl phenyl ether	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
Fluorene	0.12	0.067	mg/Kg	1.00	11/17/2003 13:27	
4-Nitroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 13:27	
2-Methyl-4,6-dinitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 13:27	
N-Nitrosodiphenylamine	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
4-Bromophenyl phenyl ether	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
Hexachlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Pentachlorophenol	ND	0.33	mg/Kg	1.00	11/17/2003 13:27	
Phenanthrene	0.12	0.067	mg/Kg	1.00	11/17/2003 13:27	
Anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Di-n-butyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
Fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Butyl benzyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
3,3-Dichlorobenzidine	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
Benzo(a)anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
bis(2-Ethylhexyl) phthalate	ND	0.33	mg/Kg	1.00	11/17/2003 13:27	
Chrysene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Di-n-octyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 13:27	
Benzo(b)fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Benzo(k)fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Benzo(a)pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Indeno(1,2,3-c,d)pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
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2301 Leghorn Street
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Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3550B/8270C
Test(s): 8270C
Sample ID: **SB-11-10**
Lab ID: 2003-11-0519 - 3
Sampled: 11/14/2003 09:15
Extracted: 11/15/2003 07:47
Matrix: Soil
QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Dibenzo(a,h)anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Benzo(g,h,i)perylene	ND	0.067	mg/Kg	1.00	11/17/2003 13:27	
Benzoic acid	ND	0.33	mg/Kg	1.00	11/17/2003 13:27	
Surrogate(s)						
Nitrobenzene-d5	92.5	23	%	1.00	11/17/2003 13:27	
2-Fluorobiphenyl	108.0	30	%	1.00	11/17/2003 13:27	
p-Terphenyl-d14	92.3	18	%	1.00	11/17/2003 13:27	
2-Fluorophenol	93.0	25	%	1.00	11/17/2003 13:27	
Phenol-d6	108.1	24	%	1.00	11/17/2003 13:27	
2,4,6-Tribromophenol	91.4	19	%	1.00	11/17/2003 13:27	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
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Project: 900 Minnesota St., SF	Received: 11/14/2003 19:50

Prep(s): 3550B/8270C	Test(s): 8270C
Sample ID: **SB-12-10**	Lab ID: 2003-11-0519 - 4
Sampled: 11/14/2003 16:35	Extracted: 11/15/2003 07:47
Matrix: Soil	QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Phenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Bis(2-chloroethyl)ether	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
2-Chlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
1,3-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
1,4-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Benzyl alcohol	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
1,2-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
2-Methylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Bis(2-chloroisopropyl) ether	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
4-Methylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
N-Nitroso-di-n-propylamine	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Hexachloroethane	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Nitrobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Isophorone	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
2-Nitrophenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
2,4-Dimethylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Bis(2-chloroethoxy) methane	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
2,4-Dichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
1,2,4-Trichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Naphthalene	0.14	0.067	mg/Kg	1.00	11/17/2003 13:56	
4-Chloroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 13:56	
Hexachlorobutadiene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
4-Chloro-3-methylphenol	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
2-Methylnaphthalene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Hexachlorocyclopentadiene	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
2,4,6-Trichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
2,4,5-Trichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
2-Chloronaphthalene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
2-Nitroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 13:56	
Dimethyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
Acenaphthylene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
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2301 Leghorn Street
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Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF   Received: 11/14/2003 19:50

Prep(s): 3550B/8270C   Test(s): 8270C
Sample ID: **SB-12-10**   Lab ID: 2003-11-0519 - 4
Sampled: 11/14/2003 16:35   Extracted: 11/15/2003 07:47
Matrix: Soil   QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
3-Nitroaniline	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Acenaphthene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
2,4-Dinitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 13:56	
4-Nitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 13:56	
Dibenzofuran	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
2,4-Dinitrotoluene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
2,6-Dinitrotoluene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Diethyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
4-Chlorophenyl phenyl ether	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
Fluorene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
4-Nitroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 13:56	
2-Methyl-4,6-dinitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 13:56	
N-Nitrosodiphenylamine	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
4-Bromophenyl phenyl ether	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
Hexachlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Pentachlorophenol	ND	0.33	mg/Kg	1.00	11/17/2003 13:56	
Phenanthrene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Di-n-butyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
Fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Butyl benzyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
3,3-Dichlorobenzidine	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
Benzo(a)anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
bis(2-Ethylhexyl) phthalate	ND	0.33	mg/Kg	1.00	11/17/2003 13:56	
Chrysene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Di-n-octyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 13:56	
Benzo(b)fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Benzo(k)fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Benzo(a)pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Indeno(1,2,3-c,d)pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
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2301 Leghorn Street
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Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF   Received: 11/14/2003 19:50

Prep(s): 3550B/8270C   Test(s): 8270C
Sample ID: **SB-12-10**   Lab ID: 2003-11-0519 - 4
Sampled: 11/14/2003 16:35   Extracted: 11/15/2003 07:47
Matrix: Soil   QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Dibenzo(a,h)anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Benzo(g,h,i)perylene	ND	0.067	mg/Kg	1.00	11/17/2003 13:56	
Benzoic acid	ND	0.33	mg/Kg	1.00	11/17/2003 13:56	
Surrogate(s)						
Nitrobenzene-d5	86.8	23	%	1.00	11/17/2003 13:56	
2-Fluorobiphenyl	102.9	30	%	1.00	11/17/2003 13:56	
p-Terphenyl-d14	84.9	18	%	1.00	11/17/2003 13:56	
2-Fluorophenol	85.1	25	%	1.00	11/17/2003 13:56	
Phenol-d6	94.6	24	%	1.00	11/17/2003 13:56	
2,4,6-Tribromophenol	85.9	19	%	1.00	11/17/2003 13:56	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
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Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3550B/8270C

Test(s): 8270C

Sample ID: **SB-14-10**

Lab ID: 2003-11-0519 - 5

Sampled: 11/14/2003 10:55

Extracted: 11/15/2003 07:47

Matrix: Soil

QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Phenol	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Bis(2-chloroethyl)ether	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
2-Chlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
1,3-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
1,4-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Benzyl alcohol	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
1,2-Dichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
2-Methylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Bis(2-chloroisopropyl) ether	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
4-Methylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
N-Nitroso-di-n-propylamine	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Hexachloroethane	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Nitrobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Isophorone	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
2-Nitrophenol	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
2,4-Dimethylphenol	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Bis(2-chloroethoxy) methane	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
2,4-Dichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
1,2,4-Trichlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Naphthalene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
4-Chloroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 14:25	
Hexachlorobutadiene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
4-Chloro-3-methylphenol	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
2-Methylnaphthalene	0.090	0.067	mg/Kg	1.00	11/17/2003 14:25	
Hexachlorocyclopentadiene	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
2,4,6-Trichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
2,4,5-Trichlorophenol	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
2-Chloronaphthalene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
2-Nitroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 14:25	
Dimethyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
Acenaphthylene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3550B/8270C
Test(s): 8270C
Sample ID: **SB-14-10**
Lab ID: 2003-11-0519 - 5
Sampled: 11/14/2003 10:55
Extracted: 11/15/2003 07:47
Matrix: Soil
QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
3-Nitroaniline	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Acenaphthene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
2,4-Dinitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 14:25	
4-Nitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 14:25	
Dibenzofuran	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
2,4-Dinitrotoluene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
2,6-Dinitrotoluene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Diethyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
4-Chlorophenyl phenyl ether	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
Fluorene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
4-Nitroaniline	ND	0.33	mg/Kg	1.00	11/17/2003 14:25	
2-Methyl-4,6-dinitrophenol	ND	0.33	mg/Kg	1.00	11/17/2003 14:25	
N-Nitrosodiphenylamine	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
4-Bromophenyl phenyl ether	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
Hexachlorobenzene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Pentachlorophenol	ND	0.33	mg/Kg	1.00	11/17/2003 14:25	
Phenanthrene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Di-n-butyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
Fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Butyl benzyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
3,3-Dichlorobenzidine	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
Benzo(a)anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
bis(2-Ethylhexyl) phthalate	ND	0.33	mg/Kg	1.00	11/17/2003 14:25	
Chrysene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Di-n-octyl phthalate	ND	0.17	mg/Kg	1.00	11/17/2003 14:25	
Benzo(b)fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Benzo(k)fluoranthene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Benzo(a)pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Indeno(1,2,3-c,d)pyrene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

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Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 3550B/8270C
Test(s): 8270C
Sample ID: **SB-14-10**
Lab ID: 2003-11-0519 - 5
Sampled: 11/14/2003 10:55
Extracted: 11/15/2003 07:47
Matrix: Soil
QC Batch#: 2003/11/15-01.11

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Dibenzo(a,h)anthracene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Benzo(g,h,i)perylene	ND	0.067	mg/Kg	1.00	11/17/2003 14:25	
Benzoic acid	ND	0.33	mg/Kg	1.00	11/17/2003 14:25	
Surrogate(s)						
Nitrobenzene-d5	91.0	23	%	1.00	11/17/2003 14:25	
2-Fluorobiphenyl	111.6	30	%	1.00	11/17/2003 14:25	
p-Terphenyl-d14	108.1	18	%	1.00	11/17/2003 14:25	
2-Fluorophenol	88.2	25	%	1.00	11/17/2003 14:25	
Phenol-d6	104.9	24	%	1.00	11/17/2003 14:25	
2,4,6-Tribromophenol	103.1	19	%	1.00	11/17/2003 14:25	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF   Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 3550B/8270C   Test(s): 8270C
Method Blank   **Soil**   **QC Batch # 2003/11/15-01.11**
MB: 2003/11/15-01.11-001   Date Extracted: 11/15/2003 07:47

Compound	Conc.	RL	Unit	Analyzed	Flag
Phenol	ND	0.067	mg/Kg	11/17/2003 18:45	
Bis(2-chloroethyl)ether	ND	0.067	mg/Kg	11/17/2003 18:45	
2-Chlorophenol	ND	0.067	mg/Kg	11/17/2003 18:45	
1,3-Dichlorobenzene	ND	0.067	mg/Kg	11/17/2003 18:45	
1,4-Dichlorobenzene	ND	0.067	mg/Kg	11/17/2003 18:45	
Benzyl alcohol	ND	0.17	mg/Kg	11/17/2003 18:45	
1,2-Dichlorobenzene	ND	0.067	mg/Kg	11/17/2003 18:45	
2-Methylphenol	ND	0.067	mg/Kg	11/17/2003 18:45	
Bis(2-chloroisopropyl) ether	ND	0.067	mg/Kg	11/17/2003 18:45	
4-Methylphenol	ND	0.067	mg/Kg	11/17/2003 18:45	
N-Nitroso-di-n-propylamine	ND	0.067	mg/Kg	11/17/2003 18:45	
Hexachloroethane	ND	0.067	mg/Kg	11/17/2003 18:45	
Nitrobenzene	ND	0.067	mg/Kg	11/17/2003 18:45	
Isophorone	ND	0.067	mg/Kg	11/17/2003 18:45	
2-Nitrophenol	ND	0.067	mg/Kg	11/17/2003 18:45	
2,4-Dimethylphenol	ND	0.067	mg/Kg	11/17/2003 18:45	
Bis(2-chloroethoxy) methane	ND	0.17	mg/Kg	11/17/2003 18:45	
2,4-Dichlorophenol	ND	0.067	mg/Kg	11/17/2003 18:45	
1,2,4-Trichlorobenzene	ND	0.067	mg/Kg	11/17/2003 18:45	
Naphthalene	ND	0.067	mg/Kg	11/17/2003 18:45	
4-Chloroaniline	ND	0.330	mg/Kg	11/17/2003 18:45	
Hexachlorobutadiene	ND	0.067	mg/Kg	11/17/2003 18:45	
4-Chloro-3-methylphenol	ND	0.17	mg/Kg	11/17/2003 18:45	
2-Methylnaphthalene	ND	0.067	mg/Kg	11/17/2003 18:45	
Hexachlorocyclopentadiene	ND	0.17	mg/Kg	11/17/2003 18:45	
2,4,6-Trichlorophenol	ND	0.067	mg/Kg	11/17/2003 18:45	
2,4,5-Trichlorophenol	ND	0.067	mg/Kg	11/17/2003 18:45	
2-Chloronaphthalene	ND	0.067	mg/Kg	11/17/2003 18:45	
2-Nitroaniline	ND	0.33	mg/Kg	11/17/2003 18:45	
Dimethyl phthalate	ND	0.17	mg/Kg	11/17/2003 18:45	
Acenaphthylene	ND	0.067	mg/Kg	11/17/2003 18:45	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
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Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF   Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 3550B/8270C   Test(s): 8270C

Method Blank   **Soil**   **QC Batch # 2003/11/15-01.11**

MB: 2003/11/15-01.11-001   Date Extracted: 11/15/2003 07:47

Compound	Conc.	RL	Unit	Analyzed	Flag
3-Nitroaniline	ND	0.067	mg/Kg	11/17/2003 18:45	
Acenaphthene	ND	0.067	mg/Kg	11/17/2003 18:45	
2,4-Dinitrophenol	ND	0.33	mg/Kg	11/17/2003 18:45	
4-Nitrophenol	ND	0.33	mg/Kg	11/17/2003 18:45	
Dibenzofuran	ND	0.067	mg/Kg	11/17/2003 18:45	
2,4-Dinitrotoluene	ND	0.067	mg/Kg	11/17/2003 18:45	
2,6-Dinitrotoluene	ND	0.067	mg/Kg	11/17/2003 18:45	
Diethyl phthalate	ND	0.17	mg/Kg	11/17/2003 18:45	
4-Chlorophenyl phenyl ether	ND	0.17	mg/Kg	11/17/2003 18:45	
Fluorene	ND	0.067	mg/Kg	11/17/2003 18:45	
4-Nitroaniline	ND	0.33	mg/Kg	11/17/2003 18:45	
2-Methyl-4,6-dinitrophenol	ND	0.33	mg/Kg	11/17/2003 18:45	
N-Nitrosodiphenylamine	ND	0.067	mg/Kg	11/17/2003 18:45	
4-Bromophenyl phenyl ether	ND	0.17	mg/Kg	11/17/2003 18:45	
Hexachlorobenzene	ND	0.067	mg/Kg	11/17/2003 18:45	
Pentachlorophenol	ND	0.33	mg/Kg	11/17/2003 18:45	
Phenanthrene	ND	0.067	mg/Kg	11/17/2003 18:45	
Anthracene	ND	0.067	mg/Kg	11/17/2003 18:45	
Di-n-butyl phthalate	ND	0.17	mg/Kg	11/17/2003 18:45	
Fluoranthene	ND	0.067	mg/Kg	11/17/2003 18:45	
Pyrene	ND	0.067	mg/Kg	11/17/2003 18:45	
Butyl benzyl phthalate	ND	0.17	mg/Kg	11/17/2003 18:45	
3,3-Dichlorobenzidine	ND	0.17	mg/Kg	11/17/2003 18:45	
Benzo(a)anthracene	ND	0.067	mg/Kg	11/17/2003 18:45	
bis(2-Ethylhexyl) phthalate	ND	0.33	mg/Kg	11/17/2003 18:45	
Chrysene	ND	0.067	mg/Kg	11/17/2003 18:45	
Di-n-octyl phthalate	ND	0.17	mg/Kg	11/17/2003 18:45	
Benzo(b)fluoranthene	ND	0.067	mg/Kg	11/17/2003 18:45	
Benzo(k)fluoranthene	ND	0.067	mg/Kg	11/17/2003 18:45	
Benzo(a)pyrene	ND	0.067	mg/Kg	11/17/2003 18:45	
Indeno(1,2,3-c,d)pyrene	ND	0.067	mg/Kg	11/17/2003 18:45	
Dibenzo(a,h)anthracene	ND	0.067	mg/Kg	11/17/2003 18:45	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
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Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 3550B/8270C

Test(s): 8270C

Method Blank

Soil

QC Batch # 2003/11/15-01.11

MB: 2003/11/15-01.11-001

Date Extracted: 11/15/2003 07:47

Compound	Conc.	RL	Unit	Analyzed	Flag
Benzo(g,h,i)perylene	ND	0.067	mg/Kg	11/17/2003 18:45	
Benzoic acid	ND	0.33	mg/Kg	11/17/2003 18:45	
Surrogates(s)					
Nitrobenzene-d5	97.8	23-120	%	11/17/2003 18:45	
2-Fluorobiphenyl	113.9	30-115	%	11/17/2003 18:45	
p-Terphenyl-d14	94.6	18-137	%	11/17/2003 18:45	
2-Fluorophenol	94.9	25-121	%	11/17/2003 18:45	
Phenol-d6	106.9	24-113	%	11/17/2003 18:45	
2,4,6-Tribromophenol	121.0	19-122	%	11/17/2003 18:45	

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF | Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 3550B/8270C | Test(s): 8270C

Laboratory Control Spike | **Soil** | **QC Batch # 2003/11/15-01.11**

LCS 2003/11/15-01.11-002 | Extracted: 11/15/2003 | Analyzed: 11/17/2003 15:52

LCSD 2003/11/15-01.11-003 | Extracted: 11/15/2003 | Analyzed: 11/17/2003 16:50

Compound	Conc.	mg/Kg	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Phenol	1.54	1.47	2.00	77.0	73.9	4.1	20-90	35		
2-Chlorophenol	1.50	1.44	2.00	75.0	72.4	3.5	27-123	35		
1,4-Dichlorobenzene	0.710	0.730	0.998	71.1	73.3	3.0	28-104	30		
N-Nitroso-di-n-propylamine	0.730	0.710	0.998	73.1	71.3	2.5	25-114	39		
1,2,4-Trichlorobenzene	0.800	0.810	0.998	80.2	81.3	1.4	38-107	35		
4-Chloro-3-methylphenol	1.49	1.62	2.00	74.5	81.4	8.9	26-103	33		
Acenaphthene	0.780	0.810	0.998	78.2	81.3	3.9	49-102	30		
4-Nitrophenol	1.73	1.73	2.00	86.5	86.9	0.5	17-109	35		
2,4-Dinitrotoluene	0.880	0.890	0.998	88.2	89.4	1.4	39-139	38		
Pentachlorophenol	1.29	1.24	2.00	64.5	62.3	3.5	11-114	35		
Pyrene	0.880	0.870	0.998	88.2	87.3	1.0	25-117	35		
Surrogates(s)										
Nitrobenzene-d5	22.8	22.6	25	91.2	90.4		23-120			
2-Fluorobiphenyl	26.5	27.3	25	106.0	109.2		30-115			
p-Terphenyl-d14	23.4	24.6	25	93.6	98.4		18-137			
2-Fluorophenol	43.5	43.3	50	87.0	86.6		25-121			
Phenol-d6	52.7	54.4	50	105.4	108.8		24-113			
2,4,6-Tribromophenol	54.7	54.7	50	109.4	109.4		19-122			

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

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Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 3550B/8270C Test(s): 8270C

Matrix Spike (MS / MSD) **Soil** **QC Batch # 2003/11/15-01.11**

SB-9-9 >> MS Lab ID: 2003-11-0519 - 002

MS: 2003/11/15-01.11-006 Extracted: 11/15/2003 Analyzed: 11/17/2003 17:48
Dilution: 1.00

MSD: 2003/11/15-01.11-007 Extracted: 11/15/2003 Analyzed: 11/17/2003 18:17
Dilution: 1.00

Compound	Conc.	mg/Kg		Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	mg/Kg	MS	MSD	RPD	Rec.	RPD	MS	MSD
Phenol	0.840	1.36	ND	1.97	42.6	68.7	46.9	20-90	35		rpd
2-Chlorophenol	0.860	1.32	ND	1.97	43.7	66.7	41.7	27-123	35		rpd
1,4-Dichlorobenzene	0.420	0.630	ND	0.984	42.7	63.8	39.6	28-104	30		rpd
N-Nitroso-di-n-propylamine	0.410	0.690	ND	0.984	41.7	69.8	50.4	25-114	39		rpd
1,2,4-Trichlorobenzene	0.430	0.710	ND	0.984	43.7	71.9	48.8	38-107	35		rpd
4-Chloro-3-methylphenol	0.830	1.50	ND	1.97	42.1	75.8	57.2	26-103	33		rpd
Acenaphthene	0.430	0.780	ND	0.984	43.7	78.9	57.4	49-102	30	mso	rpd
4-Nitrophenol	0.860	1.61	ND	1.97	43.7	81.3	60.2	17-109	35		rpd
2,4-Dinitrotoluene	0.470	0.860	ND	0.984	47.8	87.0	58.2	39-139	38		rpd
Pentachlorophenol	0.460	0.940	ND	1.97	23.4	47.5	68.0	11-114	35		rpd
Pyrene	0.550	0.780	ND	0.984	55.9	78.9	34.1	25-117	35		
Surrogate(s)											
Nitrobenzene-d5	11.1	21.2		25	44.6	84.9		23-120			
2-Fluorobiphenyl	12.5	27.3		25	49.9	109.3		30-115			
p-Terphenyl-d14	14.4	21.8		25	57.4	87.0		18-137			
2-Fluorophenol	21.8	38.0		50	43.7	76.1		25-121			
Phenol-d6	28.6	49.0		50	57.2	98.1		24-113			
2,4,6-Tribromophenol	26.1	50.2		50	52.1	100.4		19-122			

Semi-volatile analysis by GC/MS - EPA8270C

SECOR-Mountain View
Attn.: Jack Hardin

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Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF Received: 11/14/2003 19:50

Legend and Notes

Result Flag

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mso

MS/MSD spike recoveries were out of QC limits due to matrix interference.
Precision and Accuracy were verified by LCS/LCSD.

rpd

Analyte RPD was out of QC limits due to sample heterogeneity.

Submission #: 2003-11-0519

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
SB-5-5	11/14/2003 15:15	Soil	1
SB-9-9	11/14/2003 12:45	Soil	2
SB-11-10	11/14/2003 09:15	Soil	3
SB-12-10	11/14/2003 16:35	Soil	4

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s):	5030B	Test(s):	8260B
Sample ID:	**SB-5-5**	Lab ID:	2003-11-0519 - 1
Sampled:	11/14/2003 15:15	Extracted:	11/15/2003 12:25
Matrix:	Soil	QC Batch#:	2003/11/15-01.69

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	1000	ug/Kg	1.00	11/15/2003 12:25	
Benzene	ND	5.0	ug/Kg	1.00	11/15/2003 12:25	
Toluene	ND	5.0	ug/Kg	1.00	11/15/2003 12:25	
Ethyl benzene	ND	5.0	ug/Kg	1.00	11/15/2003 12:25	
Total xylenes	5.1	5.0	ug/Kg	1.00	11/15/2003 12:25	
Methyl tert-butyl ether (MTBE)	ND	5.0	ug/Kg	1.00	11/15/2003 12:25	
Surrogate(s)						
1,2-Dichloroethane-d4	87.0	70	%	1.00	11/15/2003 12:25	
Toluene-d8	96.9	81	%	1.00	11/15/2003 12:25	

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 5030B
Test(s): 8260B
Sample ID: **SB-9-9**
Lab ID: 2003-11-0519 - 2
Sampled: 11/14/2003 12:45
Extracted: 11/15/2003 11:10
Matrix: Soil
QC Batch#: 2003/11/15-01.69

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	1000	ug/Kg	1.00	11/15/2003 11:10	
Benzene	ND	5.0	ug/Kg	1.00	11/15/2003 11:10	
Toluene	ND	5.0	ug/Kg	1.00	11/15/2003 11:10	
Ethyl benzene	ND	5.0	ug/Kg	1.00	11/15/2003 11:10	
Total xylenes	ND	5.0	ug/Kg	1.00	11/15/2003 11:10	
Methyl tert-butyl ether (MTBE)	ND	5.0	ug/Kg	1.00	11/15/2003 11:10	
Surrogate(s)						
1,2-Dichloroethane-d4	94.2	70	%	1.00	11/15/2003 11:10	
Toluene-d8	89.0	81	%	1.00	11/15/2003 11:10	

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 5030B
Test(s): 8260B
Sample ID: **SB-11-10**
Lab ID: 2003-11-0519 - 3
Sampled: 11/14/2003 09:15
Extracted: 11/15/2003 13:21
Matrix: Soil
QC Batch#: 2003/11/15-01.69
Analysis Flag: o,is (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	3600	3000	ug/Kg	3.03	11/15/2003 13:21	
Benzene	570	15	ug/Kg	3.03	11/15/2003 13:21	
Toluene	890	15	ug/Kg	3.03	11/15/2003 13:21	
Ethyl benzene	75	15	ug/Kg	3.03	11/15/2003 13:21	
Total xylenes	340	15	ug/Kg	3.03	11/15/2003 13:21	
Methyl tert-butyl ether (MTBE)	ND	15	ug/Kg	3.03	11/15/2003 13:21	
Surrogate(s)						
1,2-Dichloroethane-d4	105.9	70	%	3.03	11/15/2003 13:21	
Toluene-d8	80.1	81	%	3.03	11/15/2003 13:21	slm

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 5030B
Test(s): 8260B
Sample ID: **SB-12-10**
Lab ID: 2003-11-0519 - 4
Sampled: 11/14/2003 16:35
Extracted: 11/15/2003 11:48
Matrix: Soil
QC Batch#: 2003/11/15-01.69
Analysis Flag: is (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	1100	1000	ug/Kg	1.00	11/15/2003 11:48	
Benzene	70	5.0	ug/Kg	1.00	11/15/2003 11:48	
Toluene	280	5.0	ug/Kg	1.00	11/15/2003 11:48	
Ethyl benzene	29	5.0	ug/Kg	1.00	11/15/2003 11:48	
Total xylenes	120	5.0	ug/Kg	1.00	11/15/2003 11:48	
Methyl tert-butyl ether (MTBE)	ND	5.0	ug/Kg	1.00	11/15/2003 11:48	
Surrogate(s)						
1,2-Dichloroethane-d4	110.9	70	%	1.00	11/15/2003 11:48	
Toluene-d8	80.0	81	%	1.00	11/15/2003 11:48	slm

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 5030B Test(s): 8260B

Method Blank **Soil** **QC Batch # 2003/11/15-01.69**

MB: 2003/11/15-01.69-020 Date Extracted: 11/15/2003 10:20

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	1000	ug/Kg	11/15/2003 10:20	
Benzene	ND	5.0	ug/Kg	11/15/2003 10:20	
Toluene	ND	5.0	ug/Kg	11/15/2003 10:20	
Ethyl benzene	ND	5.0	ug/Kg	11/15/2003 10:20	
Total xylenes	ND	5.0	ug/Kg	11/15/2003 10:20	
Methyl tert-butyl ether (MTBE)	ND	5.0	ug/Kg	11/15/2003 10:20	
Surrogates(s)					
1,2-Dichloroethane-d4	87.4	70-121	%	11/15/2003 10:20	
Toluene-d8	86.7	81-117	%	11/15/2003 10:20	

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike

Soil

QC Batch # 2003/11/15-01.69

LCS 2003/11/15-01.69-043 Extracted: 11/15/2003 Analyzed: 11/15/2003 09:43
LCSD 2003/11/15-01.69-002 Extracted: 11/15/2003 Analyzed: 11/15/2003 10:02

Compound	Conc.	ug/Kg	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	48.5	52.8	50.0	97.0	105.6	8.5	69-129	20		
Toluene	52.3	55.5	50.0	104.6	111.0	5.9	70-130	20		
Methyl tert-butyl ether (MTBE)	59.1	56.8	50.0	118.2	113.6	4.0	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	542	472	500	108.4	94.4		70-121			
Toluene-d8	488	508	500	97.6	101.6		81-117			

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Legend and Notes

Analysis Flag

is

Internal standard out of range due to matrix interference.

o

Reporting limits were raised due to high level of analyte present in the sample.

Result Flag

slm

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

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
SB-14-10	11/14/2003 10:55	Soil	5

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Prep(s): 5030B
Test(s): 8260B
Sample ID: **SB-14-10**
Lab ID: 2003-11-0519 - 5
Sampled: 11/14/2003 10:55
Extracted: 11/17/2003 19:13
Matrix: Soil
QC Batch#: 2003/11/17-01.69

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	1000	ug/Kg	1.00	11/17/2003 19:13	
Benzene	ND	5.0	ug/Kg	1.00	11/17/2003 19:13	
Toluene	ND	5.0	ug/Kg	1.00	11/17/2003 19:13	
Ethyl benzene	ND	5.0	ug/Kg	1.00	11/17/2003 19:13	
Total xylenes	ND	5.0	ug/Kg	1.00	11/17/2003 19:13	
Methyl tert-butyl ether (MTBE)	ND	5.0	ug/Kg	1.00	11/17/2003 19:13	
Surrogate(s)						
1,2-Dichloroethane-d4	93.8	70	%	1.00	11/17/2003 19:13	
Toluene-d8	86.2	81	%	1.00	11/17/2003 19:13	

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Method Blank

Soil

QC Batch # 2003/11/17-01.69

MB: 2003/11/17-01.69-003

Date Extracted: 11/17/2003 10:03

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	1000	ug/Kg	11/17/2003 10:03	
Methyl tert-butyl ether (MTBE)	ND	5.0	ug/Kg	11/17/2003 10:03	
Benzene	ND	5.0	ug/Kg	11/17/2003 10:03	
Toluene	ND	5.0	ug/Kg	11/17/2003 10:03	
Ethyl benzene	ND	5.0	ug/Kg	11/17/2003 10:03	
Total xylenes	ND	5.0	ug/Kg	11/17/2003 10:03	
Surrogates(s)					
1,2-Dichloroethane-d4	87.1	70-121	%	11/17/2003 10:03	
Toluene-d8	95.2	81-117	%	11/17/2003 10:03	

Gas/BTEX Fuel Oxygenates by 8260B

SECOR-Mountain View
Attn.: Jack Hardin

2301 Leghorn Street
Mountain View, CA 94043
Phone: (650) 691-0131 Fax: (650) 691-9837

Project: 900 Minnesota St., SF

Received: 11/14/2003 19:50

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike

Soil

QC Batch # 2003/11/17-01.69

LCS 2003/11/17-01.69-026 Extracted: 11/17/2003 Analyzed: 11/17/2003 09:26
LCSD 2003/11/17-01.69-045 Extracted: 11/17/2003 Analyzed: 11/17/2003 09:45

Compound	Conc.	ug/Kg	Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	48.7	40.6	50.0	97.4	81.2	18.1	65-165	20		
Benzene	43.8	45.8	50.0	87.6	91.6	4.5	69-129	20		
Toluene	47.7	53.1	50.0	95.4	106.2	10.7	70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	432	440	500	86.4	88.0		70-121			
Toluene-d8	443	499	500	88.6	99.8		81-117			

EVERN
TRENT
SERVICES

STL ChromaLab
Chain of Custody

1220 Quarry Lane ● Pleasanton CA 94566-4756
Phone: (925) 484-1919 ● Fax: (925) 484-1096
Email: info@chromalab.com

2003-11-0519

Reference #: 80281

Date 11/14/03 Page 1 of ____

From

Proj Mgr JACK HARDIN
ompany SECOR INTL INC
ddress 2301 LEGHORN ST.
MOUNTAIN VIEW, CA 94043
mpler (Signature)
hone 650-691-0131 Fax/Email jhardin@secor.com 650-691-9837

Analysis Request

Sample ID	Date	Time	Matrix	Preserv.	TPH (EPA 8015, 8020/8021) ☒ Gas w/ ☒ BTEX ☒ MTBE	Purgeable Aromatics BTEX (EPA 8020/8021)	TEPH (EPA 8015M) ☐ Silica Gel ☒ Diesel ☒ Motor Oil ☐ Other	Fuel Oxygenates (8260B) ☐ DCA, EDB ☐ Full Oxygenate List ☐ MtBE ☐ BTEX	Purgeable Halocarbons (HVOCs) (EPA 8010/8021)	Volatile Organics GC/MS (VOCs) (EPA 8260A/8260B)	Semivolatiles GC/MS (EPA 8270)	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	☐ Pesticides (EPA 8081) ☐ PCBs (EPA 8082)	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☒ LUFT ☐ RCRA ☒ Other See Note	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H₂O)	☐ Spec Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions ☐ Cl ☐ SO₄ ☐ NO₃ ☐ F ☐ Br ☐ NO₂ ☐ PO₄					Number of Containers
B-5-5 all	11/14/03	1515	S	—	X		X				X					X									
B-9-9 all	11/14/03	1245	S	—	X		X				X					X									
B-11-10	11/14/03	0915	S	—	X		X				X					X									
B-12-10	11/14/03	1030	S	—	X		X				X					X									
B-14-10	11/14/03	1055	S	—	X		X				X					X									

RUSH

Project Info.

ect Name 465 Minnesota St. SF
roject#
O#
ed I Card#

Std 5 Day | 72h | 48h | [✓ 24h]

eport ☐ Routine ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD
pecial Instructions / Comments
* 24-HR TAT
* Metals: cadmium, chromium, lead, nickel, zinc.

Sample Receipt

# of Containers: 5
Head Space
Temp 5.5°C
Conforms to record
Other

1) Relinquished by
Signature Time 5:45
Printed Name AMEERA LIONGSON Date 11/14/03
Company SECOR INTL INC

2) Relinquished by
Signature Steve Time 19:50
Printed Name Date 11/14/03
Company

3) Relinquished by
Signature Time
Printed Name Date
Company

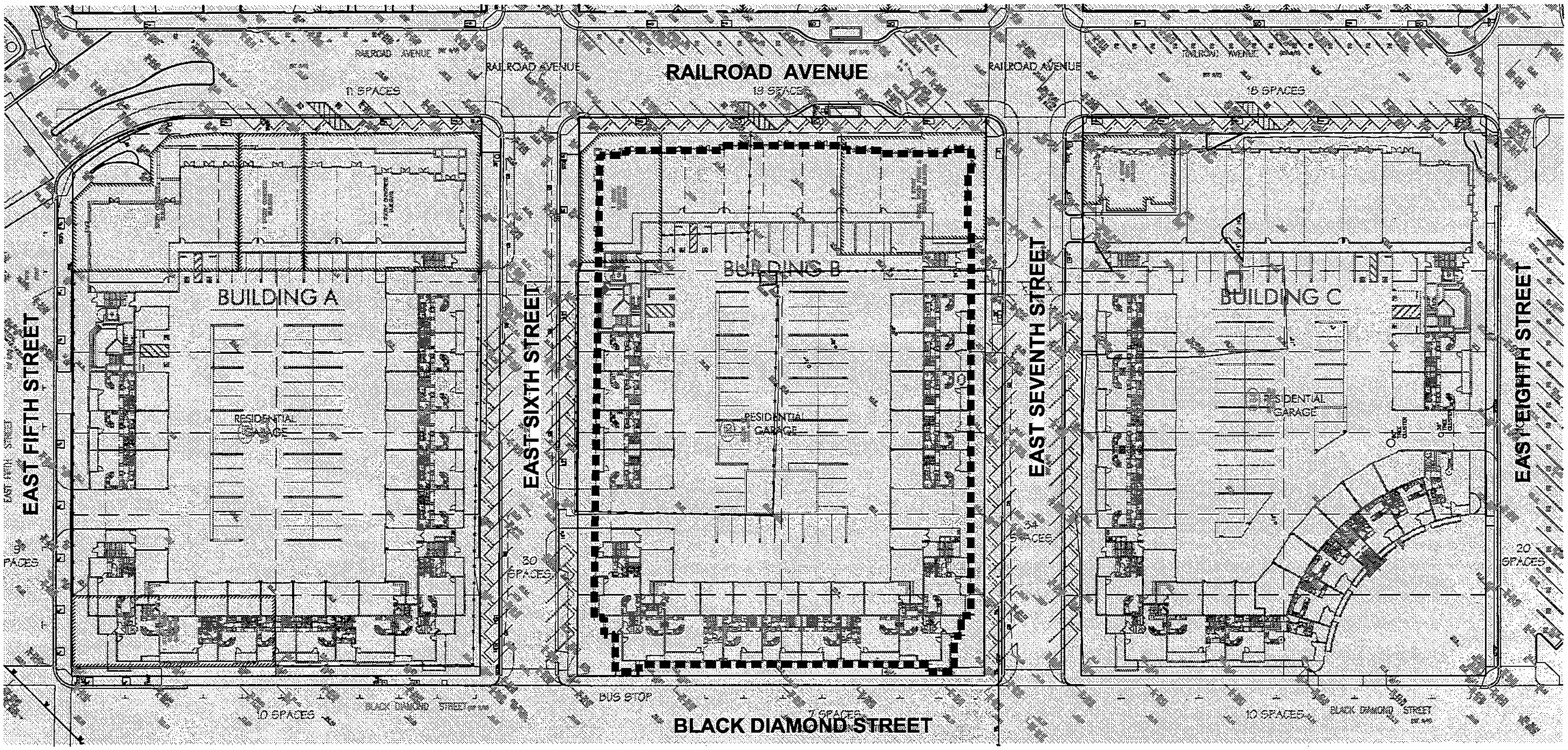
1) Received by
Signature Steve Time 18:20
Printed Name Date 11/14/03
Company STL

2) Received by
Signature Time
Printed Name Date
Company

3) Received by
Signature Novak Time 1950
Printed Name Novak Date 11/14/03
Company STL-SF

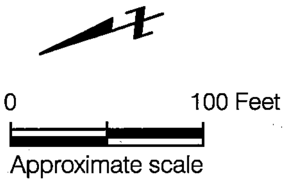
Rev 05/01

APPENDIX G
Site Plan, Vidrio Site



EXPLANATION

■■■■■■■■■ Boundary of area where import soil was placed



Reference: "Master Site Plan A0-1" by Dahlin Group Architecture Planning, received electronically on 7 April 2005.

282004_ALTERNATIVE–SitePlan.dwg

VIDRIO DEVELOPMENT PROJECT
Pittsburg, California

SITE PLAN

Date 02/05/09	Project No. 2820.04	Figure E-1

Treadwell&Rollo

APPENDIX H
Errata

ATTACHMENT H
Errata
to
Site Mitigation Completion Report
901 Jefferson Street
Oakland, California
17 March 2008
Treadwell & Rollo

1. Page 3, Second paragraph: Line reading, “Because of logistical restraints, approximated 7,000 tons of soil not impacted by lead or petroleum...”

   Is replaced by

   “Because of logistical restraints, approximately 3,038 cubic yards of soil not impacted by lead or petroleum...”

2. Page 12, second paragraph third line: Line reading, “...approximately 7,020 tons of soil was transported from the Site to the Vidri development site in Pittsburg...”

   Is replaced by

   “...approximately 3,048 cubic yards of soil was transported from the Site to the Vidrio development site in Pittsburg...”

In July 2006, soil containing lead at concentrations greater than the ESL was excavated and disposed off Site: approximately 500 tons being disposed as California Hazardous Waste at a Class I landfill and approximately 300 tons as non-hazardous waste at a Class II landfill. A small volume of additional soil, contaminated with petroleum hydrocarbons, was excavated when three buried waste oil drums were discovered. These drums and the over-excavated soil were also disposed as hazardous waste. No other evidence of petroleum hydrocarbon impacted soil, buried drums, underground tanks or piping associated with underground tanks were encountered during excavation at the Site.

Because of logistical constraints, approximately 3,038 cubic yards of soil not impacted by lead or petroleum hydrocarbons were excavated and removed from the Site to a development in Pittsburg, California. The remaining soil shallower than 7 feet was excavated, moisture treated, and reused on Site. Additional soil, un-impacted by residual chemicals, was imported to the Site to make up for the volume excavated and removed.

This report documents these activities and demonstrates the Site mitigation activities performed have met the requirements of the SMP and the Alameda County Certificate of Completion.

1.0 INTRODUCTION

This Site Mitigation Completion Report (SMCR) was prepared by Treadwell and Rollo, Inc. (Treadwell & Rollo) for the property located at 901 Jefferson Street in Oakland, California (Site). The report was prepared on behalf of A.F. Evans Development Company (A.F. Evans) to document Site mitigation measures performed in accordance with guidelines outlined in the Treadwell & Rollo *Site Mitigation Plan, Proposed Residential Development, 901 Jefferson Street, Oakland, California* (SMP), dated 12 April 2006 (Appendix A). The SMP defined particular soil management activities to address residual chemicals in Site soil. The purposes of the mitigation activities included protection of Site workers and the public, protection of future Site users, and appropriate disposal of soil removed from the Site.

This report summarizes mitigation activities performed at the Site from June through November 2006. Section 2 provides background information on the Site, including a description of the Site and redevelopment project, a summary of previous environmental activities, and soil management requirements defined in the SMP. Section 3 describes activities associated with sampling, excavating and disposing of lead-impacted soil, and the discovery of buried drums on the Site. Treadwell & Rollo's limitations in this project are discussed in Section 4, and conclusions are presented in Section 5.

contractor during the excavation. No evidence of tanks, ancillary piping, or additional buried drums was observed during excavation.

Because of Site constraints, primarily the lack of room for stockpiling soil, the contractor decided to off-haul the majority of excavated fill in the central and western parts of the Site. On August 7-8, 2006, approximately 3,048 cubic yards of soil was transported from the Site to the Vidrio development site in Pittsburg, California. Soil was transported by Double D Transportation of Hayward, California under the direction of RJS & Associates of Hayward, California. The remaining excavated soil was backfilled and recompacted on the Site. Additional soil needed was imported from a site at 900 Minnesota Street in San Francisco. This additional soil consisted of disaggregated weathered sandstone and shale bedrock that had been tested for residual chemicals. Treadwell & Rollo had evaluated the analytical data for this soil and found it to be acceptable for import to the Site

3.4 Groundwater Management

Groundwater was not encountered during the excavation and therefore groundwater management was not necessary.

4.0 LIMITATIONS

Treadwell and Rollo, Inc. has prepared this Site Mitigation Completion Letter based on information from our previous investigations of the Site, intermittent Site observations, and information provided by A.F. Evans and GGTR. Reasonable effort has been made to check that the information obtained is factual and from reliable sources, but no responsibility is assumed for its accuracy. Treadwell & Rollo, Inc. assumes no responsibility or liability for errors in the information used or statements from sources other than those of Treadwell & Rollo, Inc. All conclusions and recommendations concerning the Site are those professional opinions of Treadwell & Rollo, Inc. personnel involved with the project, and should not be considered a legal interpretation of existing environmental regulations.

5.0 CONCLUSIONS

Treadwell & Rollo has completed this Soil Mitigation Completion Report which documents soil management activities for redevelopment of the Site. Based on Treadwell and Rollo's observations and

APPENDIX I
Seven Environmental Reports

STREAMBORN

510/528-4234
Fax 528-2613

Douglas N. and Shar Salter
1551 Larimer Street, #1302
Denver CO 80202

4 June 1996

Project No. P135

Letter Report
Risk Assessment for Benzene
901 Jefferson Street
Oakland CA

Dear Mr. and Mrs. Salter:

This letter report presents our risk assessment for benzene at the subject property (Figures 1 and 2). Our assessment evaluates the risk presented by the following source-pathway-receptor model:

(1) Benzene volatilizes from groundwater.

(2) Benzene then migrates through the ground to a hypothetical ground level living or work space that may be constructed at the property.

(3) Benzene is then inhaled by hypothetical occupants of the living or work space.

Our risk assessment was completed to determine whether additional corrective action or other mitigation measures will be necessary to protect human health should the property be residentially or commercially developed. The property is currently paved and operated as a parking lot; the potential human exposure hypothesized in our risk assessment is not actually occurring.

METHODOLOGY

Our risk assessment follows guidelines presented in the American Society of Testing and Materials (ASTM) Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites, ASTM E-1739-95. The ASTM standard incorporates EPA risk assessment practices and includes simple (and typically conservative) equations to model contaminant transport and human exposure.

The ASTM standard describes a tiered approach to assessing risks. Tier 1 uses non-site specific assumptions to back-calculate concentrations in environmental media (such as groundwater) that correspond to acceptable risk levels. For Tier 1, the back-calculated concentrations are termed "risk-based screening levels". The risk-based screening levels are presented in a "Look-up Table". The risk-based screening levels are generally used to determine whether risks posed by a site are *below* the threshold of concern; if environmental media concentrations at the site are below the risk-based screening levels, corrective action is not needed.

In cases where environmental media concentrations at the site are above the risk-based screening levels, a more refined risk assessment methodology may be appropriate. The ASTM Tier 2 risk assessment is based on the same equations used in Tier 1, but incorporates site specific data and additional modeling (for example, biodegradation) when appropriate. Accordingly, the Tier 2 analysis generally provides more accurate risk levels.

Benzene concentrations in groundwater at the property currently exceed the risk-based screening levels cited in the Look-up Table. Accordingly, we completed a Tier 2 risk assessment as described below.

Conceptual Model

Our assessment evaluates the benzene inhalation risk that could result from future residential or commercial development of the property. The following scenario has been hypothesized: (1) dissolved benzene in groundwater volatilizes into soil vapor, (2) the benzene migrates upward by diffusion through soil and then through cracks in the building foundation, (3) the benzene mixes with building air in a ground level occupied enclosed space (for example, an apartment or office), and (4) the benzene is inhaled by a human receptor. The evaluation was completed for receptors within either commercial/industrial or residential buildings. The evaluation was completed only for benzene because benzene presents a greater relative risk than the other gasoline-related contaminants that have been detected at the property.

The conceptual model for transport of benzene from groundwater to indoor air is depicted in Figure 3. The analysis of benzene transport includes the following assumptions:

- Dissolved benzene concentration in groundwater is constant *(in actuality, benzene concentrations in groundwater are expected to decrease with time, thereby providing lower risk).*
- Benzene partitions at equilibrium between the dissolved phase and the vapor phase at the groundwater table *(if benzene partitioning were rate-limited, lower risk would result).*
- Benzene migrates upward through the capillary fringe, vadose zone, and foundation cracks via steady-state diffusion.
- The ASTM Tier 1 analysis does not provide for biodegradation of benzene vapors. For our Tier 2 analysis, we evaluated risk assuming (1) no biodegradation, and (2) first-order biodegradation *(in actuality, biodegradation has been documented at the property).*
- Steady, well-mixed atmospheric dispersion of benzene occurs within the enclosed space; convective transport of benzene into the building through the foundation cracks is negligible in comparison with diffusive transport.

Our risk assessment employs equations from the ASTM standard. Appendix A presents the equations, along with variables for (1) chemical/physical properties of benzene, (2) subsurface conditions (the variables are based on soil with a fine sand texture that was encountered during drilling at the property), (3) enclosed-space dimensions and ventilation conditions, and (4) exposure rates.

Tier 1 Verification

The ASTM Tier 1 "Look-up Table" presents the following risk-based screening level for inhalation risk from benzene in groundwater:

- Commercial/Industrial Development 0.0739 mg/L for an Excess Individual Lifetime Cancer Risk") of 1 x 10^{-6} (one-in-a- million).
- Residential Development 0.0238 mg/L for an Excess Individual Lifetime Cancer Risk") of 1 x 10^{-6} (one-in-a- million).

By replicating the ASTM Tier 1 variables, we are able to replicate the ASTM Tier 1 numbers (Table A-1 in Appendix A), verifying that (1) the correct model equations were used and (2) the calculations were performed accurately.

Tier 2 Analysis

The Tier 2 (site specific) analysis was performed for two cases. Case 1 assumes no biodegradation of benzene vapors. Case 2 assumes first-order biodegradation of benzene vapors. All of the variables employed in our Tier 2 analysis were identical to those used in the Tier 1 (non-site specific) analysis, with the following exceptions:

- The depth to groundwater was taken to be 21-feet (640 cm). Depth to groundwater at the site is generally between 21- and 25-feet.
- The capillary fringe thickness was taken to be 7 cm, based on a literature value of 7.7 cm for fine sand (Fetter 1980).
- The average benzene concentration in groundwater was taken to be 0.62 mg/L. Historic groundwater benzene concentrations are presented in Table 1. Based on monitoring results for 4 onsite wells, conducted on 5 March 1996, the average benzene concentration in groundwater at the property is approximately 0.52 mg/L (Streamborn 1996). The average concentration within the three wells (MW-5, MW-19, and PTW-1) clustered around the northwest corner of the property (the most contaminated portion of the property) is 0.62 mg/L.
- For the Tier 2 analysis with biodegradation, we made the following assumptions:
  - The rate of diffusion of benzene vapors upward through the vadose zone is retarded by sorption/desorption interactions with the soil matrix. Using (1) the example model equations for vapor-phase transport provided in the ASTM standard, and (2) the assumed site-specific and chemical-specific parameters listed in Table A-1 of Appendix A, we calculated a retardation factor of 2.3. Using this retardation factor, the minimum time required for benzene vapors to diffuse through the vadose zone was estimated at 1,453 days.

- The rate of biodegradation of benzene vapors in the vadose zone was assumed at 0.25 % per day (equivalent to a half-life of 277 days). This is a conservative estimate based on reported biodegradation rates from 0.10% to 1.2 % per day (equivalent to half-lives of 693 to 57 days) for groundwater aquifers in California, Colorado, and Utah (Chevron Research and Technology Company 1993). Biodegradation rates in the vadose zone should be greater than in the saturated zone because oxygen is more readily available in the vadose zone.

RESULTS AND CONCLUSIONS

The following site specific risk levels were calculated (Table 2):

- Assuming no biodegradation of benzene vapors, excess individual lifetime cancer risks are 6.5 x 10^{-6} for a commercial/industrial building and 2.0 x 10^{-5} for a residential building.
- Assuming first-order biodegradation of benzene vapors, excess individual lifetime cancer risks are 1.7 x 10^{-7} for a commercial/industrial building, and 5.3 x 10^{-7} for a residential building.

The ASTM standard states that Federal and State regulatory agencies have considered theoretical cancer risks ranging from 1 x 10^{-4} to 1 x 10^{-6} to be acceptable, depending on the exposed population.

Based on the strong likelihood of continued biodegradation, both for benzene vapors and benzene in groundwater, the results of our risk assessment indicate that additional corrective action or other mitigation measures are not necessary to protect human health should the property be developed.

REFERENCES

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Fetter, C.W., Jr. (1980). *Applied Hydrogeology.* Charles E. Merrill Publishing Company, Columbus OH. 1980.

Streamborn (1996). *Data Submittal, Groundwater Monitoring, 901 Jefferson Street, Oakland CA.* Prepared for Douglas N. and Shar Salter, Denver CO. Prepared by Streamborn, Berkeley CA. 12 April 1996.

If you have any questions, please call.

Sincerely,

STREAMBORN

For

Douglas W. Lovell, PE
Geoenvironmental Engineer

Kenneth Chiang
Environmental Engineer

Attachments

Table 1
Groundwater Analytical Results for Benzene
901 Jefferson Street, Oakland CA

Sample Location	Sample Date	Sampled By	Laboratory Analyses By	Sample Identification	Sample Type	Benzene (mg/L)	Comments
MW-5	24 April 1989	WCC	Sequoia	Not reported	Grab (bailer)	7.5	
	14 August 1989	WCC	Sequoia	Not reported	Grab (bailer)	5.4	
	15 February 1991	WCC	Sequoia	Not reported	Grab (bailer)	7.5	
	2 March 1993	WCC	Sequoia	Not reported	Grab (bailer)	4.4	
	15 December 1993	Streamborn	Chromalab	MW-5 (15Dec93)	Grab (bailer)	4.4	
	26 October 1994	Streamborn	AEN	MW-5 (26Oct94)	Grab (bailer)	4.2	
	23 December 1994	Streamborn	AEN	MW-5 (23Dec94)	Grab (bailer)	3.2	
	17 February 1995	Streamborn	AEN	MW-5 (17Feb95)	Grab (bailer)	2.6	
	18 April 1995	Streamborn	AEN	MW-5 (18Apr95)	Grab (bailer)	0.15	
	15 June 1995	Streamborn	AEN	MW-5 (15Jun95)	Grab (bailer)	0.27	
	1 August 1995	Streamborn	AEN	MW-5 (1Aug95)	Grab (bailer)	0.19	
	5 March 1996	Streamborn	AEN	MW-5 (5Mar96)	Grab (bailer)	1.3	
MW-18	14 August 1989	WCC	Sequoia	Not reported	Grab (bailer)	0.16	
	15 February 1991	WCC	Sequoia	Not reported	Grab (bailer)	0.056	
	2 March 1993	WCC	Sequoia	Not reported	Grab (bailer)	0.011	
	15 December 1993	Streamborn	Chromalab	MW-18 (15Dec94)	Grab (bailer)	0.0079	
	1 August 1995	Streamborn	AEN	MW-18 (1Aug95)	Grab (bailer)	0.046	
	5 March 1996	Streamborn	AEN	MW-18 (5Mar96)	Grab (bailer)	0.20	
PTW-1	26 October 1994	Streamborn	AEN	PTW-1 (26Oct94)	Grab (bailer)	1.7	
	17 February 1995	Streamborn	AEN	PTW-1 (17Feb95)	Grab (bailer)	0.11	
	18 April 1995	Streamborn	AEN	PTW-1 (18Apr95)	Grab (bailer)	0.035	
	15 June 1995	Streamborn	AEN	PTW-1 (15Jun95)	Grab (bailer)	0.044	
	1 August 1995	Streamborn	AEN	PTW-1 (1Aug95)	Grab (bailer)	0.009	
	5 March 1996	Streamborn	AEN	PTW-1 (5Mar96)	Grab (bailer)	0.24	
MW-19	14 August 1989	WCC	Sequoia	Not reported	Grab (bailer)	4.3	
	15 February 1991	WCC	Sequoia	Not reported	Grab (bailer)	1.8	
	2 March 1993	WCC	Sequoia	Not reported	Grab (bailer)	10	1/4-inch floating product observed during sampling - sample results may not be representative of dissolved concentrations.
	15 June 1995	Streamborn	AEN	MW-19 (15Jun95)	Grab (bailer)	0.25	
	1 August 1995	Streamborn	AEN	MW-19 (1Aug95)	Grab (bailer)	0.17	
	5 March 1996	Streamborn	AEN	MW-19 (5Mar96)	Grab (bailer)	0.32	

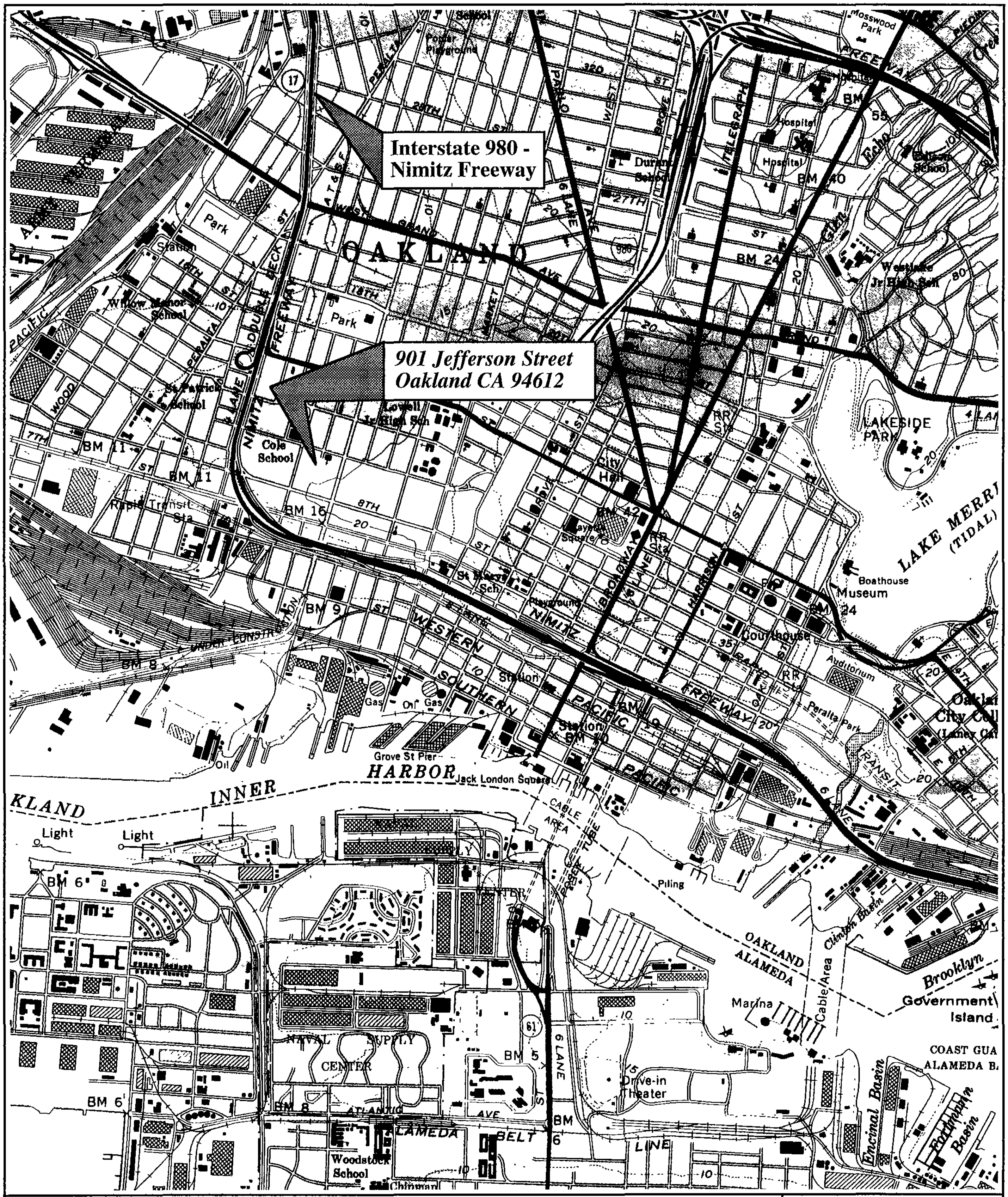
General Notes

(a) WCC = Woodward-Clyde Consultants (Oakland CA).

(b) AEN = American Environmental Network (Pleasant Hill CA); Sequoia = Sequoia Analytical (Redwood City CA)

Table 2
Site Specific Risk Levels for Benzene
901 Jefferson Street, Oakland CA

Scenario	Commercial/Industrial Property - Without Biodegradation	Commercial/Industrial Property - With Biodegradation	Residential Property - Without Biodegradation	Residential Property - With Biodegradation
Site Specific Variables Which Differ from the ASTM Tier 1 "Lookup Table"	• Depth to groundwater = 640 cm (21 feet) • Capillary zone thickness = 7 cm • Average benzene concentration in groundwater = 0.62 mg/L	• Depth to groundwater = 640 cm (21 feet) • Capillary zone thickness = 7 cm • Average benzene concentration in groundwater = 0.62 mg/L • Retardation of benzene vapors diffusing upward through vadose soil at a retardation factor of 2.3 • First-order biodegradation of benzene vapors in the vadose zone at a degradation rate of 0.15% per day	• Depth to groundwater = 640 cm (21 feet) • Capillary zone thickness = 7 cm • Average benzene concentration in groundwater = 0.62 mg/L	• Depth to groundwater = 640 cm (21 feet) • Capillary zone thickness = 7 cm • Average benzene concentration in groundwater = 0.62 mg/L • Retardation of benzene vapors diffusing upward through vadose soil at a retardation factor of 2.3 • First-order biodegradation of benzene vapors in the vadose zone at a degradation rate of 0.15% per day
Excess Individual Lifetime Cancer Risk	6.5×10^{-6}	1.7×10^{-7}	2.0×10^{-5}	5.3×10^{-7}



0 0.5 1.0

Approximate Scale in Miles

0 5,000

Approximate Scale in Feet

Basemap: U.S. Geological Survey, 7.5 Minute Quadrangle, Oakland West CA, 1959 (Photorevised 1980)

Figure 1

Location Map

901 Jefferson Street Oakland CA

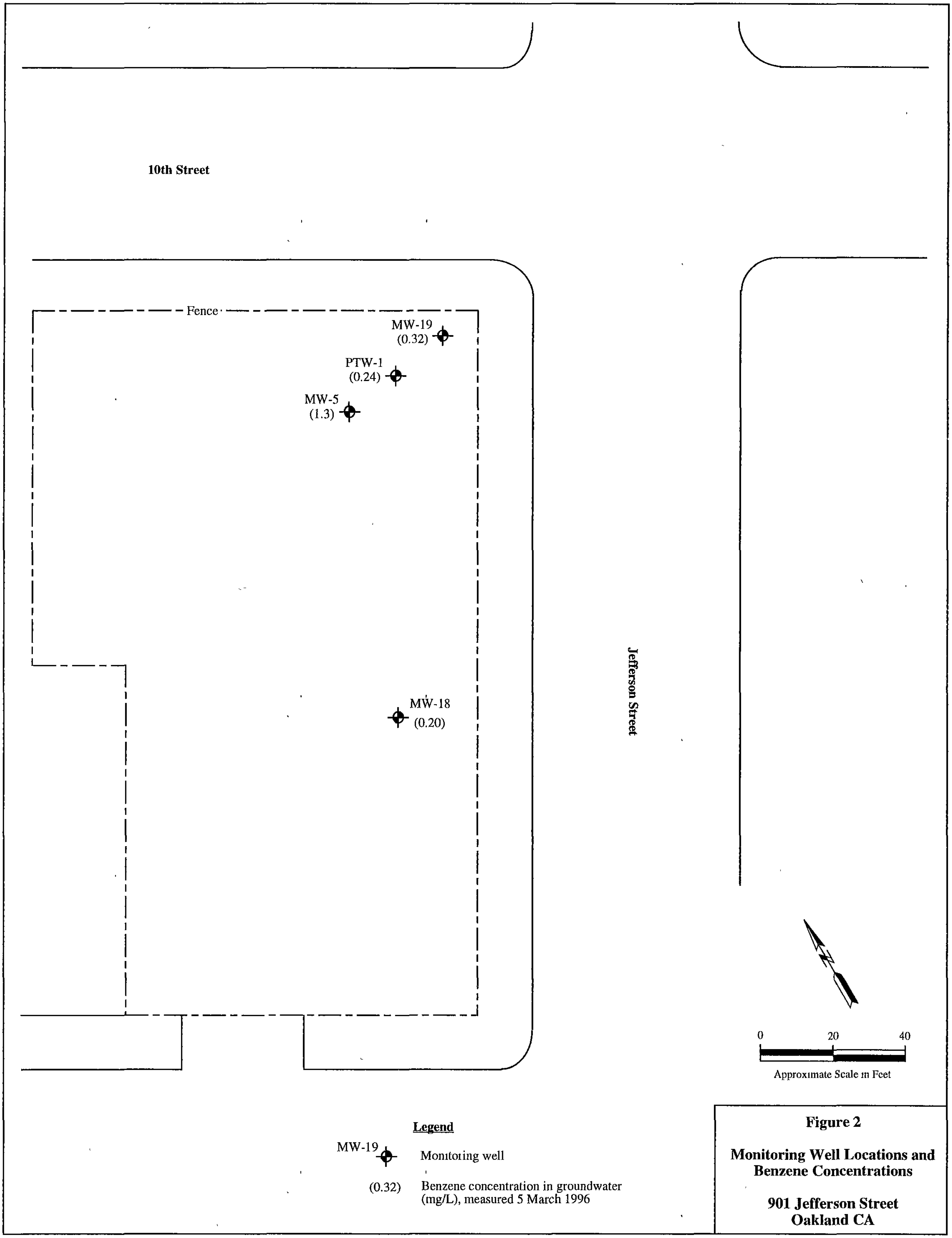


Figure 2

Monitoring Well Locations and Benzene Concentrations

901 Jefferson Street
Oakland CA

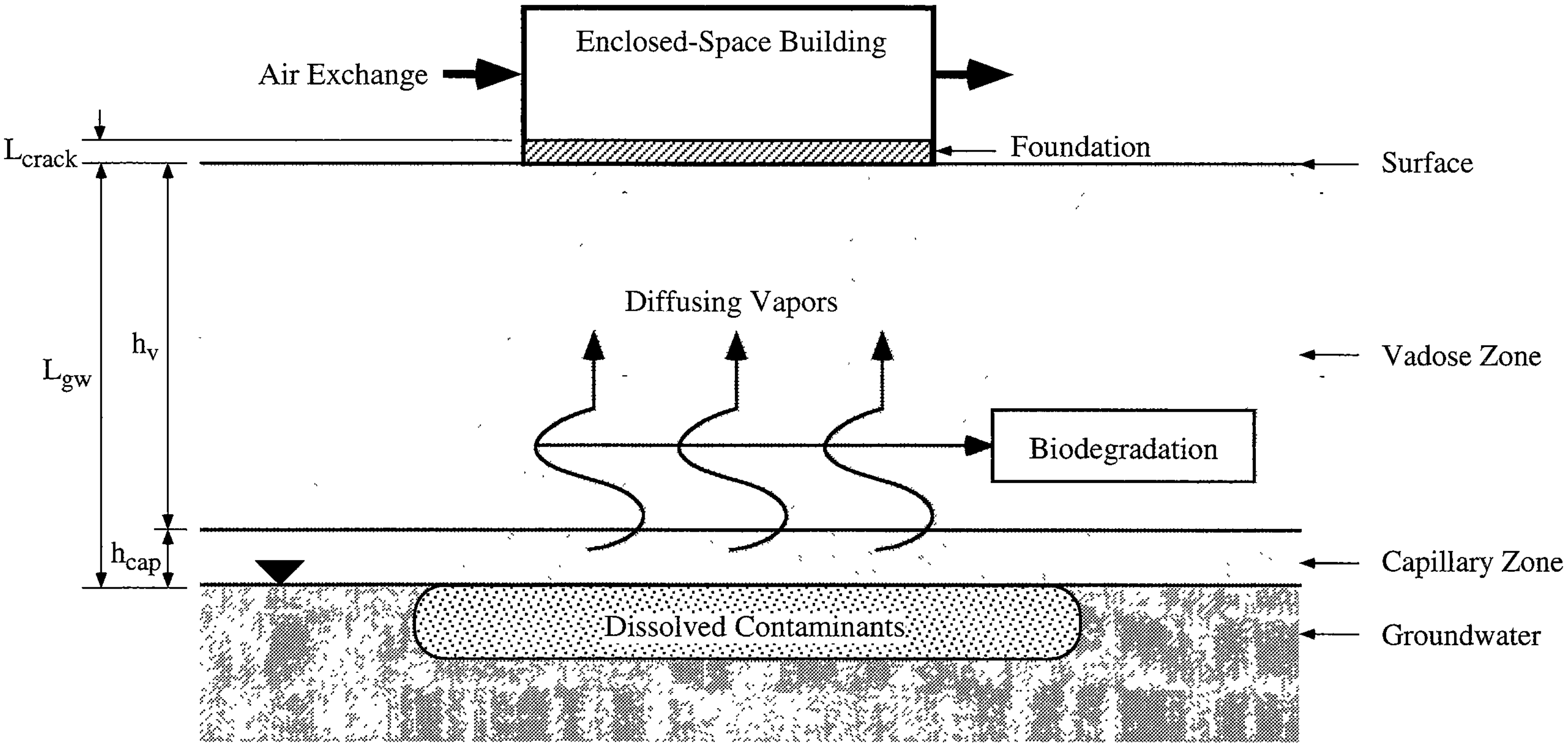


Figure 3

Conceptual Model

901 Jefferson Street
Oakland CA

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APPENDIX A

Model Equations and Calculations

APPENDIX A

MODEL EQUATIONS AND CALCULATIONS

ASTM Standard E-1739-95 presents the following equations (some of which have been rearranged to solve for the desired variables) to model exposure via inhalation of enclosed-space vapors from groundwater:

Excess Individual Lifetime Cancer Risk

$$R = \frac{C_{air} \text{ x } SF_i \text{ x } IR_{air} \text{ x } EF \text{ x } ED}{BW \text{ x } AT_c \text{ x } 365 \text{ (days/year) x } 10^3 \text{ } (\mu g/mg)}$$

where, R = Excess individual lifetime cancer risk (dimensionless)

C_{air} = Benzene concentration in air ($\mu g/m^3$)

SF_i = Inhalation cancer slope factor $(mg/kg\text{-}day)^{-1}$

IR_{air} = Daily indoor inhalation rate (m^3/day)

EF = Exposure frequency (days/year)

ED = Exposure duration (years)

BW = Adult body weight (kg)

AT_c = Averaging time for carcinogens (years)

Concentration of Benzene in Air,

$$C_{air,abiotic} = C_w \text{ x } VF_{wesp} \text{ x } 10^3 \text{ } (\mu g/mg)$$

where, $C_{air,abiotic}$ = Benzene concentration in air assuming no biodegradation ($\mu g/m^3$)

C_w = Benzene concentration in groundwater (mg/L)

VF_{wesp} = Volatilization factor for groundwater to enclosed-space vapors (L/m^3)

$$C_{air,biodeg} = C_{air,abiotic} \text{ x } [1 - (K_{deg}/100)]^{t_{dmin}}$$

where, $C_{air,biodeg}$ = Benzene concentration in air assuming biodegradation ($\mu g/m^3$)

K_{deg} = biodegradation rate (% per day)

t_{dmin} = Minimum time for vapors to travel by diffusion (days)

Volatilization Factor for Groundwater to Enclosed-Space Vapors

$$VF_{wesp} = \frac{H \text{ x } [D_{effws} / (L_{gw} \text{ x } ER \text{ x } L_b)] \text{ x } 10^3 \text{ (L/m}^3\text{)}}{1 + [D_{effws} / (L_{gw} \text{ x } ER \text{ x } L_b)] + [D_{effws} / (L_{gw} \text{ x } n \text{ x } D_{effcrack} / L_{crack})]}$$

where, H = Henry's law constant (dimensionless)

D_{effws} = Effective diffusion coefficient, groundwater to soil surface (cm^2/s)

L_{gw} = Depth to groundwater (cm)

ER = Enclosed-space air exchange rate (s^{-1})

L_b= Enclosed space volume/infiltration area ratio (cm)

n = Areal fraction of cracks in the foundation (dimensionless)

$D_{effcrack}$ = Effective diffusion coefficient through foundation cracks (cm^2/s)

L_{crack}= Enclosed-space foundation thickness (cm)

Effective Diffusion Coefficient, Groundwater to Soil Surface

$$D_{effws} = (h_{cap} + h_v) \text{ x } [(h_{cap} / D_{effcap}) + (h_v / D_{effs})]^{-1}$$

where, h_{cap} = Thickness of capillary fringe (cm)

h_v = Thickness of vadose zone (cm)

D_{effcap} = Effective diffusion coefficient through capillary fringe (cm^2/s)

D_{effs} = Effective diffusion coefficient in vadose zone soil (cm^2/s)

Effective Diffusion Coefficient in Vadose Zone Soil

$$D_{effs} = D_{air} \text{ x } (\text{Ø}_{as}^{3.33} / \text{Ø}_t^2) + [(D_{wat} / H) \text{ x } (\text{Ø}_{ws}^{3.33} / \text{Ø}_t^2)]$$

where, D_{air} = Diffusion coefficient in air (cm^2/s)

D_{wat} = Diffusion coefficient in water (cm^2/s)

Ø_{as} = Volumetric air content in vadose zone soil (dimensionless)

Ø_{ws} = Volumetric water content in vadose zone soil (dimensionless)

Ø_t = Total soil porosity (dimensionless)

Effective Diffusion Coefficient through Capillary Fringe

$$D_{effcap} = D_{air} \text{ x } (\text{Ø}_{acap}^{3.33} / \text{Ø}_t^2) + [(D_{wat} / H) \text{ x } (\text{Ø}_{wcap}^{3.33} / \text{Ø}_t^2)]$$

where, Ø_{acap} = Volumetric air content in capillary fringe (dimensionless)

Ø_{wcap} = Volumetric water content in capillary fringe (dimensionless)

Effective Diffusion Coefficient through Foundation Cracks

$$D_{effcrack} = D_{air} \text{ x } (Ø_{acrack}^{3.33} / Ø_t^2) + [(D_{wat} / H) \text{ x } (Ø_{wcrack}^{3.33} / Ø_t^2)]$$

where, $Ø_{acrack}$ = Volumetric air content in foundation cracks (dimensionless)
$Ø_{wcrack}$ = Volumetric water content in foundation cracks (dimensionless)

Minimum Time for Vapors to Travel by Diffusion (Vadose Zone)

$$t_{dmin} = h_v^2 / (D_{effs} / R_v)$$

where, R_v = Porous media retardation factor

Porous Media Retardation Factor (Vadose Zone)

$$R_v = (Ø_{ws}/H) + [(k_s \text{ x } p_s) / H] + Ø_{as}$$

where, k_s = Soil-water sorption coefficient (cm^3/gm)
p_s = Soil bulk density (gm/cm^3)

Soil-Water Sorption Coefficient

$$k_s = k_{oc} \text{ x } f_{oc}$$

where, k_{oc} = Organic carbon-water sorption coefficient (cm^3/gm)
f_{oc} = Fraction organic carbon in soil (dimensionless)

Table A-1

Calculation of Risk for Inhalation of Enclosed-Space Benzene Vapors from Groundwater

901 Jefferson Street, Oakland CA

Building Type	Commercial/Industrial			Residential		
ASTM Tier Level	Tier 1	Tier 2		Tier 1	Tier 2	
Variable Set Description	ASTM Table X2 1, "Look-up Table"	Site Specific Without Biodegradation	Site Specific With Biodegradation	ASTM Table X2 1, "Look-up Table"	Site Specific Without Biodegradation	Site Specific With Biodegradation
Calculated Variables						
R, Excess individual lifetime cancer risk (dimensionless)	1.00E-06	6 50E-06	1 71E-07	1.00E-06	2 02E-05	5.32E-07
Cair, Concentration in air within the enclosed space (µg/m3)	0.49	3 21	0 08	0.39	7.91	0 21
Deffs, Effective diffusion coefficient in vadose soil (cm2/s)	7.26E-03	7 26E-03	7 26E-03	7.26E-03	7 26E-03	7.26E-03
Deffcap, Effective diffusion coefficient in capillary soil (cm2/s)	2 17E-05	2 17E-05	2.17E-05	2 17E-05	2.17E-05	2 17E-05
Deffcrack, Effective diffusion coefficient in foundation cracks (cm2/s)	7 26E-03	7.26E-03	7.26E-03	7 26E-03	7.26E-03	7 26E-03
Deffws, Effective diffusion coefficient from gw to soil surface (cm2/s)	1.11E-03	1.56E-03	1.56E-03	1.11E-03	1.56E-03	1.56E-03
VFwesb, Volatilization factor - gw to enclosed space ((mg/m3)/(mg/L))	6.68E-03	5 18E-03	5.18E-03	1.65E-02	1.28E-02	1 28E-02
Td(min), Minimum time for vapors to travel by diffusion (days)	Not used	Not used	1,453	Not used	Not used	1,453
Rv, Porous media retardation factor in vadose soil (dimensionless)	Not used	Not used	2 27	Not used	Not used	2.27
Chemical Specific Variables						
Cw, average groundwater concentration (mg/L)	7.39E-02	**0.62**	**0.62**	2.38E-02	**0.62**	**0.62**
H, Henry's law constant (dimensionless)	0.22	0.22	0 22	0.22	0 22	0.22
Dair, Diffusion coefficient in air (cm2/s)	0 093	0.093	0.093	0 093	0.093	0.093
Dwat, Diffusion coefficient in water (cm2/s)	1.10E-05	1 10E-05	1 10E-05	1 10E-05	1.10E-05	1.10E-05
Koc, Organic carbon-water sorption coefficient (cm3/gm)	Not used	Not used	**38**	Not used	Not used	**38**
Ks, Soil-water sorption coefficient (cm3/gm)	Not used	Not used	**0.19**	Not used	Not used	**0.19**
kdeg, Chemical degradation rate, first-order (%/day)	Not used	Not used	**0.25**	Not used	Not used	**0.25**
Subsurface Variables (based on soil of fine sand texture)						
Øt, Total soil porosity (dimensionless)	0 38	0 38	0 38	0.38	0.38	0 38
Øas, Volumetric air content in vadose soil (dimensionless)	0.26	0.26	0 26	0.26	0 26	0.26
Øws, Volumetric water content in vadose soil (dimensionless)	0 12	0.12	0.12	0 12	0.12	0 12
Øacap, Volumetric air content in capillary soil (dimensionless)	0 038	0.038	0.038	0 038	0.038	0.038
Øwcap, Volumetric water content in capillary soil (dimensionless)	0 342	0.342	0 342	0.342	0 342	0.342
hv, Thickness of vadose zone soil (cm)	295	633	633	295	633	633
hcap, Thickness of capillary zone soil (cm)	5	**7**	**7**	5	**7**	**7**
Lgw, Depth to groundwater (cm)	300	**640**	**640**	300	**640**	**640**
ps, Soil bulk density (gm/cm3)	Not used	Not used	**1.7**	Not used	Not used	**1.7**
foc, Fraction of organic carbon in soil (dimensionless)	Not used	Not used	**0.005**	Not used	Not used	**0.005**
Building Variables						
Øacrack, Volumetric air content in foundation cracks (dimensionless)	0 26	0.26	0 26	0 26	0 26	0.26
Øwcrack, Volumetric water content in foundation cracks (dimensionless)	0 12	0.12	0 12	0 12	0 12	0.12
Lcrack, Thickness of enclosed space foundation (cm)	15	15	15	15	15	15
n, Areal fraction of cracks in foundation (dimensionless)	0.01	0.01	0.01	0.01	0.01	0.01
ER, Enclosed space air exchange rate (s-1)	2 30E-04	2.30E-04	2.30E-04	1 40E-04	1.40E-04	1.40E-04
Lb, Enclosed space volume/infiltration area ratio (cm)	300	300	300	200	200	200
Exposure Variables						
BW, Adult body weight (kg)	70	70	70	70	70	70
ATc, Averaging time for carcinogens (years)	70	70	70	70	70	70
SFi, Inhalation cancer slope factor for benzene (kg-days/mg)	0.029	0.029	0.029	0.029	0.029	0 029
IRair, Daily indoor inhalation rate (m3/day)	20	20	20	15	15	15
ED, Exposure duration (years)	25	25	25	30	30	30
EF, Exposure frequency (days/year)	250	250	250	350	350	350

General Note

(a) Variables in bold type are site specific (Tier 2) which differ from those used to develop ASTM Table X2 1(Look-up Table)

Woodward-Clyde Consultants

HYDROCARBON INVESTIGATION
9TH AND JEFFERSON STREETS
OAKLAND, CALIFORNIA

Prepared for

Crosby, Heafey, Roach & May
1999 Harrison Street
Oakland, California 94612

JUNE 1990

Prepared by

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500 12th Street, Suite 100
Oakland, CA 94607-4014

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(415) 893-3600

Woodward-Clyde Consultants

June 5, 1990

Project No.: 8910084A

Mr. Norman Tuttle II
Crosby, Heafey, Roach & May
1999 Harrison Street
Oakland, California 94612

Subject: Hydrocarbon Investigation
9th and Jefferson Streets
Oakland, California

Dear Mr. Tuttle:

We are pleased to transmit our interim report for the above project. This report describes the initial phases of a continuing investigation. A second report describing the results of recent, off-site exploration is now being prepared and will be sent shortly. Please feel free to call me if you have any questions.

Yours very truly,

WOODWARD-CLYDE CONSULTANTS

George A. Ford

George A. Ford
Senior Project Geologist

8910084RPT/COT

HYDROCARBON INVESTIGATION
9TH AND JEFFERSON STREETS
OAKLAND, CALIFORNIA

TABLE OF CONTENTS

HYDROCARBON INVESTIGATION
9TH AND JEFFERSON STREETS
OAKLAND, CALIFORNIA

INTRODUCTION

This report presents the results of a petroleum hydrocarbon assessment of the parcel located on the west side of Jefferson Street between 9th and 10th Streets in Oakland, California. Woodward-Clyde Consultants (WCC) has performed this assessment in accordance with our proposal dated July 14, 1989. Work previously completed for this project has included:

1) Compilation and review of information on historical uses of the site, review of published regulatory listings of fuel leaks and other releases of hazardous materials in the area, and development of a sampling program.

2) Installation of five, 30-foot-deep soil borings and one monitoring well.

3) Laboratory analysis for petroleum hydrocarbons and organic solvents in soil and groundwater samples.

These investigations indicate the following:

1) Historical maps and aerial photographs indicate that gasoline and oil were dispensed on the site as well as from a parcel located immediately south of the site. The gas station on the site was demolished over 30 years ago.

2) TPH as gasoline was identified at a concentration of 220 ppm in a composite soil sample from soil boring 4, as shown on Figure 1.

3) In the groundwater sample from monitoring well MW-5, TPH as gasoline was identified at a concentration of 24 ppm, benzene at 7.5 to 8.1 ppm, toluene at 0.22 ppm, ethylbenzene at 0.89 to 0.99 ppm, and xylenes at 0.46 to 0.73 ppm. No floating product was observed in the groundwater samples.

Based on these results, WCC recommended the installation of additional soil borings and monitoring wells and analysis of additional soil and groundwater samples to more fully characterize the vertical and lateral extent and concentration of gasoline in the soil and groundwater. This additional work is discussed in this report, along with a recommended soil and groundwater remediation plan.

SOIL AND GROUNDWATER SAMPLING

Soil borings were drilled at 11 locations on the site on August 4 and 7, 1989, using a 6-inch outside-diameter solid-stem auger. Two monitoring wells were installed on August 7, 1989, using an 8-inch outside-diameter hollow-stem auger. Locations of soil borings and monitoring wells, including the locations of previous WCC borings and wells, are shown on Figure 1. The locations of soil borings were selected to focus on the area of soil containing TPH as gasoline identified in the initial phase of investigation. Monitoring wells were located to evaluate the groundwater flow direction and provide information on the extent of groundwater contamination.

Soil samples for chemical analysis were obtained at selected depths within each boring using a 2-inch inside-diameter drive sampler. Samples were obtained at 5-foot intervals in borings where a gasoline odor was detected, or where organic vapors were detected by a headspace test. The headspace test involves placing soil into a plastic "zip-lock" bag and analyzing vapors by inserting a photo-ionization probe into the bag. Logs of the borings showing the depth of soil samples and results of the headspace analyses are included in Appendix A. The soil samples were retained in brass sample liners capped with Teflon sheeting and plastic end caps. The soil sampler was cleaned between each sample and between borings by washing in an Alconox detergent and tap water solution followed by a tap water rinse. Soil samples were immediately placed in ice chests for transport to Sequoia Analytical Laboratories in Redwood City, California, under chain-of-custody control. Following drilling, the borings were backfilled to the ground surface using a cement-bentonite grout, in accordance with Alameda County - Zone 7 requirements. Excess soil cuttings were placed in drums for storage on-site, and later disposal.

Two additional monitoring wells were installed on the site. MW-19 was placed at the northeast corner of the site near the intersection of Jefferson and 10th Streets. MW-18 was placed near the southern extent of the area where a gasoline odor was detected in soil samples (Figure 1). No wells were placed in the sidewalk because overhead wires obstructed access for the drill rig. The wells were constructed using a 2-inch-diameter well casing and machine-slotted, 0.020-inch aperture well screen. The screened interval extends from approximately 24 feet to 31 feet below ground surface. The screened and sand-packed interval of the wells is sealed from the surface by a 2-foot-thick bentonite seal at a depth of approximately 21 feet and cement-bentonite grout extending to the ground surface. The well collar includes a locking cap located beneath a flush-mounted steel hole cover. A schematic drawing of the well construction is shown on the boring logs for the respective wells in Appendix A.

Groundwater levels were recorded in each boring at the time of drilling (see logs in Appendix A). The static water level in all monitoring wells was also measured on August 14, 1989 (Appendix A), prior to purging and groundwater sampling. Groundwater occurred at about 25 feet below ground surface, near elevation 8 feet, based on the City of Oakland Datum (C.O.O.D.). The measured water levels indicate a gradient towards the west as shown on Figure 1. The two new wells were developed and purged by pumping with a suction pump until the discharged water became clear and the temperature, pH, and specific conductance measurements stabilized. No hydrocarbon sheen or floating product was noted on the groundwater. Discharged water was placed in drums and stored on site for later disposal. Each of three groundwater samples was obtained with a Teflon bailer and immediately placed in three 40 ml sample bottles. The bottles were placed in an ice chest and transported to Sequoia Analytical Laboratories under chain-of-custody control. Copies of the chain-of-custody forms and analytical results are shown in Appendix B.

LABORATORY TESTING

Discrete soil samples from soil borings in which a gasoline odor was detected and groundwater samples from all three monitoring wells were analyzed for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 5030/8015/8020. The groundwater sample from MW-5 was also analyzed for volatile organics by EPA Method 624. Analyses were limited to these compounds based on results of previous analyses in which lead was not found to occur above background levels and no volatile organics were identified at concentrations exceeding detection limits in the tested soil samples.

The results of the laboratory analysis of soil and groundwater samples are shown in Appendix B. The results of the soil analysis may be summarized as follows:

1) TPH as gasoline was detected in soil at concentrations of 1500 ppm at a depth of 25 feet in boring 17 and 1400 ppm at a depth of 26 feet in boring 14 near the northeast corner of the site. TPH at concentrations of 150 ppm and 370 ppm occurred in soil at a depth of 30 feet in borings 10 and 8, respectively, along the northern end of the eastern side of the site bordering Jefferson Street. A

composite soil sample including soil from depths of 5 to 25 feet from boring 4 in this same area showed 220 ppm TPH in the previous study. TPH as gasoline occurred in soil at concentrations of less than 5 ppm in borings MW-19, 12, and 15 on the perimeter of the area occupied by the above soil borings.

2) Benzene was detected in soil at concentrations of 0.32 ppm at a depth of 30 feet in boring 12 and 0.68 ppm at a depth of 30 feet in monitoring well 19. Toluene occurred in soil samples from five borings at concentrations of 0.20 to 6.0 ppm. Ethylbenzene and xylenes occurred in soil from six borings at 0.36 to 37 ppm and 0.53 to 99 ppm, respectively.

The results of the analysis of the groundwater samples from the monitoring wells may be summarized as follows:

1) TPH as gasoline was identified at a concentration of 19 ppm, 7.6 ppm, and 26 ppm in groundwater samples from monitoring wells MW-5, MW-18, and MW-19, respectively.

2) Benzene was identified at a concentration of 5.4 ppm in MW-5, 0.16 ppm in MW-18 and 4.3 ppm in MW-19. Toluene occurred at concentrations ranging from 0.021 to 0.69 ppm, ethylbenzene at 0.21 to 0.98 ppm, and xylenes at 0.014 to 2.6 ppm in groundwater samples from the three wells.

3) Other than the BTEX compounds noted above, no other volatile organic compounds were detected above detection limits in the groundwater sample from MW-5. Acetone, detected at a concentration of 2.1 ppm in a sample collected from MW-5 in the initial phase of the investigation, was not detected in a second sample taken from the same well.

Soil and groundwater analytical results are summarized in Table 1.

DISCUSSION

Pattern of Occurrence - The analytical data suggests that TPH as gasoline occurs in a layer of soil extending vertically from approximately 22 feet to at least 30 feet below ground surface and horizontally from the northeast corner of the site near the intersection of Jefferson and 10th Streets to approximately 120 feet south along Jefferson Street and 40 to 50 feet west of Jefferson Street. Concentrations rapidly decrease from 1500 ppm TPH at the corner of the site to a nondetectable concentration towards the west and south. Although it has not been confirmed by soil testing, it seems likely that TPH occurs in soil beneath the sidewalks and possibly beneath adjacent parts of Jefferson Street.

During the initial phase of investigation, it was assumed that the local groundwater flow direction was either to the north or south, based on work done at other sites in the area. However, recent measurements made in the three wells indicate that the groundwater flow direction (Figure 1) is west to northwest (Appendix A). The groundwater elevation falls about 0.19 feet westward from well MW-19 to well MW-5. This variation may be due to the proximity of the site to Interstate 980, located about two blocks to the west. The excavation for the below-grade interstate is believed to depress the local water table, causing a shift to a more westerly flow direction in the nearby surrounding area.

The pattern of occurrence of hydrocarbons in the soil and groundwater suggests that the source of contaminants is a leak from an underground tank located near or under the northeast corner of the site, or possibly offsite to the northeast. This is consistent with historical data, which show a small service station near the northeast corner of the site. No evidence of a tank, such as backfill, was found onsite. We believe that the soil borings would likely have encountered an existing tank on site considering the relatively close spacing of the borings. There are several possible alternatives to an onsite tank including the following: 1) a tank may be located under the sidewalk near the corner of the site, 2) the leak may have occurred offsite, or 3) the leak may have occurred prior to removal of the tank from the site during or after demolition of the service station in circa 1958-1959.

The limited groundwater data collected in this study is not sufficient to evaluate the lateral or vertical extent of the plume of petroleum contamination in the groundwater. Because no free product (liquid-phase gasoline) was found during sampling of the three monitoring wells, it is unlikely that significant free product exists on the groundwater surface in the vicinity of those wells. The petroleum hydrocarbons appear to occur as dissolved constituents in the groundwater and in a layer of contaminated soil located in the zone of groundwater surface fluctuation.

Regulatory Considerations - Based on published guidelines and our recent work in downtown Oakland, we expect that the Alameda County Department of Environmental Health, Hazardous Materials Division, and the San Francisco Bay Regional Water Quality Control Board (RWQCB) will require: 1) remediation of soil TPH concentrations exceeding 1000 ppm and 2) groundwater remediation to reduce BTEX concentrations from approximately 10 ppm (total) to concentrations of 0.5 ppm or less. The specific soil and groundwater standards to be met would be established through consultation and negotiation with the County and RWQCB.

Soil Remediation - Preliminary calculations based on soil analytical data indicate the volume of soil on-site containing concentrations of TPH greater than 100 ppm is approximately 400 cubic yards. The volume of clean overlying soil which must be removed to expose or remove this soil is approximately 4000 cubic yards. Excavation would require a pit approximately 25 to 30 feet deep encompassing about half of 10th and Jefferson Streets near the intersection. Utilities under the streets might need to be temporarily rerouted in the remaining street during the operation. Closure of the street intersection may be required if significant contamination is found in soil beneath the streets. Additional fill material would be needed to replace soil hauled from the excavation. Repairs to the streets, sidewalks, utility lines and poles, and the parking lot would then be required. Based on our recent experience with similar projects, we estimate that such an excavation program would cost in the range of $300,000 to $400,000 and would take the existing parking lot out of service for at least four months.

A more cost-effective alternative to excavation of the soil would be installation of a vapor extraction system (VES). The VES functions by applying a vacuum to a well, which, in turn, extracts air and vapors from the soil pore spaces and also stimulates bacterial activity which may help reduce hydrocarbon concentrations in the soil. Hydrocarbons in the soil will continue to volatilize and be removed by the VES until little or no volatiles remain. Because volatiles are also the most soluble component of petroleum products, the potential for continuing groundwater contamination is reduced significantly. Prior to installation of the system, a vapor extraction test would be conducted using portable equipment to evaluate the effectiveness of the system at the site. If the test proves successful, a long-term system could then be installed.

The vapor extraction test and VES would require the installation of about two additional wells designed for this application. The VES components would consist of a blower (vacuum source), controls, water knockout, silencer, stack, emission control devices and various gauges which can all be located in a cage to be constructed at the northeast corner of the site. Once the system is in operation, samples of the effluent would be initially taken on a weekly basis to assess the recovery performance of the system. After the first month, the sampling would be reduced to once a month until concentrations in the effluent decrease to negligible levels requiring an estimated period of approximately six months to one year. At this point, several soil borings would be advanced in the surrounding soil to confirm the effectiveness of the system. Water samples from the wells would be taken periodically to monitor possible changes in hydrocarbon concentrations in the groundwater.

Groundwater Remediation - Groundwater remediation will probably be required by regulatory agencies to reduce BTEX concentrations in groundwater to acceptable levels. The steps involved in groundwater cleanup include 1) estimating the limits of the plume of contamination, 2) designing and installing a groundwater extraction and treatment system, and 3) pumping and treating the groundwater until the cleanup standard (agreed upon with regulatory agencies) is substantially achieved.

Because there appears to be no detected free product on the water surface based on sampling of the three wells, a single-phase recovery system is judged to be adequate for extraction of groundwater. The system functions by lowering the water table in the immediate vicinity of the well, thus creating a local cone of depression. The groundwater and dissolved hydrocarbons within the area of influence will migrate toward the recovery well and be removed by the extraction well. The groundwater will be pumped first to a holding tank and then through a pair of activated carbon filters to remove the dissolved hydrocarbons before being discharged into the sanitary sewer system. The system will require an additional recovery well and will incorporate a series of controls and switches to regulate pumping rates and prevent tank overfilling, a water table pump, water tanks, treatment equipment, an air compressor, and associated wiring and hoses.

Prior to installation of the system, a pump test would be conducted in the newly installed recovery well and one or two existing wells to evaluate various physical parameters of the local hydrogeological regime. The data acquired from these tests would be used to estimate recovery system pumping rates, area of influence, and the rate of groundwater movement.

The latter will also provide some insight into the migration potential of the dissolved hydrocarbons and the distance that they may have migrated offsite.

The proposed groundwater treatment program will require a permit from EBMUD for discharging the treated water to the sanitary sewer system. The permit will probably stipulate that samples of the discharge water be taken periodically to ensure that BTEX-component effluent limitations are not exceeded. The frequency for long-term sampling is assumed to be once per month. Other operating costs would include a system check and well monitoring once a week. Water samples may also be taken and analyzed periodically to chart the decrease in hydrocarbon levels over time.

The effectiveness of the proposed methods, and therefore the associated costs, are based on several assumptions concerning ambient subsurface conditions at the site. Should these conditions vary significantly from those assumed, our remedial recommendations may change. These costs also assume that no significant problems are encountered during well or system installation and that sampling frequencies required by the agencies will not exceed those assumed in our cost estimates. These costs also do not include the disposal of contaminated cuttings or fluids that may be generated during well installation or other activities conducted during remediation.

CONCLUSIONS AND RECOMMENDATIONS

Based on soil and groundwater sampling and analysis performed for this study, we conclude:

1) TPH as gasoline occurs in concentrations greater than 1000 ppm in the northeast corner of the site and in concentrations greater than 100 ppm in a layer of soil approximately 25 feet below the surface, covering approximately 3000 ft^2, and averaging approximately 4 feet thick.

2) The pattern of occurrence of TPH in the soil and groundwater appears to be consistent with a leak from underground tank(s) formerly located near the northeast corner of the site.

3) We believe that some soil and groundwater remediation will be required by Alameda County and the RWQCB considering the relatively high concentrations of petroleum hydrocarbons in the soil and groundwater. The extent of effort required may only be established by negotiation with the ACHSA and/or RWQCB.

Based on these conclusions, WCC recommends 1) negotiation with regulatory agencies to established the level of cleanup required; and 2) off-site exploration to characterize the extent of hydrocarbons in soil adjacent to the site. Cleanup operations may be undertaken after we have received preliminary approval from the agencies regarding the proposed program.

In regards to soil remediation, vapor extraction appears to be a preferable alternative to soil excavation and removal since the costs are substantially lower and the relatively unobtrusive nature of the installation and operation of a VES. Both systems proposed for cleanup of the soil and groundwater may be installed and operated before, during or after the sale and development of the parcel.

WCC will assist you with regulatory agency contacts and negotiation and developing a work plan to undertake the various aspects of soil and groundwater remediation.

LIMITATIONS

This report was prepared in general accordance with the accepted standard of practice which exists in central California at the time the investigation was performed. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface conditions present. More extensive studies including additional subsurface investigation can tend to reduce the inherent uncertainties associated with inferring subsurface conditions.

HYDROCARBON INVESTIGATION
9TH & JEFFERSON STREETS

Table 1a. ANALYTICAL RESULTS FOR SOIL[1]

Boring	Sample #	Date	TPH[2]	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Lead	Volatile Organics
1	1-1, 1-2, 1-3, 1-4	4-19-89	ND	ND	ND	ND	ND	3.1	ND
2	2-1, 2-2, 2-3, 2-4	4-19-89	ND	ND	ND	ND	ND	2.6	ND
3	3-1, 3-2, 3-3, 3-4	4-19-89	ND	ND	ND	ND	ND	2.9	ND
4	4-1, 4-2, 4-3, 4-4	4-19-89	220	<0.25	<0.5	<0.5	<0.5	2.5	ND
5	5-1, 5-2, 5-3, 5-4	4-19-89	ND	ND	ND	ND	ND	2.2	ND
6	6-1, 6-2, 6-3	4-19-89	ND	ND	ND	ND	ND	2.7	ND
8	8-3	8-4-89	370	ND	1.1	6.5	12		
10	10-2	8-4-89	150	ND	0.20	1.9	6.4		
	10-3	8-4-89	150	ND	0.40	2.8	5.4		
12	12-3	8-4-89	3.0	0.32	ND	ND	ND		
14	14-1	8-4-89	ND	ND	ND	ND	ND		
	14-2	8-4-89	1400	ND	5.0	37	64		
15	15-2	8-7-89	2.0	ND	ND	ND	ND		
17	17-1	8-4-89	ND	ND	ND	ND	ND		
	17-2	8-4-89	1500	ND	6.0	32	99		
MW19	MW19-1	8-7-89	4.4	0.68	ND	0.36	0.53		
Detection Limits		1.0	0.05	0.1	0.1	0.1			

---

[1] All results reported as parts per million (ppm)

[2] Low/medium boiling point hydrocarbons - Total Petroleum Hydrocarbons (TPH)

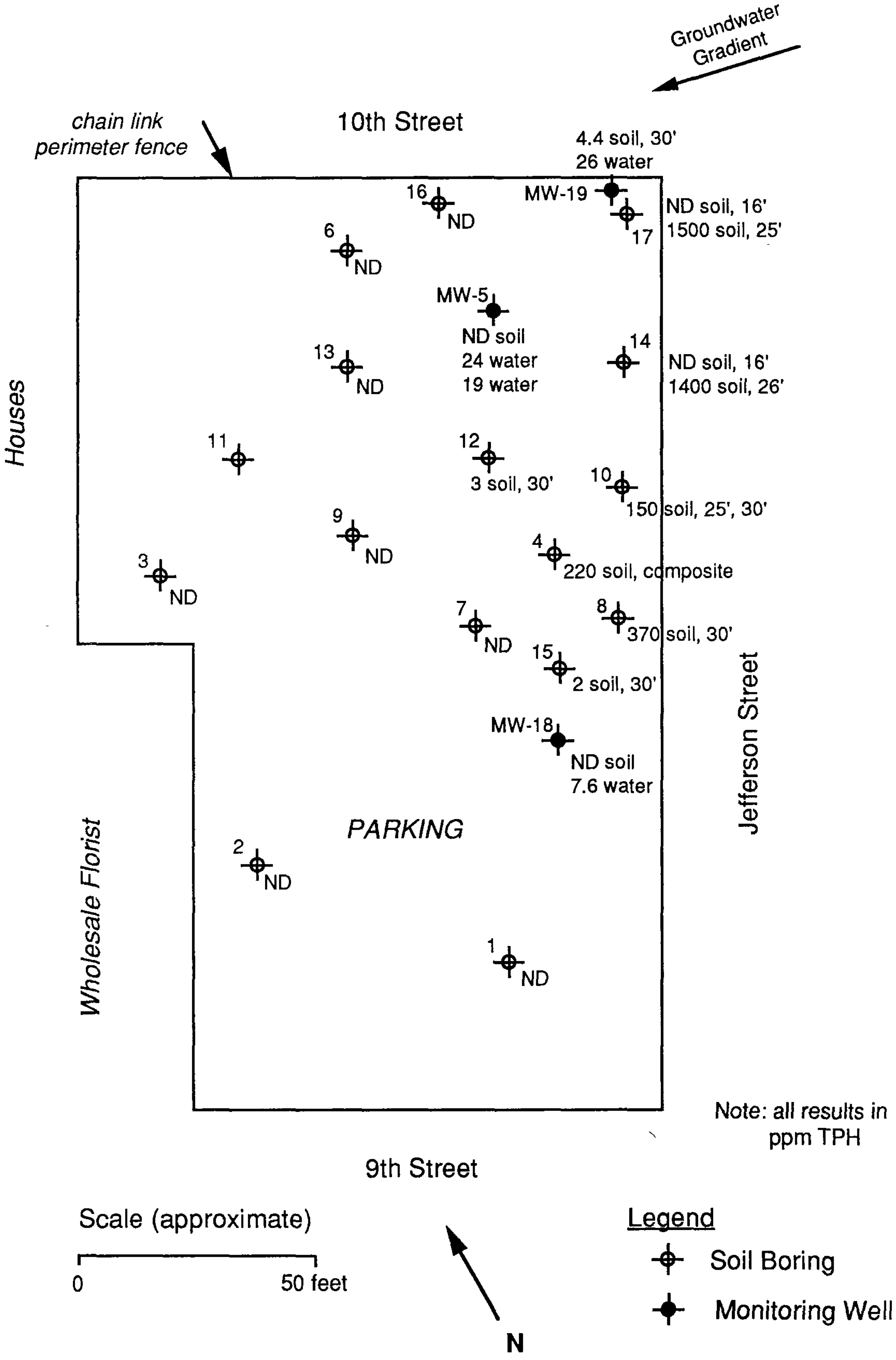
HYDROCARBON INVESTIGATION
9TH & JEFFERSON STREETS

Table 1b. ANALYTICAL RESULTS FOR WATER[1]

Well	Date	TPH[2]	Benzene	Toluene	Ethyl Benzene	Xylene	Volatile Organics[3]
MW-5	4-24-89	24.0	7.5	0.22	0.99	0.73	acetone-2.1
MW-5	8-14-89	19.0	5.4	0.21	0.77	0.44	ND
MW-18	8-14-89	7.6	0.16	0.021	0.21	0.014	
MW-19	8-14-89	26.0	4.3	0.69	0.98	2.6	
Detection Limits	0.030	0.0003	0.0003	0.0003	0.0003		

---

[1] All results reported as parts per million (ppm)
[2] Low/medium boiling point hydrocarbons - Total Petroleum Hydrocarbons (TPH)
[3] Other than benzene, toluene, ethyl benzene, and xylene



Note: all results in ppm TPH

Project No. 8910084A	9th and Jefferson EA	9th and Jefferson Site Map	Figure 1
Woodward-Clyde Consultants			

APPENDIX B

CHEMICAL ANALYTICAL RESULTS
CHAIN-OF-CUSTODY FORMS
WATER SAMPLING RECORDS

Woodward-Clyde Consultants

500 12th Street, Suite 100, Oakland, CA 94607-4041
(415) 893-3600

Chain of Custody Record

PROJECT NO. 8910084A - PHS2

SAMPLERS: (Signature)

DATE	TIME	SAMPLE NUMBER	General Mineral	Priority Pollutant Metals	EPA Method 624	EPA Method 625	EPA Method 608	TOTAL LEAD	TPH	BETX	8240	Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
4-20-89		1-1										1	
		1-2 } COMPOSITE										1	
		1-3										1	
		1-4										1	
		1-5 - HOLD										1	
		1-6 - HOLD										1	
		2-1										1	
		2-2 } COMPOSITE										1	
		2-3										1	
		2-4										1	
		2-5 - HOLD										1	
		2-6 - HOLD										1	
4-19		3-1										1	
		3-2 } COMPOSITE										1	
		3-3										1	
		3-4										1	
		3-5 - HOLD										1	← *
		3-6 - HOLD										1	← *
4-20		4-1										1	
		4-2 } COMPOSITE										1	
		4-3										1	
		4-4										1	
		4-5 - HOLD										1	
		4-6 - HOLD										1	

* used split spoon sampler, sample tube packed by hand

TOTAL NUMBER OF CONTAINERS 24

RELINQUISHED BY : (Signature)	DATE/TIME	RECEIVED BY : (Signature)	RELINQUISHED BY : (Signature)	DATE/TIME	RECEIVED BY : (Signature)

METHOD OF SHIPMENT :	SHIPPED BY : (Signature)	COURIER : (Signature)	RECEIVED FOR LAB BY : (Signature)	DATE/TIME

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4041
(415) 893-3600

Chain of Custody Record

PROJECT NO. 8910084A - PHS2

SAMPLERS: (Signature)

DATE	TIME	SAMPLE NUMBER	General Mineral	Priority Pollutant Metals	EPA Method 624	EPA Method 625	EPA Method 608	TOTAL LEAD	TPH	BETX	8240			Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
4-21		5-1												1	
		5-2												1	
		5-3 } COMPOSITE												1	
		5-4												1	
		5-5 - HOLD												1	
4-19		5-6 - HOLD												1	
		6-1												1	
		6-2 } COMPOSITE												1	
		6-3												1	
		6-6 - HOLD												1	← *

* used split spoon sampler, sample tube packed by hand

TOTAL NUMBER OF CONTAINERS 10

RELINQUISHED BY : (Signature)	DATE/TIME	RECEIVED BY : (Signature)	RELINQUISHED BY : (Signature)	DATE/TIME	RECEIVED BY : (Signature)

METHOD OF SHIPMENT :	SHIPPED BY : (Signature)	COURIER : (Signature)	RECEIVED FOR LAB BY : (Signature)	DATE/TIME

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4041
(415) 893-3600

Chain of Custody Record

PROJECT NO. 8910084A-PHS2

SAMPLERS; (Signature)

DATE	TIME	SAMPLE NUMBER	General Mineral	Priority Pollutant Metals	EPA Method 624	EPA Method 625	EPA Method 608	TPH	BETX					Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
4-24-89	4:30	MW5-1			X			X	X					2	
	4:35	MW5-2												2	← HOLD

Call George Ford 874-3203 with questions

5-day turn-around on TPH/BTEX

Normal turnaround on 624

TOTAL NUMBER OF CONTAINERS 4

RELINQUISHED BY : (Signature)	DATE/TIME	RECEIVED BY : (Signature)	RELINQUISHED BY : (Signature)	DATE/TIME	RECEIVED BY : (Signature)

METHOD OF SHIPMENT :	SHIPPED BY : (Signature)	COURIER : (Signature)	RECEIVED FOR LAB BY : (Signature)	DATE/TIME

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PHS2
Sample Descript: Soil Composite
Analysis for: Total Lead
First Sample #: 904-2648 A - D

Sampled: Apr 19-20, 1989
Received: Apr 25, 1989
Extracted: May 5, 1989
Analyzed: May 7, 1989
Reported: May 20, 1989

LABORATORY ANALYSIS FOR: Total Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
904-2648	1-1, 1-2, 1-3, 1-4	0.05	3.1
904-2649	2-1, 2-2, 2-3, 2-4	0.05	2.6
904-2650	3-1, 3-2, 3-3, 3-4	0.05	2.9
904-2651	4-1, 4-2, 4-3, 4-4,	0.05	2.5
904-2652	5-1, 5-2, 5-3, 5-4	0.05	2.2
904-2653	6-1, 6-2, 6-3	0.05	2.7

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

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PHS2
Matrix Descript: Soil Composite
Analysis Method: EPA 5030/8015/8020
First Sample #: 904-2648 A - D

Sampled: Apr 19-21, 1989
Received: Apr 25, 1989
Analyzed: May 5, 1989
Reported: May 20, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
904-2648	1-1, 1-2, 1-3, 1-4	N.D.	N.D.	N.D.	N.D.	N.D.
904-2649	2-1, 2-2, 2-3, 2-4	N.D.	N.D.	N.D.	N.D.	N.D.
904-2650	3-1, 3-2, 3-3, 3-4	N.D.	N.D.	N.D.	N.D.	N.D.
904-2651	4-1, 4-2, 4-3, 4-4,	220	< 0.25	< 0.5	< 0.5	< 0.5
904-2652	5-1, 5-2, 5-3, 5-4	N.D.	N.D.	N.D.	N.D.	N.D.
904-2653	6-1, 6-2, 6-3	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**1.0**	**0.05**	**0.1**	**0.1**	**0.1**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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(415) 364-9600 • FAX (415) 364-9233

Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PHS2

QC Sample Group: 9042648 - 53

Reported: May 20, 1989

QUALITY CONTROL DATA REPORT

ANALYTE	Total Lead	Xylenes
Method:	EPA 7421	EPA 8020
Analyst:	K. Anderson	A. Miraftab
Reporting Units:	mg/L	ppm
Date Analyzed:	May 7, 1989	May 5, 1989
QC Sample #:	904-2649	9042468
Sample Conc.:	0.013	0.0
Spike Conc. Added:	0.05	15.0
Conc. Matrix Spike:	0.064	13.0
% Recovery:	102.0	87.0
Conc. Matrix Spike Dup.:	0.065	14.0
% Recovery:	104.0	93.0
% Deviation:	0.78	3.7

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PHS2
Sample Descript: Soil Composite, 1-1 to 1-4
Analysis Method: EPA 8240
Lab Number: 904-2648 A - D

Sampled: Apr 19-21, 1989
Received: Apr 25, 1989
Analyzed: May 4, 1989
Reported: May 20, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	**Detection Limit µg/kg**	**Sample Results µg/kg**
Acetone	500.0	N.D.
Benzene	100.0	N.D.
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	N.D.
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	N.D.
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	100.0	N.D.
1,1,1-Trichloroethane	100.0	N.D.
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	100.0	N.D.

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

SEQUOIA ANALYTICAL

Arthur G. Burton
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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PHS2
Sample Descript: Soil Composite, 2-1 to 2-4
Analysis Method: EPA 8240
Lab Number: 904-2649 A - D

Sampled: Apr 19-21, 1989
Received: Apr 25, 1989
Analyzed: May 4, 1989
Reported: May 20, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	500.0	N.D.
Benzene	100.0	N.D.
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	N.D.
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	N.D.
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	100.0	N.D.
1,1,1-Trichloroethane	100.0	N.D.
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	100.0	N.D.

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

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

SEQUOIA ANALYTICAL
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(415) 364-9600 • FAX (415) 364-9233

Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PHS2
Sample Descript: Soil Composite, 3-1 to 3-4
Analysis Method: EPA 8240
Lab Number: 904-2650 A - D

Sampled: Apr 19-21, 1989
Received: Apr 25, 1989
Analyzed: May 4, 1989
Reported: May 20, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	500.0	N.D.
Benzene	100.0	N.D.
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	N.D.
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	N.D.
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	100.0	N.D.
1,1,1-Trichloroethane	100.0	N.D.
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	100.0	N.D.

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

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Laboratory Director

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PHS2
Sample Descript: Soil Composite, 4-1 to 4-4
Analysis Method: EPA 8240
Lab Number: 904-2651 A - D

Sampled: Apr 19-21, 1989
Received: Apr 25, 1989
Analyzed: May 4, 1989
Reported: May 20, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	**Detection Limit** µg/kg	**Sample Results** µg/kg
Acetone	500.0	N.D.
Benzene	100.0	N.D.
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	N.D.
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	N.D.
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	100.0	N.D.
1,1,1-Trichloroethane	100.0	N.D.
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	100.0	N.D.

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

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Laboratory Director

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PHS2
Sample Descript: Soil Composite, 5-1 to 5-4
Analysis Method: EPA 8240
Lab Number: 904-2652

Sampled: Apr 19-21, 1989
Received: Apr 25, 1989
Analyzed: May 4, 1989
Reported: May 20, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	**Detection Limit µg/kg**	**Sample Results µg/kg**
Acetone	500.0	N.D.
Benzene	100.0	N.D.
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	N.D.
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	N.D.
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	100.0	N.D.
1,1,1-Trichloroethane	100.0	N.D.
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	100.0	N.D.

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

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PHS2
Sample Descript: Soil Composite, 6-1 to 6-3
Analysis Method: EPA 8240
Lab Number: 904-2653 A - C

Sampled: Apr 19-21, 1989
Received: Apr 25, 1989
Analyzed: May 4, 1989
Reported: May 20, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	500.0	N.D.
Benzene	100.0	N.D.
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	N.D.
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	N.D.
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	100.0	N.D.
1,1,1-Trichloroethane	100.0	N.D.
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	100.0	N.D.

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

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PH52
Method (units): EPA 8240 (μg/L purged)
Analyst(s): W. Amundsen
QC Sample #: 904-1693
QC Sample Group: 9042648-53

Q.C. Sample Dates
Analyzed: May 4, 1989
Reported: May 20, 1989

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	% Recovery	Conc. Matrix Spike Duplicate	% Recovery	Relative % Deviation
1,1-Dichloroethene	N.D.	50	49	98	46	92	3.2
Trichloroethene	N.D.	50	43	86	39	78	4.9
Chlorobenzene	N.D.	50	50	100	47	94	3.1
Toluene	N.D.	50	51	102	47	94	4.1
Benzene	N.D.	50	45	90	41	82	47

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Woodward-Clyde Consultants	Client Project ID:	#8910084A-PHS2		Sampled:	Apr 24, 1989
500 12th St., Suite 100	Sample Descript.:	Water, MW5-1		Received:	Apr 26, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 5030/ 8015/8020		Analyzed:	May 2, 1989
Attention: George Ford	Lab Number:	904-2550	A	Reported:	May 3, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Low to Medium Boiling Point Hydrocarbons	30.0	24,000
Benzene	0.3	7,500
Toluene	0.3	220
Ethyl Benzene	0.3	990
Xylenes	0.3	730

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

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(415) 364-9600 • FAX (415) 364-9233

Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: 8910084A-PH52
Sample Descript: Water, MW 5-1
Analysis Method: EPA 8240
Lab Number: 904-2550 B

Sampled: Apr 24, 1989
Received: Apr 26, 1989
Analyzed: May 4, 1989
Reported: May 12, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	500.0	2,100
Benzene	100.0	8,100
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	N.D.
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	890
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	100.0	220
1,1,1-Trichloroethane	100.0	N.D.
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	100.0	460

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4041
(415) 893-3600

Chain of Custody Record

PROJECT NO. 8910084A - PLDF

SAMPLERS: (Signature) Copeland

DATE	TIME	SAMPLE NUMBER OVM	Sample Matrix (S)oil, (W)ater, (A)ir	~~EPA Method~~	~~EPA Method~~	~~EPA Method~~	~~EPA Method~~		TPH/BTEX						Number of Containers
8/4/89	NA	7 1 (16') 0	S												1
		7-2 (26') 0													1
		7-3 (30 5') 12													1
		8-1 (16') 0													1
		8 2 (26') 0													1
		8-3 (25 5') 340							⊗						1
		10-1 (16') 3													1
		10-2 (25 5') 460							⊗						1
		10-3 (30 5') 400							⊗						1
		12-1 (16') 9													1
		12-2 (25.5') 10													1
		12-3 (30 5') 100							⊗						1
		13-1 (16') 0													1
		13-2 (26') 0													1
		14-1 (16') 24							⊗						1
		14-2 (26') 252							⊗						1
		16-1 (16') 0													1
		16-2 (25 5') 4													1
		17-1 (16') 29							⊗						1
↓	↓	17-2 (25.5') 320	↓						⊗						1
8/7/89		9-1 (16') 0													1
		15 1 (25') 0													1
		15-2 (30') 31							⊗						1
		MW18-1 (30') 10					—								1
↓	↓	MW19-1 (30') 118	↓						⊗						1

REMARKS (Sample preservation, handling procedures, etc.)

~~As Hold We will Fax the Analytical Schedule~~

Normal Turn-around Please

Report results to Geo Ford 874-3203

TOTAL NUMBER OF CONTAINERS 20 SOIL

RELINQUISHED BY : (Signature)	DATE/TIME	RECEIVED BY : (Signature)	RELINQUISHED BY : (Signature)	DATE/TIME	RECEIVED BY : (Signature)

METHOD OF SHIPMENT :	SHIPPED BY : (Signature)	COURIER : (Signature)	RECEIVED FOR LAB BY : (Signature)	DATE/TIME

Woodward-Clyde Consultants

500 12th Street, Suite 100, Oakland, CA 94607-4041
(415) 893-3600

Chain of Custody Record

PROJECT NO. 8911C84A-GWGR

SAMPLERS: (Signature) Wm B

				ANALYSES												
DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	~~EPA Method~~	~~EPA Method~~	~~EPA Method~~	~~EPA Method~~	TPH/BTEX	EPA 624					Number of Containers	REMARKS (Sample preservation, handling procedures, etc.) 2 WEEK TURNAROUND
8/14/89	1 43	MW-18						⊗						3	
"	1 54	MW-5						⊗	⊗					3	
"	2.00	MW-19						⊗						3	

2 week turnaround

Report results to
George Ford
874-3263

TOTAL NUMBER OF CONTAINERS 9

WATER

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	8/14 4 26	BeN [illegible]			

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

WATER SAMPLE LOG

Sample Number MW5

Project No. 8910084B Date: 8/14/89

Project Name: 9th & Jefferson EA

Sample Location: MW-5

Weather Conditons: Sunny, clear

Observations/Comments:

QUALITY ASSURANCE

Sampling method: teflon bailer

Method to measure water level: power sounder

Pump lines or bailer ropes were new or cleaned? cleaned

Method of cleaning Bailer/Pump: alconox, water

pH Meter No: Calibrated daily

Specific Conductance Meter No: Calibrated daily

Comments:

TD = 27.27'

SAMPLING MEASUREMENTS

Water Level (below MP) at start: 24.95' End:

Measuring Point (MP) top of casing

Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance µmhos/cm		Color	Odor	Turbity
				Field	~~to 25 °C~~ SAL			
11:08	0	6.31	25.0	580	0.4	lt. grn	slight	low
11:17	3	6.43	22.0	610	0.4	"	"	med.
11:23	5	6.62	22.8	610	0.4	"	0	"

Total Discharge: 5 gal Casing Volumes Removed ~7

Method of disposal of discharged water: drummed

Number and size of sample containers filled: (3) 40 ml VOA's

Collected by: W. Copeland

Woodward-Clyde Consultants
One Walnut Creek Center, 100 Pringle Avenue
Walnut Creek, CA 94596 (415) 945-3000

WATER SAMPLE LOG

Sample Number MW18

Project No. 8910084A Date: 08/14/89

Project Name: 9th & Jefferson

Sample Location: MW18

Weather Conditions: sunny, clear

Observations/Comments:

QUALITY ASSURANCE

Sampling method: teflon bailer

Method to measure water level: power sounder

Pump lines or bailer ropes were new or cleaned? cleaned

Method of cleaning Bailer/Pump: alconox, water

pH Meter No: Calibrated daily

Specific Conductance Meter No: Calibrated daily

Comments:

TD=28.70'

SAMPLING MEASUREMENTS

Water Level (below MP) at start: 25.26' End:

Measuring Point (MP) top of casing

Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance/ µmhos/cm Sal		Color	Odor	Turbity
				Field	~~@25°C~~			
12:08	0	6.86	26.8	940	0.8	gn brn	0	low
12:17	6	6.80	23.0	720	0.4	"	0	high
1:43	12	6.71	27	580	0.4	lt. "	0	low

Total Discharge: 12 gal Casing Volumes Removed 7

Method of disposal of discharged water: drummed

Number and size of sample containers filled: (3) 40ml VOAS

Collected by: W. Copeland

Woodward-Clyde Consultants
One Walnut Creek Center, 100 Pringle Avenue
Walnut Creek, CA 94596 (415) 945-3000

volume

WATER SAMPLE LOG

Sample Number MW19

Project No. 8910084A Date 8/14/89

Project Name: 9th & Jefferson

Sample Location: MW19

Weather Conditons: sunny, clear

Observations/Comments:

QUALITY ASSURANCE

Sampling method: teflon bailer

Method to measure water level: power sounder

Pump lines or bailer ropes were new or cleaned? Cleaned

Method of cleaning Bailer/Pump: alconox, water

pH Meter No: Calibrated daily

Specific Conductance Meter No: Calibrated daily

Comments:

TD = 29.57'

SAMPLING MEASUREMENTS

Water Level (below MP) at start: 25.23' End:

Measuring Point (MP) top of casing

Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance µmhos/cm		Color	Odor	Turbity
				Field				
11:37	0	6.55	23.8	550	0.4	grn	slight	low
11:45	4	6.77	22.2	680	0.4	grn	0	high
12:45	15	6.77	22.8	590	0.3	"	slight	"

Total Discharge: 20 Casing Volumes Removed 14.6

Method of disposal of discharged water: drummed

Number and size of sample containers filled: (3) 40 ml VOA's

Collected by: W. Copeland

Woodward-Clyde Consultants
One Walnut Creek Center, 100 Pringle Avenue
Walnut Creek, CA 94596 (415) 945-3000

SEQUOIA ANALYTICAL
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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PDLF
Matrix Descript: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 908-1111 A

Sampled: See Below
Received: Aug 8, 1989
Analyzed: Aug 18, 1989
Reported: Aug 23, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	**Sample Description**	**Low/Medium B.P. Hydrocarbons** mg/kg (ppm)	**Benzene** mg/kg (ppm)	**Toluene** mg/kg (ppm)	**Ethyl Benzene** mg/kg (ppm)	**Xylenes** mg/kg (ppm)
9081111 A	8-3, 8/4	370	N.D.	1.1	6.5	12
9081112 A	10-2. 8/4	150	N.D.	0.20	1.9	6.4
9081113 A	10-3, 8/4	150	N.D.	0.40	2.8	5.4
9081114 A	12-3, 8/4	3.0	0.32	N.D.	N.D.	N.D.
9081115 A	14-1, 8/4	N.D.	N.D	N.D.	N.D.	N.D.
9081116 A	14-2, 8/4	1,400	N.D.	5.0	37	64
9081117 A	17-1, 8/4	N.D.	N.D.	N.D.	N.D.	N.D.
9081118 A	17-2, 8/4	1,500	N.D.	6.0	32	99
9081119 A	15-2, 8/7	2.0	N.D.	N.D.	N.D.	N.D.
9081120 A	MW19-1, 8/7	4.4	0.68	N.D.	0.36	0.53
Detection Limits:		**1.0**	**0.05**	**0.1**	**0.1**	**0.1**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-PLDF

QC Sample Group: 908111-120A

Reported: Aug 23, 1989

QUALITY CONTROL DATA REPORT

ANALYTE	Xylenes
Method:	EPA 8020
Analyst:	M. McBirney
Reporting Units:	ppm
Date Analyzed	Aug 18 1989
QC Sample #:	9082221
Sample Conc.:	N.D.
Spike Conc. Added:	3.0
Conc. Matrix Spike:	2.3
Matrix Spike % Recovery:	76
Conc. Matrix Spike Dup.:	2.7
Matrix Spike Duplicate % Recovery:	90
Relative % Difference:	16

Laboratory blank contained the following analytes: None Detected

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

% Recovery: $\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$

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500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-GWGR
Method (units): EPA 8240 ($\mu g/L$ purged)
Analyst(s): S. Fong
QC Sample #: 908-1416

Q.C. Sample Dates

Analyzed: Aug 28, 1989
Reported: Aug 30, 1989

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
1,1-Dichloroethene	N.D.	50	49	98	53	106	7.8
Trichloroethene	N.D.	50	50	100	52	104	3.9
Benzene	N.D.	50	47	94	51	102	8.2
Toluene	N.D.	50	49	98	53	106	7.8
Chlorobenzene	N.D.	50	49	98	53	106	7.8

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

% Recovery: $\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-GWGR

QC Sample Group: 9081505A

Reported: Aug 30, 1989

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene
Method:	EPA 8020
Analyst:	C. Camba
Reporting Units:	ppb
Date Analyzed:	Aug 17, 1989
QC Sample #:	9081591
Sample Conc.:	N.D
Spike Conc. Added:	2.5
Conc. Matrix Spike:	2.54
Matrix Spike % Recovery:	102
Conc. Matrix Spike Dup.:	2.64
Matrix Spike Duplicate % Recovery:	106
Relative % Difference:	3.9

Laboratory blank contained the following analytes: None Detected

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

% Recovery: $$\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

Relative % Difference: $$\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$$

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500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Enclosed are the results from 4 water samples received at Sequoia Analytical on August 15,1989. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
9081505 A	Water, MW-5	8/14/89	EPA 5030/8015/8020
9081505 B	Water, MW-5	8/14/89	EPA 8240
9081506 A	Water, MW-18	8/14/89	EPA 5030/8015/8020
9081507 A	Water, MW-19	8/14/89	EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Laura E. Saunders

Laura E. Saunders
Project Manager

SEQUOIA ANALYTICAL
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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-GWGR
Matrix Descript: Water
Analysis Method: EPA 5030/8015/8020
First Sample #: 908-1505 A

Sampled: Aug 14, 1989
Received: Aug 15, 1989
Analyzed: Aug 17, 1989
Reported: Aug 30, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
9081505 A	MW-5	19,000	5,400	210	770	440
9081506 A	MW-18	7,600	160	21	210	14
9081507 A	MW-19	26,000	4,300	690	980	2,600
Detection Limits:		**30.0**	**0.3**	**0.3**	**0.3**	**0.3**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: George Ford

Client Project ID: #8910084A-GWGR
Sample Descript: Water, MW-5
Analysis Method: EPA 8240
Lab Number: 908-1505 B

Sampled: Aug 14, 1989
Received: Aug 15, 1989
Analyzed: Aug 28, 1989
Reported: Aug 30, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	400.0	N.D.
Benzene	**80.0**	**7,900**
Bromodichloromethane	80.0	N.D.
Bromoform	80.0	N.D.
Bromomethane	80.0	N.D.
2-Butanone	400.0	N.D.
Carbon disulfide	80.0	N.D.
Carbon tetrachloride	80.0	N.D.
Chlorobenzene	80.0	N.D.
Chlorodibromomethane	80.0	N.D.
Chloroethane	80.0	N.D.
2-Chloroethyl vinyl ether	400.0	N.D.
Chloroform	80.0	N.D.
Chloromethane	80.0	N.D.
1,1-Dichloroethane	80.0	N.D.
1,2-Dichloroethane	80.0	N.D.
1,1-Dichloroethene	80.0	N.D.
Total 1,2-Dichloroethene	80.0	N.D.
1,2-Dichloropropane	80.0	N.D.
cis 1,3-Dichloropropene	80.0	N.D.
trans 1,3-Dichloropropene	80.0	N.D.
Ethylbenzene	**80.0**	**860**
2-Hexanone	400.0	N.D.
Methylene chloride	80.0	N.D.
4-Methyl-2-pentanone	400.0	N.D.
Styrene	80.0	N.D.
1,1,2,2-Tetrachloroethane	80.0	N.D.
Tetrachloroethene	80.0	N.D.
Toluene	**80.0**	**290**
1,1,1-Trichloroethane	80.0	N.D.
1,1,2-Trichloroethane	80.0	N.D.
Trichloroethene	80.0	N.D.
Trichlorofluoromethane	80.0	N.D.
Vinyl acetate	80.0	N.D.
Vinyl chloride	80.0	N.D.
Total Xylenes	**80.0**	**420**

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

APPENDIX A

SOIL BORING LOGS AND
MONITORING WELL INSTALLATION DIAGRAM

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 1		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Don	**DATE STARTED** **DATE FINISHED** 4-20-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 30.5 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 6	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 25 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL				
			SILTY SAND (SM) very dark brown, medium dense, dry, fine grain				
		6	becomes reddish brown				
		13					
5	1	21		HNU = 0 ppm			
		17					
		28	becomes mottled reddish-brown and brown, moist, dense				
10	2	28		HNU = 0 ppm			
		9	becomes medium dense, less silt				
		16					
15	3	18		HNU = 0 ppm			
		16					
		23	CLAYEY SAND (SC)	HNU = 0.5 ppm			
20	4	37	mottled reddish-brown and gray, some silt, dense, moist				
			decreasing clay				
		16	▼ ATD				
		31					
25	5	40		HNU = 0.5 ppm			
		21					
		32					
30	6	43		HNU = 1 ppm			
			Bottom of Boring - 30.5 feet				
35			Backfilled borehole with sand / cement grout, 4-21-89				

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 2

ELEVATION AND DATUM

DRILLING AGENCY Ensco Exploration

DRILLER Tim / Don

DATE STARTED **DATE FINISHED** 4-20-89

DRILLING EQUIPMENT Mobile B-53

COMPLETION DEPTH 30 feet

SAMPLER Modified Ca.

DRILLING METHOD 8" Hollow Stem Auger

DRILL BIT

NO. OF SAMPLES **DIST.** 4 **UNDIST.**

LOGGED BY: W. Copeland

WATER LEVEL **FIRST** 25 feet ▼ **COMPL.** **24 HRS.**

CHECKED BY: G. Ford

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL				
			SILTY SAND (SM) very dark brown, medium dense, dry, fine grain				
5	1	2 7 14	becomes reddish-brown, less silt	HNU = 0 ppm			
10	2	16 28 31	becomes light brown, moist, dense, some clay	HNU = 0 ppm			
15	3	6 7 13	becomes damp, medium dense	HNU = 0 ppm			
			CLAYEY SAND (SC) mottled reddish-brown and light brown, some silt, dense, moist				
20	4	14 23 33		HNU = 0 ppm			
			decreasing clay				
25	5	16 19 23	▼ ATD	HNU = 0 ppm			
30	6	21 50/5"	becomes very dense	HNU = 0 ppm			
			Bottom of Boring - 30 feet				
35			Backfilled borehole with sand / cement grout, 4-21-89				

LOG OF BORING NO. 2 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 3

ELEVATION AND DATUM

DRILLING AGENCY Ensco Exploration

DRILLER Scott / Bob

DATE STARTED **DATE FINISHED** 4-19-89

DRILLING EQUIPMENT Mobile B-61

COMPLETION DEPTH 30.5 feet

SAMPLER Modified Ca.

DRILLING METHOD 8" Hollow Stem Auger

DRILL BIT

NO. OF SAMPLES **DIST.** 6 **UNDIST.**

LOGGED BY: W. Copeland

WATER LEVEL **FIRST** 25 feet ▼ **COMPL.** **24 HRS.**

CHECKED BY: G. Ford

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Moisture Content	Dry Density pcf
			FILL				
			SILTY SAND (SM) very dark brown, dense, dry, fine grain				
		11	becomes reddish brown				
		18					
5	1	31		HNU = 1 ppm			
			becomes mottled reddish-brown and gray, moist				
		17					
		21					
10	2	30		HNU = 0.5 ppm			
		6	becomes damp, loose				
		6					
15	3	7		HNU = 1 ppm			
			CLAYEY SAND (SC) light brown, some silt, dense, moist				
		20					
		25					
20	4	34		HNU = 1 ppm			
			decreasing clay				
		12					
		17	▼ ATD				
25	5	22	used split spoon to recover samples	HNU = 0 ppm			
		16	becomes dark brown				
		25					
30	6	34		HNU = 0 ppm			
			Bottom of Boring - 30.5 feet				
35			Backfilled borehole with sand / cement grout, 4-21-89				

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 4
ELEVATION AND DATUM
DRILLING AGENCY Ensco Exploration
DRILLER Tim / Don
DATE STARTED / **DATE FINISHED** 4-20-89
DRILLING EQUIPMENT Mobile B-53
COMPLETION DEPTH 30.5 feet
SAMPLER Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger
DRILL BIT
NO. OF SAMPLES **DIST.** 6 **UNDIST.**
LOGGED BY: W. Copeland
WATER LEVEL **FIRST** 25 feet ▼ **COMPL.** **24 HRS.**
CHECKED BY: G. Ford

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL				
			SILTY SAND (SM) very dark brown, medium dense, dry, fine grain				
		7 13 18	becomes reddish brown				
5	1			HNU = 2 ppm			
		23 31 38	becomes mottled blue-green and brown, dense, moist, gasoline odor detected				
10	2			HNU = 5 ppm			
				HNU = 11 ppm			
		7 12 19	becomes medium dense				
15	3						
			CLAYEY SAND (SC) mottled reddish-brown and light brown, some silt, dense, moist				
		17 23 31					
20	4			HNU = 0 ppm			
			decreasing clay				
		16 24 33	▼ ATD				
25	5			HNU = 2 ppm			
		16 24 38		HNU = 1 ppm			
30	6						
			Bottom of Boring - 30.5 feet				
35			Backfilled borehole with sand / cement grout, 4-21-89				

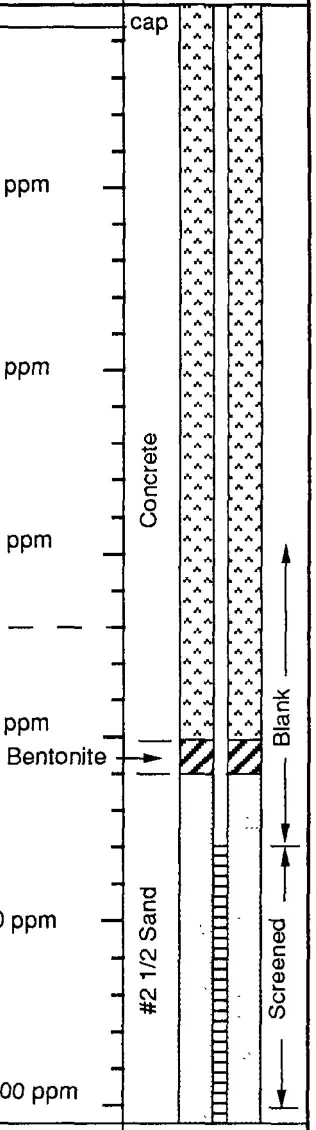
Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - MW-5		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Don	**DATE STARTED** **DATE FINISHED** 4-21-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 30.5 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 6	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 25 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION
			ASAPHALT CONCRETE PAVEMENT + FILL
			SILTY SAND (SM) very dark brown, medium dense, dry, fine grain
			becomes reddish brown
5	1	6 17 19	HNU = 0 ppm
			becomes dense, moist, some clay
10	2	16 25 31	HNU = 0 ppm
			becomes loose
15	3	7 8 8	HNU = 0 ppm
			CLAYEY SAND (SC) mottled reddish-brown and light brown, some silt, dense, moist
20	4	13 22 28	becomes blue-green, little clay, gasoline odor detected HNU = 1 ppm
			very strong gasoline odor detected
25	5	13 28 30	▼ ATD HNU = 60 ppm
30	6	20 34 43	HNU = 100 ppm
			Bottom of Boring - 30.5 feet
35			Installed monitoring well as shown 4-21-89

Monitoring Well Schematic



LOG OF BORING NO. 5 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 6			**ELEVATION AND DATUM**		
DRILLING AGENCY Ensco Exploration	**DRILLER** Scott / Bob		**DATE STARTED** **DATE FINISHED** 4-19-89		
DRILLING EQUIPMENT Mobile B-61			**COMPLETION DEPTH** 30.5 feet		**SAMPLER** Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	**DRILL BIT**		**NO. OF SAMPLES**	**DIST.** 4	**UNDIST.**
LOGGED BY: W. Copeland			**WATER LEVEL**	**FIRST** 25 feet ▼	**COMPL.** / **24 HRS.**
CHECKED BY: G. Ford					

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT				
			FILL				
5	1	3 11 30	SILTY SAND (SM) very dark brown, medium dense, dry, fine grain becomes medium brown	HNU = 0 ppm			
10	2	20 22 32	becomes light brown, moist, some clay, dense	HNU = 0 ppm			
15	3	10 14 16	becomes medium dense	HNU = 0.5 ppm			
20	4	26 30 35	CLAYEY SAND (SC) light brown, some silt, dense, moist no recovery	HNU = 0.5 ppm			
25	5	26 30 50/3"	becomes very dense, decreasing clay ▼ ATD no recovery	HNU = 1 ppm			
30	6	16 42 50/1"	used split spoon to recover sample	HNU = 5 ppm			
			Bottom of Boring - 30.5 feet				
35			Backfilled borehole with sand / cement grout, 4-21-89				

LOG OF BORING NO. 6 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 7		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-7-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 31 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 3	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 26 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL				
			SILTY SAND (SM) dark brown, dry, fine grain				
			becomes medium brown, damp				
5				no odor			
10			little clay				
			increasing clay	no odor			
			some clay				
15		8	medium dense	HNU = 0 ppm			
		8					
	1 ■	14					
			CLAYEY SAND (SC) brown, some silt, damp				
20							
			decreasing clay				
			SILTY SAND (SM) brown, some clay, dense, moist				
25		13		HNU = 0.5 ppm			
		21	▼ ATD				
	2 ■	40	becomes grayish brown, wet				
				slight gasoline odor			
30		21		HNU = 12.6 ppm			
	3 ■	28					
			Bottom of Hole - 31 feet				
35			Backfilled borehole with sand / cement grout, 4-21-89				

LOG OF BORING NO. 7 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 8		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-4-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 31 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 3	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 26 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			- Hit concrete, moved 10' north			
			SILTY SAND (SM) very dark brown, dry, fine grain			
5			no odor becomes light brown, damp			
10			no odor			
15		7				
		12				
	1	15	mottled reddish brown and gray, medium dense, some clay OVM = 0.3 ppm			
			CLAYEY SAND (SC) medium brown, some silt, moist			
20						
			decreasing clay			
25		18	SILTY SAND (SM) gray, moist, some clay, dense			
		30				
	2	38	▼ ATD becomes wet OVM = 0.9 ppm slight gasoline odor			
			OVM = 339 ppm moderate gasoline odor			
30		35				
	3	37				
			Bottom of Boring - 31 feet			
35			Backfilled borehole with sand / cement grout, 8-9-89			

LOG OF BORING NO. 8 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 9		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-7-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 25 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 1	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
5			becomes medium brown no odor			
10			increasing clay no odor			
			becomes dark brown			
			no odor			
15		7				
	1	10 12	mottled reddish brown and gray, some clay, medium dense OVM = 0 ppm			
			CLAYEY SAND (SC) brown, moist, fine grain			
20						
			no odor			
			decreasing clay			
			SILTY SAND (SM) brown, fine grain, moist			
25						
			Bottom of Boring - 25 feet			
30						
35			Backfilled borehole with sand / cement grout, 8-9-89			

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 10		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-4-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 31 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 3	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 26 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL				
			SILTY SAND (SM) dark brown, dry, fine grain				
5			becomes medium brown	no odor			
10			little clay	no odor			
			some clay	no odor			
15	1	7 9 15	mottled reddish brown and gray, medium dense	OVM = 2.6 ppm			
			CLAYEY SAND (SC) brown, some silt, damp				
20			decreasing clay	OVM = 49 ppm slight gasoline odor			
			SILTY SAND (SM) gray, moist, little clay, dense				
25	2	15 26	▼ ATD becomes wet	OVM = 456 ppm OVM = 490 ppm strong gasoline odor			
30	3	24 50/5"		OVM = 392 ppm			
			Bottom of Boring - 31 feet				
35			Backfilled borehole with sand / cement grout, 8-9-89				

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 11		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-4-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 0.5 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 0	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			Encountered concrete at 6", moved 10' south, hit concrete again Abandoned boring			
5						
10						
15						
20						
25						
30						
35						

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 12		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-4-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 31 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 3	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 26 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
5			becomes medium brown no odor			
10			little clay no odor			
			some clay no odor			
15	1	6 9 14	mottled reddish brown, brown, and gray, medium dense OVM = 9 ppm			
			little clay			
20						
			becomes gray, dense, wet			
25	2	24 34	▼ ATD OVM = 10 ppm			
			OVM = 200 ppm strong gasoline odor			
30	3	21 32	OVM = 101 ppm			
			Bottom of Boring - 31 feet			
35			Backfilled borehole with sand / cement grout, 8-9-89			

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 13		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-4-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 26.5 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 2	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 25.4 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL				
			SILTY SAND (SM) dark brown, dry, fine grain				
5				no odor			
			becomes reddish brown				
10				no odor			
			increasing clay	no odor			
15	1	8 12 17	mottled reddish brown and gray, some clay, medium dense	OVM = 0 ppm			
			CLAYEY SAND (SC) brown, some silt, damp				
20				no odor			
			decreasing clay				
			SILTY SAND (SM) brown, some clay, moist				
25	2	18 22 45	▼ ATD	OVM = 0 ppm			
			Bottom of Boring - 26.5 feet				
30							
35			Backfilled borehole with sand / cement grout, 8-9-89				

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 14		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-4-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 26.5 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 2	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 25.4 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL				
			SILTY SAND (SM) dark brown, dry, fine grain				
5				no odor			
			becomes reddish brown				
10				no odor			
			increasing clay				
				no odor			
15		7					
	1 ■	9 13	mottled reddish brown and gray, some clay, medium dense	OVM = 24 ppm			
			CLAYEY SAND (SC) brown, some silt, damp				
20							
			decreasing clay	strong gasoline odor			
			SILTY SAND (SM) brown, some clay, moist				
25		15	▼				
	2 ■	22 40	ATD	OVM = 252 ppm			
			Bottom of Boring - 26.5 feet				
30							
35			Backfilled borehole with sand / cement grout, 8-9-89				

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 15		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-7-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 31 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 2	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 26.5 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) very dark brown, dry, fine grain			
5			becomes medium brown — no odor			
10			increasing clay — no odor			
			some clay — no odor			
15			OVM = 0 ppm			
			CLAYEY SAND (SC) brown, moist			
20			decreasing clay			
			SILTY SAND (SM) brown, moist, fine grain			
25	1	15 28	▼ ATD becomes gray — OVM = 0 ppm slight gasoline odor			
30	2	25 50/5"	OVM = 31 ppm			
			Bottom of Boring - 31 feet			
35			Backfilled borehole with sand / cement grout, 8-9-89			

LOG OF BORING NO. 15 SHEET 1 OF 1

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 16		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-4-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 26 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 2	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL			
			SILTY SAND (SM) dark brown, dry, fine grain			
5			becomes medium brown no odor			
10			no odor			
			no odor			
15		9				
		9				
	1	16	mottled reddish brown and gray, little clay, medium dense OVM = 0 ppm			
20			no odor			
25		21	OVM = 4 ppm			
	2	35				
			Bottom of Boring - 26 feet			
30						
35			Backfilled borehole with sand / cement grout, 8-9-89			

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - 17

ELEVATION AND DATUM

DRILLING AGENCY Ensco Exploration

DRILLER Tim / Rich

DATE STARTED
DATE FINISHED 8-7-89

DRILLING EQUIPMENT Mobile B-53

COMPLETION DEPTH 30 feet

SAMPLER Modified Ca.

DRILLING METHOD 6" Solid Auger

DRILL BIT

NO. OF SAMPLES **DIST.** 2 **UNDIST.**

LOGGED BY: W. Copeland

WATER LEVEL **FIRST** ▼ **COMPL.** **24 HRS.**

CHECKED BY: G. Ford

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION		USCS	Moisture Content	Dry Density pcf
			ASAPHALT CONCRETE PAVEMENT + FILL				
			SILTY SAND (SM) dark brown, dry, fine grain hit pipe, moved 4 feet west				
5			becomes medium brown	no odor			
10			becomes gray	very slight odor			
15		98					
		12					
	1	15	becomes medium dense	OVM = 29 ppm			
20			CLAYEY SAND (SC) mottled gray and brown, some silt, damp decreasing clay	moderate gasoline odor OVM = 34 ppm			
			SILTY SAND (SM) gray, moist, some clay				
25		12		OVM = 320 ppm			
	2	33					
				strong gasoline odor OVM = 455 ppm			
30			Bottom of Boring - 30 feet				
35			Backfilled borehole with sand / cement grout, 8-9-89				

Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - MW-18

ELEVATION AND DATUM

DRILLING AGENCY Ensco Exploration

DRILLER Tim / Rich

DATE STARTED / **DATE FINISHED** 8-7-89

DRILLING EQUIPMENT Mobile B-53

COMPLETION DEPTH 31 feet

SAMPLER Modified Ca.

DRILLING METHOD 6" Solid Auger

DRILL BIT

NO. OF SAMPLES **DIST.** 1 **UNDIST.**

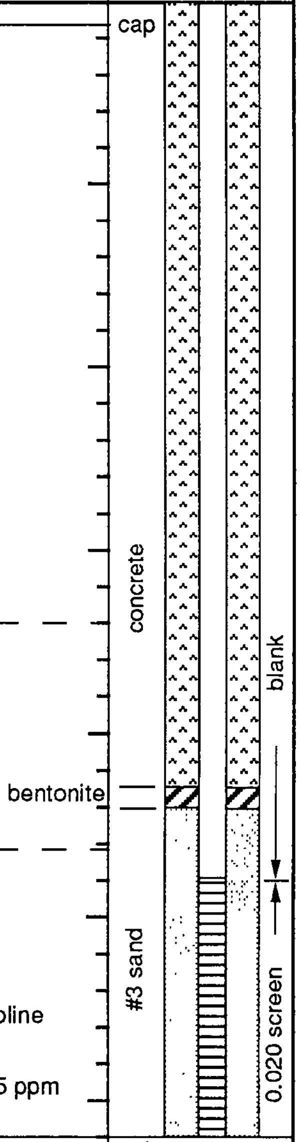
LOGGED BY: W. Copeland

WATER LEVEL **FIRST** 27 feet ▼ **COMPL.** **24 HRS.**

CHECKED BY: G. Ford

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	
			ASAPHALT CONCRETE PAVEMENT + FILL	
			SILTY SAND (SM) dark brown, dry, fine grain	
			becomes medium brown	
5				no odor
			increasing clay	
10				
				no odor
			some clay	
15				
			CLAYEY SAND (SC) brown, some silt, damp	
20				no odor
			decreasing clay	
			SILTY SAND (SM) brown, fine grain, moist	
25				
			▼ ATD	
			becomes wet	slight gasoline odor
				OVM = 9.5 ppm
30		23		
	1 ■	43		
			Bottom of Hole - 31 feet	
35			Backfilled borehole with sand / cement grout, 4-21-89	

Monitoring Well Schematic



Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - MW-19

ELEVATION AND DATUM

DRILLING AGENCY Ensco Exploration

DRILLER Tim / Rich

DATE STARTED / **DATE FINISHED** 8-7-89

DRILLING EQUIPMENT Mobile B-53

COMPLETION DEPTH 31 feet

SAMPLER Modified Ca.

DRILLING METHOD 6" Solid Auger

DRILL BIT

NO. OF SAMPLES **DIST.** 1 **UNDIST.**

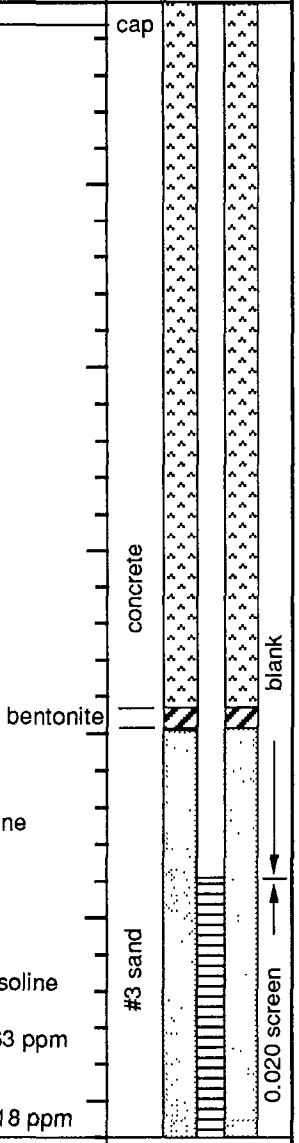
LOGGED BY: W. Copeland

WATER LEVEL **FIRST** 28 feet ▼ **COMPL.** **24 HRS.**

CHECKED BY: G. Ford

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	
			ASAPHALT CONCRETE PAVEMENT + FILL	
			SILTY SAND (SM) very dark brown, dry, fine grain	
			becomes medium brown	
5				no odor
			increasing clay	
10				
				no odor
			some clay	
15				
			less clay	
20				
			becomes gray, little clay	slight gasoline odor
25				
			▼ ATD becomes wet	strong gasoline odor OVM = 663 ppm
30		28		
	1	34		OVM = 118 ppm
			Bottom of Hole - 31 feet	
35			Backfilled borehole with sand / cement grout, 4-21-89	

Monitoring Well Schematic



STREAMBORN

510/528-4234
Fax 528-2613

Douglas N. and Shar Salter
1551 Larimer Street, #1302
Denver CO 80202

31 October 1996

Project No. P135

Letter Report
Abandonment of Monitoring Wells MW-5, MW-18, MW-19, and PTW-1
901 Jefferson Street
Oakland CA

Dear Mr. and Mrs. Salter:

This letter report describes abandonment of monitoring wells MW-5, MW-18, MW-19, and PTW-1 at the subject property (Figures 1 and 2).

BACKGROUND

A chronology of environmental activities at the subject property is summarized in Table 1. Monitoring wells MW-5, MW-18, and MW-19 were installed by Woodward-Clyde Consultants in 1989 during soil and groundwater investigation activities at the property. Monitoring well PTW-1 was installed by Streamborn in 1994 as part of a bioremediation pilot study. The four wells were constructed of 2-inch diameter PVC casing, installed to a depth of approximately 30-feet below ground surface. Copies of the boring logs for wells MW-5, MW-18, MW-19, and PTW-1 are contained in Attachment 1.

Alameda County Environmental Health Services recently authorized abandonment of the wells (Attachment 2).

WELL ABANDONMENT

Prior to well abandonment, a permit was obtained from the Alameda County Flood Control and Water Conservation District - Zone 7 (Attachment 3).

Well MW-18 was abandoned on 29 October 1996. Wells MW-5, MW-19, and PTW-1 were abandoned on 30 October 1996. Immediately prior to abandonment, the groundwater level and total depth of each well were measured (Table 2).

The wells were abandoned by overdrilling using 8-inch outside diameter hollow-stem augers. The augers penetrated approximately 33-feet below ground surface (2-feet below the maximum total depth shown on the boring logs).

After extracting the PVC casing, filter pack, and surface seal from each well, the augers were placed back into the open hole and cement-bentonite grout (proportions: 5 gallons of water, 94-pounds of cement, 5 pounds bentonite) was placed through the hollow-stem of the augers. While placing grout, the augers were extracted until the hole was completely grouted. The theoretical volume of each hole and the grout take compared favorably. After grouting, the pavement surface was patched with concrete.

Mail: P.O. Box 8330, Berkeley CA 94707-8330 [illegible]

Soil spoils (primarily comprised of filter pack material) were placed in five 55-gallon steel drums and stored at the property. Soil spoils will be disposed of in the future at an appropriately-permitted landfill. Grout spoils, traffic boxes, and PVC casing were disposed of as municipal waste.

Drilling work was performed by Tonto Drilling of Sacramento CA. The Well Drillers Report (DWR 188) is included in Attachment 4.

If you have any questions, please call.

Sincerely,

STREAMBORN

Doug Covell for

Mark W. Buscheck
Geologist

Attachments

cc: Jennifer Eberle/Alameda County Environmental Health Services, Alameda CA
Wyman Hong/Alameda County Flood Control & Water Conservation District, Pleasanton CA

Table 1

Chronology of Environmental Activities
901 Jefferson Street
Oakland CA

Date of Activity	Activity Performed By	Description
Unknown	Unknown	• Four 550-gallon underground tanks installed at property
1946 to 1953	Unknown	• An automotive service station was operated at the property. Four 550-gallon underground fuel tanks were used to store gasoline.
Circa 1953	Unknown	• Automotive service station demolished and the property paved. The property was subsequently used as a parking lot.
Circa 1978	Douglas Salter	• Douglas N. Salter purchased the property. The property continued to be used as a parking lot.
19 and 20 April 1989	WCC	• 6 borings drilled (Borings 1 through 6). • Analytical results of composite soil samples revealed elevated TPH-Gasoline and BTEX in one boring. The remaining TPH-Gasoline, BTEX, and lead results were not remarkable.
21 April 1989	WCC	• Boring 5 completed as groundwater monitoring well (MW-5).
24 April 1989	WCC	• Groundwater level measured and groundwater sample collected at MW-5. • Analytical results revealed elevated concentrations of TPH-Gasoline and BTEX.
4 and 7 August 1989	WCC	• 10 borings drilled (Borings 7 through 10, and 12 through 17). • Samples exhibiting gasoline odor were analyzed for TPH-Gasoline and BTEX. • Analytical results revealed elevated TPH-Gasoline and BTEX concentrations near the northeast corner of the property. • Borings 18 and 19 completed as groundwater monitoring wells (MW-18 and MW-19)
14 August 1989	WCC	• Groundwater levels measured and groundwater samples collected at MW-5, MW-18, and MW-19. Groundwater samples analyzed for TPH-Gasoline and BTEX. Samples collected from MW-5 were also analyzed for volatile organic compounds by EPA Method 8240. • Analytical results generally revealed elevated TPH-Gasoline and BTEX. The remaining volatile organic compounds were nondetect.
10 and 11 April 1990	WCC	• 10 borings drilled (Borings 20 through 29). • Samples exhibiting gasoline odor were analyzed for TPH-Gasoline and BTEX. • Analytical results generally revealed elevated TPH-Gasoline and BTEX concentrations near the northeast corner of the property.
15 February 1991	WCC	• Groundwater levels measured and groundwater samples collected at MW-5, MW-18, and MW-19. Groundwater samples analyzed for TPH-Gasoline and BTEX. • Analytical results generally revealed elevated TPH-Gasoline and BTEX.
20 February 1991	WCC	• Vapor extraction pilot test performed. • Analytical results from soil vapor samples revealed detectable levels of BTEX and elevated concentrations of total volatile organic vapors.
2 March 1993	WCC	• Groundwater levels measured and groundwater samples collected at MW-5, MW-18, and MW-19. Groundwater samples analyzed for TPH-Gasoline and BTEX. • Analytical results generally revealed elevated TPH-Gasoline and BTEX. • Floating product observed in MW-19.
15 December 1993	Streamborn	• Groundwater levels measured and groundwater samples collected at MW-5 and MW-18. Groundwater sample collected at well MW-19 for use in bench-scale treatability study. Groundwater samples analyzed for TPH-Gasoline and BTEX. • Floating product observed in well MW-19.
15 April 1994	Streamborn	• Bench-scale treatability testing completed. Bench-scale treatability testing was performed to assess the feasibility of insitu bioremediation. Results confirmed the feasibility of insitu bioremediation. Pilot-scale treatability testing proposed.
14 October 1994	Streamborn	• Well PTW-1 installed (for use in pilot-scale treatability testing).
26 October 1994	Streamborn	• Groundwater levels measured and groundwater samples collected at MW-5 and PTW-1 Groundwater samples analyzed for TPH-Gasoline and BTEX. • Initial dosing event. Well PTW-1 dosed with solution consisting of 10-gallons water, 55 ml 35% H_2O_2 (equivalent H_2O_2 concentration of 500 mg/L), 3 6 grams NH_4Cl, 0.7 grams $Ca(NO_3)_2 \cdot 4H_2O$, and 0.4 grams KH_2PO_4. Source of water = distilled.
4 November 1994	Streamborn	• 2nd dosing event. Same as initial pilot test event, except H_2O_2 dose increased to 110 ml (equivalent H_2O_2 concentration of 1,000 mg/L).
11 November 1994	Streamborn	• 3rd dosing event. Same as initial pilot test event, except H_2O_2 dose increased to 165 ml (equivalent H_2O_2 concentration of 1,500 mg/L).
16 November 1994	Streamborn	• 4th dosing event. Same as initial pilot test event, except H_2O_2 dose increased to 220 ml (equivalent H_2O_2 concentration of 2,000 mg/L).
23 and 30 November 1994	Streamborn	• 5th and 6th dosing events. Same solutions as previous event.
9 and 13 December 1994	Streamborn	• 7th and 8th dosing events. Same solutions as previous event.
23 December 1994	Streamborn	• Groundwater sample collected from MW-5. Groundwater sample analyzed for TPH-Gasoline and BTEX. Field analyses performed for ammonia, nitrate, and phosphate. • Groundwater sample collected from PTW-1. Field analyses performed for ammonia, nitrate, and phosphate. • Well casing elevations surveyed for MW-5, MW-18, PTW-1, and MW-19. • 9th dosing event. Same solution as previous event.
29 December 1994	Streamborn	• 10th dosing event. Same solution as previous event.
5 January 1995	Streamborn	• 11th dosing event. Increase dosing volume from 10 to 20 gallons. Dosing solution now consists of 20 gallons water, 440 mls 35% H_2O_2 (equivalent H_2O_2 concentration of 2,000 mg/L), 7.2 grams NH_4Cl, 1.4 grams $Ca(NO_3)_2 \cdot 4H_2O$ and 0.8 grams KH_2PO_4. Source of water = distilled.
12, 18, 25, 30 January 1995	Streamborn	• 12th, 13th, 14th, 15th dosing events. Same solutions as previous event.
8 February 1995	Streamborn	• 16th dosing event. Same solution as previous event.
17 February 1995	Streamborn	• Groundwater samples collected from MW-5 and PTW-1. Groundwater samples analyzed for TPH-Gasoline and BTEX. • 17th dosing event. Same solution as previous event.
23 February 1995	Streamborn	• 18th dosing event. Same solution as previous event.
1 March 1995	Streamborn	• 19th dosing event. Increase dosing volume from 20 to 40 gallons. Dosing solution now consists of 40 gallons water, 880 ml 35% H_2O_2 (equivalent H_2O_2 concentration of 2,000 mg/L), 14.4 grams NH_4Cl, 2.8 grams $Ca(NO_3)_2 \cdot 4H_2O$, and 1.6 grams KH_2PO_4. Source of water = distilled.
7, 17, 24, 30 March 1995	Streamborn	• 20th, 21st, 22nd, 23rd dosing events. Same solutions as previous event.
7 April 1995	Streamborn	• 24th dosing event. Same solution as previous event.
18 April 1995	Streamborn	• Groundwater samples collected from MW-5 and PTW-1. Groundwater samples analyzed for TPH-Gasoline/BTEX, ammonia, nitrate, phosphate, and bacteria populations. Field analyses performed for ammonia, nitrate, and phosphate.
4 May 1995	Streamborn	• 25th dosing event. Same solution as previous event.
12 May 1995	Streamborn	• 26th dosing event. Same solution as previous event except source of water and pH adjustment. Source of water = 20 gallons from MW-5 and 20 gallons from PTW-1. pH of dosing solution adjusted using $NaHCO_3$.
18 May 1995	Streamborn	• 27th dosing event. Same solution as previous event except source of water. Source of water = 20 gallons from MW-5 and 20 gallons from MW-19.
25 May 1995	Streamborn	• 28th dosing event. Same solution as previous event except source of water. Source of water = 20 gallons from MW-5 and 20 gallons from PTW-1.
1 June 1995	Streamborn	• 29th dosing event. Same solution as previous event except source of water. Source of water = 30 gallons from MW-5 and 10 gallons from MW-19. Field analyses performed for ammonia, nitrate, and phosphate in dosing solution.
9 June 1995	Streamborn	• 30th dosing event. Same solution as previous event except concentrations of $Ca(NO_3)_2 \cdot 4H_2O$ and KH_2PO_4 increased. Solution now prepared using 5.6 grams $Ca(NO_3)_2 \cdot 4H_2O$ and 3.2 grams KH_2PO_4. Field analyses performed for ammonia, nitrate, and phosphate in dosing solution.
15 June 1995	Streamborn	• Groundwater samples collected from MW-5, PTW-1, and MW-19. Groundwater samples analyzed for TPH-gasoline and BTEX. Field analyses performed for ammonia, nitrate, and phosphate in dosing solution. • 31st dosing event. Same solution as previous event except source of water. Source of water = 27.5 gallons from MW-5, 5 gallons from PTW-1, and 7.5 gallons from MW-19.
23 June 1995	Streamborn	• 32nd dosing event. Same solution as previous event except source of water. Source of water = 30 gallons from MW-5 and 10 gallons from MW-19. Field analyses performed for ammonia, nitrate, and phosphate in dosing solution.
29 June 1995	Streamborn	• 33rd dosing event. Same solution as previous event except source of water. Source of water = 20 gallons from MW-5 and 20 gallons from MW-19. Field analyses performed for ammonia, nitrate, and phosphate in dosing solution.
5, 13, 20, 25 July 1995	Streamborn	• 34th, 35th, 36th, 37th dosing events. Same solutions as previous event. During 5 July 1995 event, field analyses were performed for ammonia, nitrate, and phosphate in dosing solution.
1 August 1995	Streamborn	• Groundwater samples collected from wells MW-18, MW-5, PTW-1, and MW-19. Groundwater samples analyzed for TPH-gasoline, BTEX, ammonia, nitrate, phosphate, and bacteria populations. • 38th dosing event. Same solution as previous event except source of water. Source of water = purge and development water remaining onsite.
5 March 1996	Streamborn	• Groundwater samples collected from wells MW-18, MW-5, PTW-1, and MW-19. Groundwater samples analyzed for TPH-gasoline, BTEX, ammonia, nitrate, and phosphate. • Approximately 19 gallons of purge water from sampling used to formulate dosing solution (same target concentrations of dosing reagents as previous dosing event). Dosing solution poured into well PTW-1.
29-30 October 1996	Streamborn	• Monitoring wells MW-5, MW-18, MW-19, and PTW-1 abandoned.

General Notes

(a) WCC = Woodward-Clyde Consultants, Oakland CA.

(b) BTEX = benzene, toluene, ethylbenzene, and xylenes. TPH-Gasoline = total petroleum hydrocarbons as gasoline.

Table 2

Groundwater Level Measurements
901 Jefferson Street
Oakland CA

Date or Parameter	Measured By	Comments	MW-5		MW-18		MW-19		PTW-1	
			Measuring Point = Top of Well Casing at North Side, Elevation = 999.50		Measuring Point = Top of Well Casing at North Side, Elevation = 999.67		Measuring Point = Top of Well Casing at North Side, Elevation = 1,000.00		Measuring Point = Top of Well Casing at North Side, Elevation = 999.89	
			Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation
14 August 1989	WWC		-	974.58	-	974.47	-	974.77	▨	▨
15 February 1991	WWC		-	973.58	-	973.43	-	973.60	▨	▨
27 March 1991	WWC		-	974.24	-	974.07	-	974.45	▨	▨
2 March 1993	WWC		-	976.60	-	976.32	-	976.50	▨	▨
15 December 1993	Streamborn		24.31	975.19	24.70	974.97	25.02	974.98	▨	▨
26 October 1994	Streamborn	Immediately before sampling, prior to start of pilot testing.	24.49	975.01	24.91	974.76	25.11	974.89	24.71	975.18
4 November 1994	Streamborn	Immediately before 2nd dosing event.	24.64	974.86	25.02	974.65	24.97	975.03	24.89	975.00
16 November 1994	Streamborn	Immediately before 4th dosing event.	24.33	975.17	24.73	974.94	24.65	975.35	24.60	975.29
30 November 1994	Streamborn	Immediately before 6th dosing event.	24.00	975.50	24.46	975.21	24.35	975.65	24.33	975.56
23 December 1994	Streamborn	Immediately before sampling, prior to 9th dosing event.	23.75	975.75	24.18	975.49	24.07	975.93	24.02	975.87
25 January 1995	Streamborn	Immediately before 14th dosing event.	22.99	976.51	23.49	976.18	23.37	976.63	23.27	976.62
17 February 1995	Streamborn	Immediately before sampling, prior to 17th dosing event.	22.27	977.23	22.80	976.87	22.44	977.56	22.56	977.33
7 March 1995	Streamborn	Immediately before 20th dosing event.	22.02	977.48	22.57	977.10	22.21	977.79	22.34	977.55
30 March 1995	Streamborn	Immediately before 23rd dosing event.	21.36	978.14	21.93	977.74	21.58	978.42	21.68	978.21
7 April 1995	Streamborn	Immediately before 24th dosing event.	21.26	978.24	21.78	977.89	21.38	978.62	21.57	978.32
18 April 1995	Streamborn	Immediately before sampling. No dosing performed.	21.13	978.37	21.71	977.96	21.25	978.75	21.44	978.45
12 May 1995	Streamborn	Immediately before 26th dosing event.	21.18	978.32	21.72	977.95	21.28	978.72	21.47	978.42
25 May 1995	Streamborn	Immediately before 28th dosing event.	21.45	978.05	21.91	977.76	21.58	978.42	21.70	978.19
1 June 1995	Streamborn	Immediately before 29th dosing event.	21.50	978.00	21.99	977.68	21.62	978.38	21.77	978.12
9 June 1995	Streamborn	Immediately before 30th dosing event.	21.66	977.84	22.11	955.57	21.77	978.23	21.90	977.99
15 June 1995	Streamborn	Immediately before sampling, prior to 31st dosing event.	21.70	977.80	22.15	977.52	21.76	978.24	21.89	978.00
23 June 1995	Streamborn	Immediately before 32nd dosing event.	21.81	977.69	22.25	977.42	21.90	978.10	22.02	977.87
29 June 1995	Streamborn	Immediately before 33rd dosing event.	21.90	977.60	22.33	977.34	22.05	977.95	22.15	977.74
5 July 1995	Streamborn	Immediately before 34th dosing event.	21.98	977.52	22.40	977.27	22.10	977.90	22.25	977.64
20 July 1995	Streamborn	Immediately before 36th dosing event.	22.20	977.30	22.58	977.09	22.31	977.69	22.42	977.47
25 July 1995	Streamborn	Immediately before 37th dosing event.	22.18	977.32	22.56	977.11	22.36	977.64	22.44	977.45
1 August 1995	Streamborn	Immediately before sampling, prior to 38th dosing event.	22.24	977.26	22.65	977.02	22.44	977.56	22.51	977.38
5 March 1996	Streamborn		22.40	977.10	22.86	976.81	22.43	977.57	22.70	977.19
29 October 1996	Streamborn	Immediately before abandoning the 4 wells.	23.98	975.52	24.30	975.37	23.99	976.01	24.28	975.61
Total Depth (last measurement)	Streamborn		29.6	-	29.6'	-	30.0	-	29.8	-

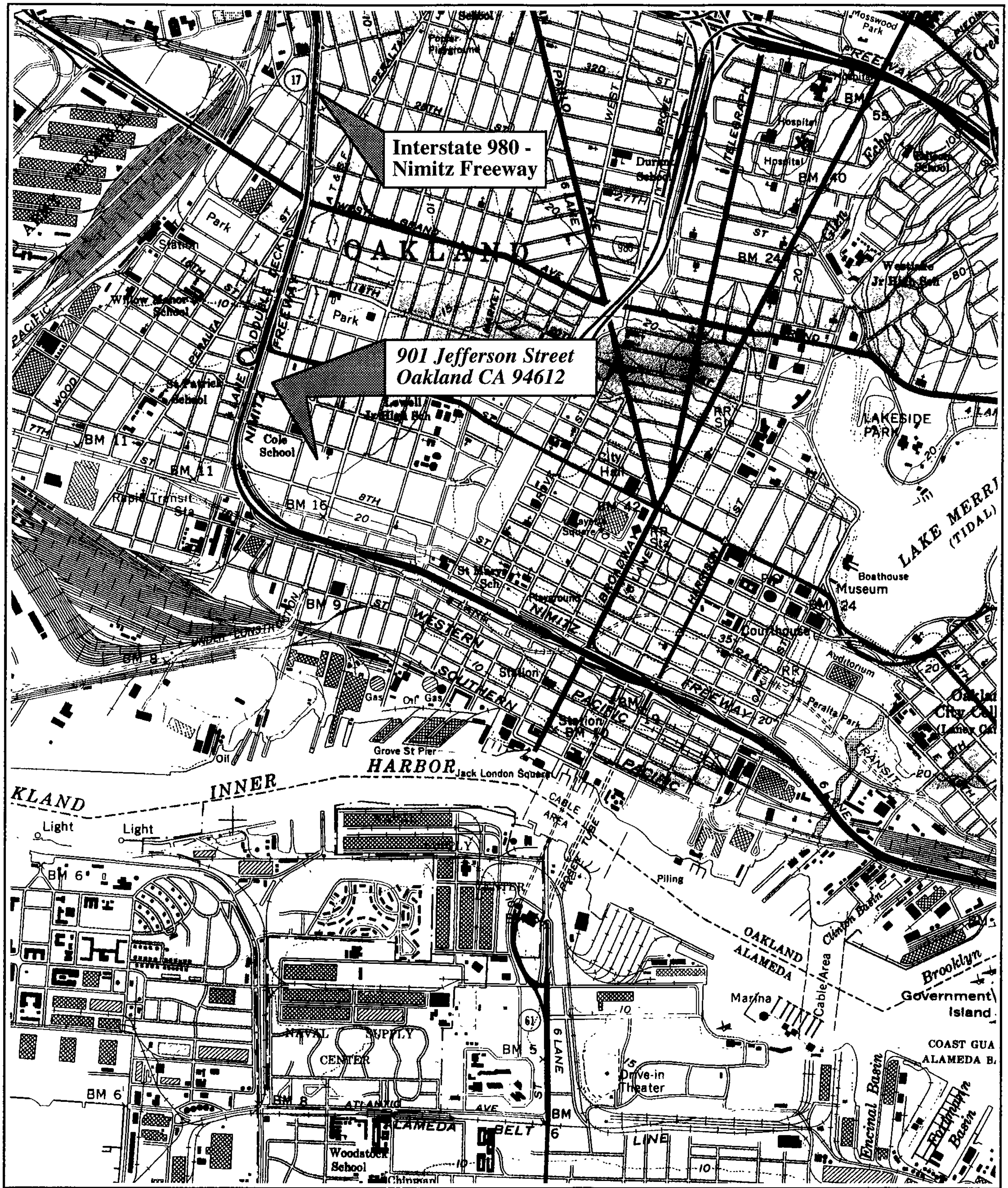
General Notes

(a) WWC = Woodward-Clyde Consultants, Oakland CA.

(b) Groundwater elevations referenced to site-specific datum (north side, top of PVC casing at MW-19, elevation = 1,000.00). Well elevations were re-surveyed by Streamborn on 23 December 1994. Previous water elevation measurements have been adjusted to the new datum.

(c) Measurements in units of feet.

(d) Shaded cells indicate that well did not yet exist.



Basemap: U.S. Geological Survey,
7.5 Minute Quadrangle, Oakland
West CA, 1959 (Photorevised 1980)

Figure 1

Location Map

901 Jefferson Street
Oakland CA

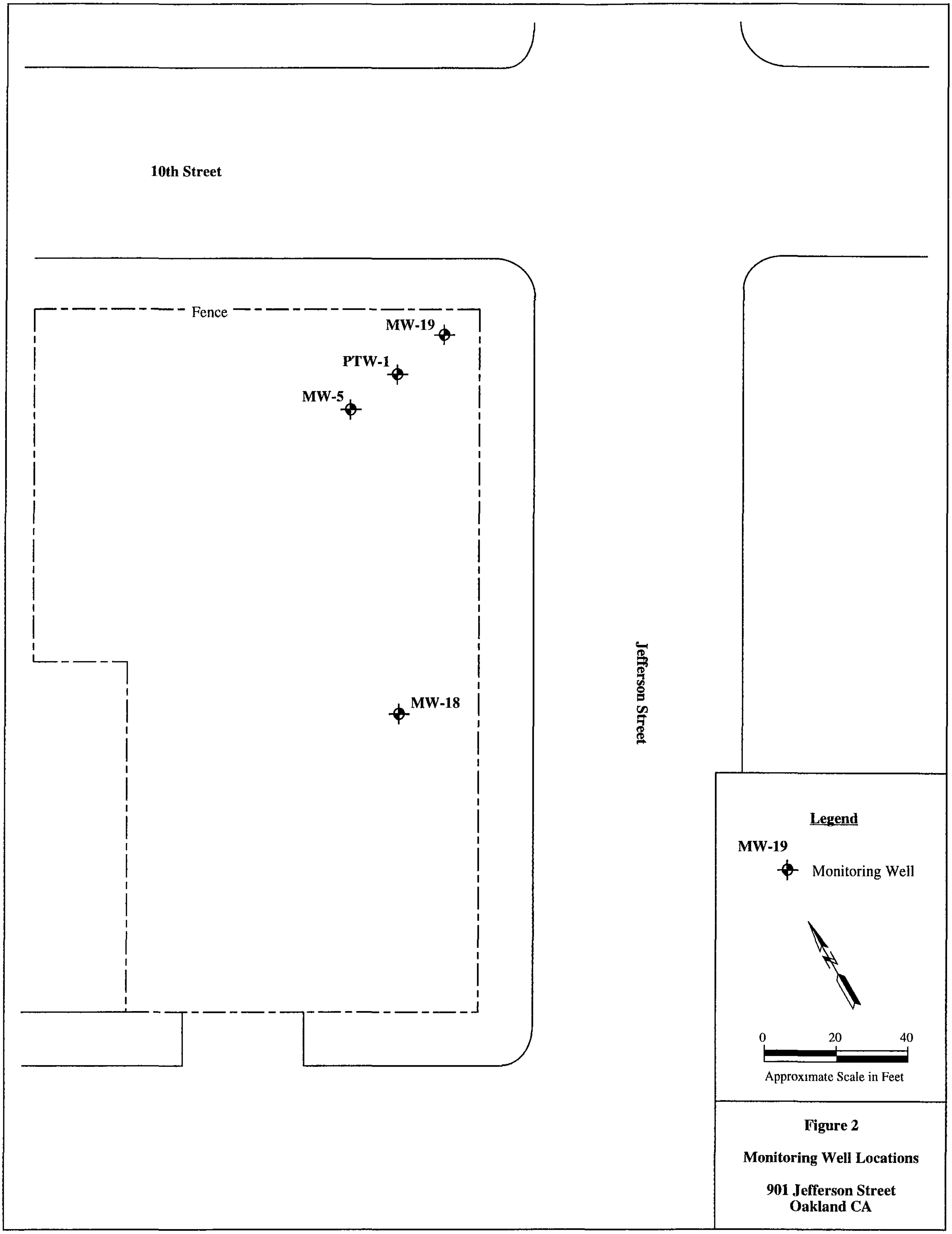


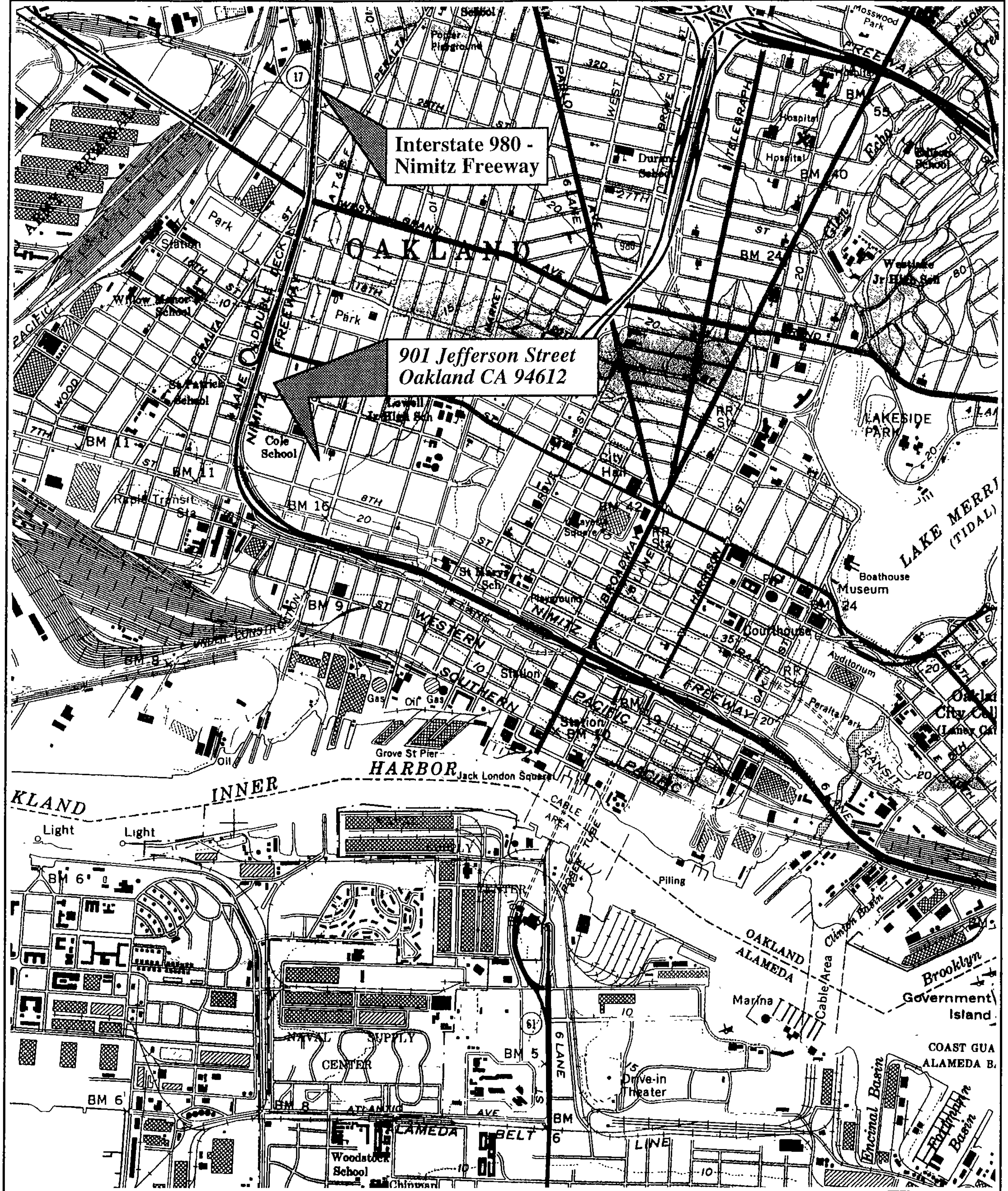
Figure 2

Monitoring Well Locations

901 Jefferson Street
Oakland CA

ATTACHMENT 1

Boring Logs and Well Completion Schematics



Basemap: U.S. Geological Survey,
7.5 Minute Quadrangle, Oakland
West CA, 1959 (Photorevised 1980)

Figure 1

Location Map

901 Jefferson Street
Oakland CA

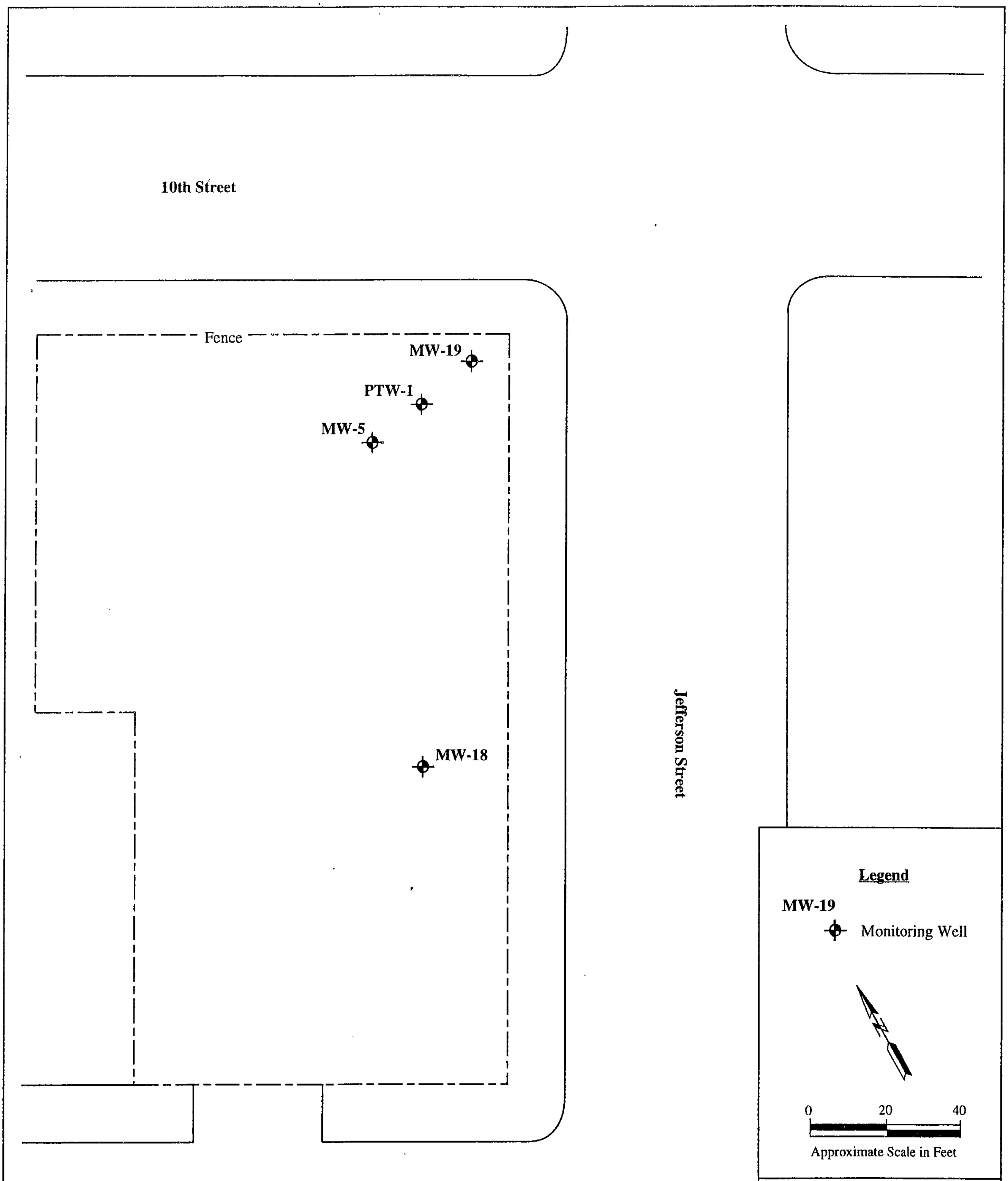


Figure 2

Monitoring Well Locations

901 Jefferson Street
Oakland CA

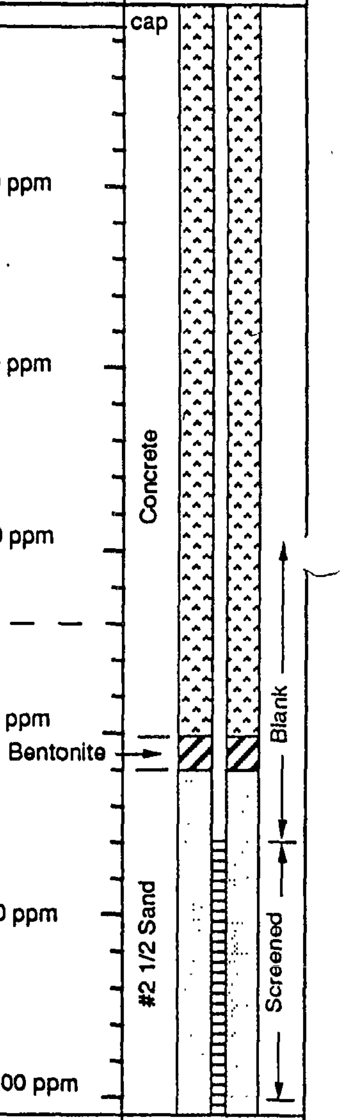
Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - MW-5		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Don	**DATE STARTED** **DATE FINISHED** 4-21-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 30.5 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 8" Hollow Stem Auger	**DRILL BIT**	**NO. OF SAMPLES** | **DIST.** 6	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** | **FIRST** 25 feet ▼	**COMPL.** | **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION
			ASAPHALT CONCRETE PAVEMENT + FILL
			SILTY SAND (SM) very dark brown, medium dense, dry, fine grain
		6	becomes reddish brown
		17	
5	1	19	HNU = 0 ppm
			becomes dense, moist, some clay
		16	
		25	
10	2	31	HNU = 0 ppm
			becomes loose
		7	
		8	HNU = 0 ppm
15	3	8	
			CLAYEY SAND (SC) mottled reddish-brown and light brown, some silt, dense, moist
		13	becomes blue-green, little clay, gasoline odor detected HNU = 1 ppm
		22	
20	4	28	
			very strong gasoline odor detected
		13	▼ ATD
		28	
25	5	30	HNU = 60 ppm
		20	
		34	HNU = 100 ppm
30	6	43	
			Bottom of Boring - 30.5 feet
35			Installed monitoring well as shown 4-21-89

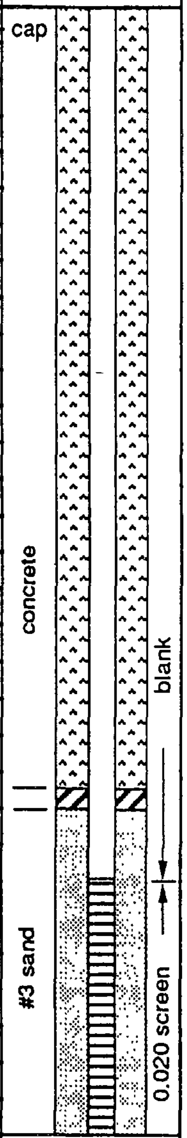
Monitoring Well Schematic



Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - MW-18		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-7-89.	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 31 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 1	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 27 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	Monitoring Well Schematic
			ASAPHALT CONCRETE PAVEMENT + FILL	
			SILTY SAND (SM) dark brown, dry, fine grain	
			becomes medium brown	
5			no odor	
			increasing clay	
10				
			no odor	
			some clay	
15				
			CLAYEY SAND (SC) brown, some silt, damp	
20			no odor	
			decreasing clay	
			SILTY SAND (SM) brown, fine grain, moist	
25				
			▼ ATD	
			becomes wet	
			slight gasoline odor	
30		23	OVM = 9.5 ppm	
	1	43		
			Bottom of Hole - 31 feet	
35			Backfilled borehole with sand / cement grout, 4-21-89	

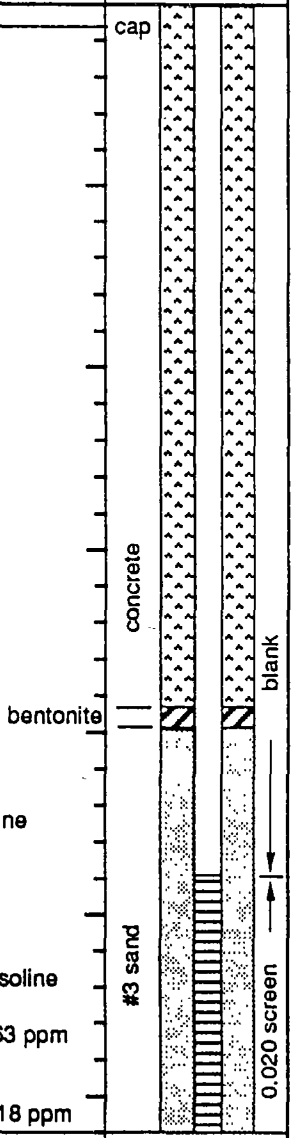
Woodward-Clyde Consultants

PROJECT NAME 9th & Jefferson EA **NO.** 8910084A

BORING NUMBER - MW-19		**ELEVATION AND DATUM**	
DRILLING AGENCY Ensco Exploration	**DRILLER** Tim / Rich	**DATE STARTED** **DATE FINISHED** 8-7-89	
DRILLING EQUIPMENT Mobile B-53		**COMPLETION DEPTH** 31 feet	**SAMPLER** Modified Ca.
DRILLING METHOD 6" Solid Auger	**DRILL BIT**	**NO. OF SAMPLES** **DIST.** 1	**UNDIST.**
LOGGED BY: W. Copeland		**WATER LEVEL** **FIRST** 28 feet ▼	**COMPL.** **24 HRS.**
CHECKED BY: G. Ford			

Depth (feet)	Samples	Blows	MATERIAL DESCRIPTION	
			ASAPHALT CONCRETE PAVEMENT + FILL	
			SILTY SAND (SM) very dark brown, dry, fine grain	
			becomes medium brown	
5				no odor
			increasing clay	
10				
				no odor
			some clay	
15				
			less clay	
20				
			becomes gray, little clay	slight gasoline odor
25				
			▼ ATD	strong gasoline odor OVM = 663 ppm
			becomes wet	
30	1	28 34		OVM = 118 ppm
			Bottom of Hole - 31 feet	
35			Backfilled borehole with sand / cement grout, 4-21-89	

Monitoring Well Schematic



BORING LOG LEGEND AND NOTES

Soil Classification

Soils were classified in the field in approximate accordance with ASTM D 2488-90 (Standard Practice for Description and Identification of Soils, Visual-Manual Procedure). Textural classifications represent the opinion of the field geologist or field engineer regarding the nature and character of encountered materials. Proportions of textural classes (sand, gravel, etc.) cited on the logs should be considered approximate. Laboratory classification tests may not have been performed to verify the field classifications. In general, mixtures of soil types and gradual transitions between soil types may more accurately represent the subsurface materials, instead of the distinct divisions depicted on the logs. Soils were necessarily classified only at depths where samples were examined; extrapolation to other depths, as depicted on the logs, adds uncertainty.

Textural Classification

☐ Sand (SP)

░ Gravel (GW)

Textural Transitions

— — — Approximate location of gradational transition or inferred contact between soil types

Sampling

▩ Sampling Interval (collected or attempted)

Sampling performed with a 140-pound weight, falling approximately 30-inches, driving a 2-inch inside diameter by 18-inch long split-spoon sampler fitted with three 2-inch diameter by 6-inch long brass liners.

General Note

(a) OVM (ppmv) = Measurement by field organic vapor monitor in ppm volume/volume. Measurements performed using Thermo Environmental Instruments Model 580B OVM, 10.0 eV photoionization detector, calibrated to 100 ppm v/v isobutylene. Measurements performed by screening the ends of the freshly retrieved liners. Value cited on log was maximum reading obtained at either end of liner.

(b) Depths measured from ground surface.

Boring No. PTW-1 (page 1 of 3)

Project: Soil and Groundwater Remediation
901 Jefferson Street
Oakland CA

Address: 901 Jefferson Street
Oakland CA

Location: Near northeast corner of property.

Logged By: Mark Buscheck, STREAMBORN, Berkeley CA

Elevation: Top of casing, north side = 999.89-feet (assumed datum)

Project No.: P135

Start: 2:15 PM, 14 October 1994

Finish: 3:30 PM, 14 October 1994

Drill Method: ±4-inch ID by ±8-inch OD hollow-stem auger

Driller: Bayland Drilling, Menlo Park CA

Drill Rig: CME 75

Drilled Depth: ±31-feet

Completion: 2-inch PVC well with traffic box

Groundwater (During Drilling): ±24.5-feet

Sampling: ±2-inch ID by ±2-1/2-inch OD driven split-spoon fitted with 2-inch diameter by 6-inch long brass liners. Samples collected by driving spoon ahead of auger bit.

Groundwater (Stabilized): ±24.7-feet (measurement on 26 October 1994, after well installed)

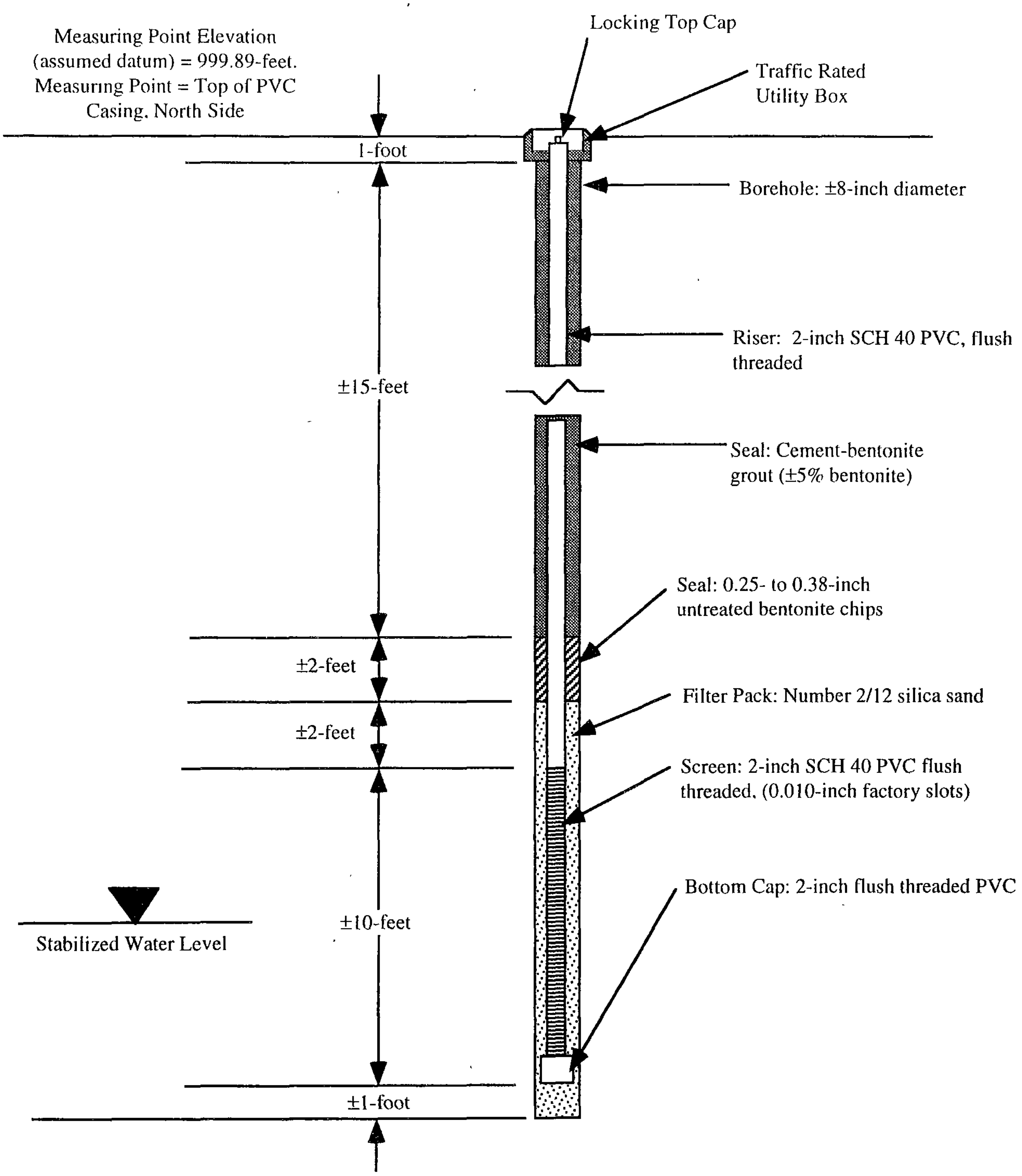
Depth (feet)	Graphic Log	USCS	Sample Interval	Blows per 6 inches	Recovery (inches)	Soil Description, Observations, Comments	OVM (ppmv)
0.0						Asphalt pavement (top ±4-inches).	
	▨					Gravel (GW), fill (aggregate base).	
1.0	▨	GW					
2.0							
3.0							
4.0							
			▨	2	0	Poorly-graded sand (SP), fine, moist, light brown. No odor or staining.	
5.0			▨				
		SP	▨	3	3		<5
			▨	6	6		
6.0							
7.0							
8.0							
9.0							
			▨	6	6	Poorly-graded sand (SP), as above. No odor or staining.	
10.0							

Boring No. PTW-1 (page 2 of 3)

Depth (feet)	Graphic Log	USCS	Sample Interval	Blows per 6 inches	Recovery (inches)	Soil Description, Observations, Comments	OVM (ppmv)
10.0			▨	16	6		
			▨				<5
			▨	24	6		
11.0							
12.0							
13.0							
14.0							
			▨	7	6	Poorly-graded sand (SP), as above except grey-green color. Slight gasoline odor. No staining.	
15.0			▨	9	6		<5
			▨	10	6		
16.0							
17.0							
		SP					
18.0							
19.0							
			▨	9	6	Poorly-graded sand (SP), as above. Strong gasoline odor. Grey-green staining.	16
20.0			▨	12	6		23
			▨	20	6		29
21.0							
22.0							
23.0			▨	12	6	Poorly-graded sand (SP), as above. Strong gasoline odor. Grey-green staining.	112
			▨	16	0		343
24.0			▨	20	6		226
			▨	9	6	Water first observed at ±24.5-feet	460
25.0							

Boring No. PTW-1 (page 3 of 3)

Depth (feet)	Graphic Log	USCS	Sample Interval	Blows per 6 inches	Recovery (inches)	Soil Description, Observations, Comments	OVM (ppmv)
25.0			▨				
			▨	12	6		360
			▨	20	6		322
26.0							
27.0							
		SP					
28.0							
29.0							
			▨	12	2	Poorly-graded sand (SP), as above. Strong gasoline odor. Grey-green staining.	211
30.0			▨				
			▨	16	6		279
			▨	24	6		286
31.0						Total depth = ±31-feet.	
						Boring completed as a well. See completion schematic.	
						On 26 October 1994, after well completion, stabilized water depth measured at ±24.7-feet.	
32.0							
33.0							
34.0							
35.0							
36.0							
37.0							
38.0							
39.0.							
40.0							



PTW-1 Monitoring Well Completion Schematic

901 Jefferson Street
Oakland CA

ATTACHMENT 2

Letter From Alameda County Environmental Health Services Authorizing Abandonment of Wells at 901 Jefferson Street, Oakland CA

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

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

October 24, 1996
STID 3738

Douglas and Shar Salter
Summit Realty Interests
1551 Larimer St., #1302
Denver CO 80202

RE: vacant lot, 901 Jefferson St., Oakland CA 94607

Dear Mr. and Mrs. Salter,

This office is in the process of closing this case. The RWQCB has already signed off on the Case Closure Summary. Although there are residual amounts of groundwater contamination (18,000 ppb TPHg, 320 ppb benzene, 120 ppb toluene, 530 ppb xylenes and 260 ppb ethylbenzene), a site-specific risk assessment was performed, and results indicated that there is no significant threat to human health via the residential scenario. Therefore, the monitoring wells will be destroyed. **This letter is being sent to inform Zone 7 of the status of this case.**

Please contact me by telephone at least 2 business days in advance of the well destruction so that I may be present onsite, if my schedule allows. You are also requested to provide a brief letter report documenting the well destruction. As soon as that report is received, a Remedial Action Completion Certificate (aka final closure letter) will be written, signed by our Director, and sent to you. If you have any questions, please contact me at 510-567-6761.

Sincerely,

J Eberle

Jennifer Eberle
Hazardous Materials Specialist

cc: Doug Lovell, Streamborn, PO Box 9504, Berkeley CA 94709-0504
Attn: Wyman Hong, Alameda County Flood Control District, Zone 7, Water Agency
5997 Parkside Dr., Pleasanton CA 94588
Jennifer Eberle/file

je.3738zone.7

ATTACHMENT 3

Well Abandonment Permit From Alameda County Flood Control and Water Conservation District - Zone 7

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 901 Jefferson Street
Oakland CA 94607

CLIENT
Name Douglas and Shar Salter
Address 1551 Larimer Street, #1302 Voice (303) 595-0207
City Denver Colorado Zip 80202

APPLICANT
Name Streamborn
Fax (510) 528-2613
Address P.O. Box 8330 Voice (510) 528-4234
City Berkeley CA Zip 94707-8330

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	___	Well Destruction	X

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. 647348

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 30 ft.
Surface Seal Depth 16-20 ft. Number 4

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 29 October 1996
ESTIMATED COMPLETION DATE 29 October 1996

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Date 25 Oct 96

FOR OFFICE USE

PERMIT NUMBER 96774
LOCATION NUMBER 1S/4W 35E80 to 35E83

PERMIT CONDITIONS

Circled Permit Requirements Apply

[✓ A.] GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

[✓ E.] WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 28 Oct 96
Wyman Hong

91992

28 October 1996

ZONE 7
WATER RESOURCES ENGINEERING
DRILLING ORDINANCE

DOUGLAS AND SHAR SALTER
901 JEFFERSON STREET
OAKLAND
WELLS 1S/4W 35E80 TO 35E83
PERMIT 96774

Destruction Requirements:

1. Drill out the well so that the casing, seal, and gravel pack are removed to the bottom of the well.
2. Sound the well as deeply as practicable and record for your report.
3. Using a tremie pipe, fill the hole to 2 feet below the lower of finished grade or original ground with neat cement.
4. After the seal has set, backfill the remaining hole with compacted material.

These destruction requirements as proposed by Mark Buscheck of Streamborn meet or exceed the Zone 7 minimum requirements.

ATTACHMENT 4

Well Drillers Report (DWR 188)

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

STREAMBORN

510/528-4234
Fax 528-2613

Department of Water Resources
Central District
3251 S Street
Sacramento CA 95816-9897

31 October 1996

Project No. P135

Abandonment of Monitoring Wells MW-5, MW-18, MW-19, and PTW-1
901 Jefferson Street
Oakland CA

To Whom This May Concern:

Attached is the Well Drillers Report (DWR 188) for the subject wells.

The attached report includes property location map and well location plan.

Sincerely,

STREAMBORN

Mark W. Buscheck
Geologist

Attachments

Mail: [illegible]

Office: [illegible]

STREAMBORN

510/528-4234
Fax 528-2613

Douglas N. and Shar Salter
1551 Larimer Street, #1302
Denver CO 80202

7 April 1998

Project No. P135

Letter Report
Shallow Soil Sampling
901 Jefferson Street
Oakland CA

Dear Mr. and Ms. Salter:

This letter report documents shallow soil sampling performed at the subject property (Figure 1). This report replaces our previous letter report dated 3 December 1997.

Borings were drilled to a depth of 5-feet or less on 16 November 1997, 10 December 1997, and 4 March 1998. Borings were drilled using a solid-stem hand auger and backfilled with soil cuttings. Boring locations are shown on Figure 2. The dimensioned sample locations are included in Attachment 4.

During drilling, samples were collected by either (1) driving a 2-inch inside diameter by 2.5-inch outside diameter spoon sampler fitted with one 2-inch by 6-inch long metal liner, or (2) retaining the soil cuttings in a plastic bag. Liner and cutting samples were classified in the field in approximate accordance with ASTM D2488-93 (Standard Practice for Description and Identification of Soils, Visual-Manual Procedure). As well, the samples were screened in the field with an organic vapor meter (Thermo Environmental Instruments, Model 580B, equipped with a 10.2 eV photoionization detector, and calibrated to 100 ppm v/v isobutylene).

Subsurface conditions encountered in the borings typically consisted of:

- Approximately two inches of asphalt concrete underlain by approximately 7-inches of aggregate base.
- Silty Sand (SM). This stratum extended from below the aggregate base to a depth of at least 5-feet (the maximum depth drilled). This stratum was typically dark brown, medium-dense, and moist, with a fine sand texture. No organic vapors were detected with the field meter and no chemical staining or odors were observed.

Two types of soil samples were sent to the laboratory for analysis: grab samples and composite samples. Grab samples were collected in liners for analysis of volatile organic compounds. The grab samples were collected from the area of the property which was formerly developed in a commercial capacity. Composite samples were collected in a plastic bag from various depth intervals and locations, and analyzed for total petroleum hydrocarbons and lead (total and soluble). Composite samples were collected from areas of the property which were formerly developed in residential and commercial capacities.

Initial laboratory analysis revealed elevated total lead in some soil samples from the northeast portion of the property; otherwise, analytical results were nondetect or not remarkable. Table 1 contains soil analytical results.,

Selected samples exhibiting elevated total lead were further analyzed for soluble lead according to the California Waste Extraction test (WET) and Toxicity Characteristic Leaching Procedure (TCLP) test. Elevated soluble lead was measured using the WET, but not the TCLP test. Because the original analytical results indicated more than 100% of the total lead was soluble in by the WET in sample SH15(0.75-3.5), we requested the laboratory reanalyze this sample. The reanalysis revealed that approximately 70% of the total lead was soluble. Table 1 contains the soluble lead results.

The analytical results indicate that the soil represented by samples SH6/SH7(0.75-3.5), SH12(0.75-3.5), and SH15(0.75-3.5) exceed the California threshold for lead-containing hazardous waste (WET-Soluble Lead > 5 mg/L). This same soil does not exceed the Federal threshold for lead-containing hazardous waste (TCLP-Soluble Lead > 5 mg/L). Accordingly, if this soil is excavated, it will be considered a California-only (non-RCRA) hazardous waste and will require special transportation/disposal or treatment.

The California EPA - Department of Toxic Substances Control (DTSC) allows reclassifying California-only hazardous waste with WET-Soluble Lead concentrations exceeding 5 mg/L (California Code of Regulations - 22 CCR 66260.200). Reclassification is contingent on the following laboratory results:

1) A minimum of 4 representative soil samples must be composited and subjected to analysis by TCLP. The mean of all analyzed samples must be < 1.5 mg/L of soluble lead.
2) A minimum of 4 representative soil samples must be composited and subjected to multiple extractions using fresh water. Extractions are repeated until analysis reveals that the further addition of sample will yield no additional lead in the extractant. The soluble lead in the final extraction must be < 0.083 mg/L.
3) A minimum of 4 representative soil samples must be composited and subjected to multiple extractions using sea water. Extractions are repeated until analysis reveals that the further addition of sample will yield no additional lead in the extractant. The soluble lead in the final extraction must be < 0.14 mg/L.

In March 1998, soil samples were collected from the subject property at locations where the greatest total lead concentrations had previously been measured (borings SH-6, SH-7, SH-10, and SH-14 between depths of 0.75 to 3.5 feet). These 4 samples were composited and the composite sample was subjected to the reclassification tests. The analytical results revealed the soil is eligible for reclassification as California nonhazardous waste (Table 2).

At your request, we estimated the cost to remove and dispose of the lead-contaminated soil assuming (1) the soil is removed as part of basement excavation activities during site redevelopment, and (2) the soil is reclassified by the DTSC as a nonhazardous waste. The northern and eastern extent of lead-contaminated soil was assumed to be the curblines of 10th Street and Jefferson Street. The western and southern lateral extent of lead-contaminated soil was assumed to be one-half way between "clean" borings and "contaminated" borings. The depth of the lead-contaminated soil was assumed to be between ±0.75- and ±3.5-feet, except in the vicinity of boring SH-10 where the depth was assumed to be between ±0.75- and ±5-feet.

Figure 3 shows the estimated extent of lead-contaminated soil. The estimated volume of lead-contaminated soil is ±600 bank cubic yards. The estimated cost to excavate and dispose of the reclassified soil is summarized in Table 3.

The standard operating procedure we employed, the chain-of-custody forms, and the laboratory data reports are attached. Please call if you have any questions.

Sincerely,

STREAMBORN

K. B. Alex

Kenneth B. Alexander, RG, CH
Certified Hydrogeologist

D W Lovell

Douglas W. Lovell, PE
Geoenvironmental Engineer

Attachments

Table 1

Shallow Soil Analytical Results
901 Jefferson Street, Oakland CA

Location	Depth (feet)	Sample Date	Sample Identification	Sample Type	Organic Vapor Meter Screening (ppm v/v)	Odor and Staining	TPH-Kerosene (mg/kg)	TPH-Diesel (mg/kg)	TPH-Motor Oil (mg/kg)	TPH-Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Other Volatile Organic Compounds (mg/kg)	Total Lead (mg/kg)	Soluble Lead (mg/L)
SH-1 and SH-2	0.75 to 3.5	16 Nov 97	SH1/SH2(0.75-3.5)	Composite	<5	none	<1	4.9	<50	NM	NM	NM	NM	NM	NM	66	NM
SH-3	0.75 to 3.5	16 Nov 97	SH3(0.75-3.5)	Composite	<5	none	<1	2.8	<50	NM	NM	NM	NM	NM	NM	<5	NM
	1.25 to 1.75	16 Nov 97	SH3(1.25-1.75)	Grab (liner)	<5	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	NM
SH-4	1.25 to 1.75	16 Nov 97	SH4(1.25-1.75)	Grab (liner)	<5	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	NM
SH-4 and SH-5	0.75 to 3.5	16 Nov 97	SH4/SH5(0.75-3.5)	Composite	<5	none	<1	<1	<50	NM	NM	NM	NM	NM	NM	<5	NM
SH-5	1.25 to 1.75	16 Nov 97	SH5(1.25-1.75)	Grab (liner)	<5	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	NM
SH-6	1.25 to 1.75	16 Nov 97	SH6(1.25-1.75)	Grab (liner)	<5	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	NM
	3.5 to 5	10 Dec 97	SH6(3.5-5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	47	NM
SH-6 and SH-7	0.75 to 3.5	16 Nov 97	SH6/SH7(0.75-3.5)	Composite	<5	none	<4	23	250	NM	NM	NM	NM	NM	NM	490	WET = 10 TCLP < 1.0
SH-7	1.25 to 1.75	16 Nov 97	SH7(1.25-1.75)	Grab (liner)	<5	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	NM
	3.5 to 5	10 Dec 97	SH7(3.5-5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	NM
SH-8 and SH-9	0.75 to 3.5	16 Nov 97	SH8/SH9(0.75-3.5)	Composite	<5	none	<1	2.3	<50	NM	NM	NM	NM	NM	NM	9.6	NM
SH-10	0.75 to 3.5	10 Dec 97	SH10(0.75-3.5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	440	NM
	3.5 to 5	10 Dec 97	SH10(3.5-5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	370	NM
SH-11	0.75 to 3.5	10 Dec 97	SH11(0.75-3.5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	300	NM
	3.5 to 5	10 Dec 97	SH11(3.5-5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	6.0	NM
SH-12	0.75 to 3.5	10 Dec 97	SH12(0.75-3.5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	290	WET = 18 TCLP < 0.5
	3.5 to 5	10 Dec 97	SH12(3.5-5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	9.9	NM
SH-13	0.75 to 3.5	10 Dec 97	SH13(0.75-3.5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	NM
	3.5 to 5	10 Dec 97	SH13(3.5-5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	NM
SH-14	0.75 to 3.5	10 Dec 97	SH14(0.75-3.5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	420	NM
	3.5 to 5	10 Dec 97	SH14(3.5-5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.9	NM
SH-15	0.75 to 3.5	10 Dec 97	SH15(0.75-3.5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	130	WET = 20 TCLP = 0.66
	0.75 to 3.5	10 Dec 97	SH15(0.75-3.5)	Reanalysis	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	310	WET = 22
	3.5 to 5	10 Dec 97	SH15(3.5-5)	Composite	<5	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.1	NM

General Notes

(a) < indicates concentration below laboratory method reporting limit (shaded cells).

(b) Soil samples collected by Streamborn (Berkeley CA) Samples analyzed by Chromalab (Pleasanton CA).

(c) TPH = total petroleum hydrocarbons. Other Volatile Organic Compounds = compounds of interest by EPA Method 8240. NM = Not measured.

(d) Organic Vapor Meter = Thermo Environmental Instruments, Model 580B, equipped with 10.2 eV photoionization detector, calibrated to 100 ppm v/v isobutylene.

(e) WET = California Waste Extraction test by modified EPA Method 3005A. TCLP = Toxicity Characteristic Leaching Procedure test by EPA Method 1311.

Table 2

Analytical Results from Reclassification Testing
901 Jefferson Street, Oakland CA

					Soluble Lead (mg/L)							
					TCLP Extraction				EP Toxicity (fresh water)		EP Toxicity (sea water)	
Location	Depth (feet)	Sample Date	Sample Identification	Sample Type	Run #1	Run #2	Run #3	Run #4	Run #1	Run #2	Run #1	Run #2
SH-6, SH-7, SH-10, and SH-14	0.75 to 3.5	18 Mar 98	SH6, 7, 10, 14 (0.75-3.5)	Composite	<0.5	0.62	<0.5	<0.5	0.065	<0.05	<0.05	<0.05

General Notes

(a) < indicates concentration below laboratory reporting limit (shaded cells).

(b) Soil samples collected by Streamborn (Berkeley CA). Samples analyzed by Chromalab (Pleasanton CA).

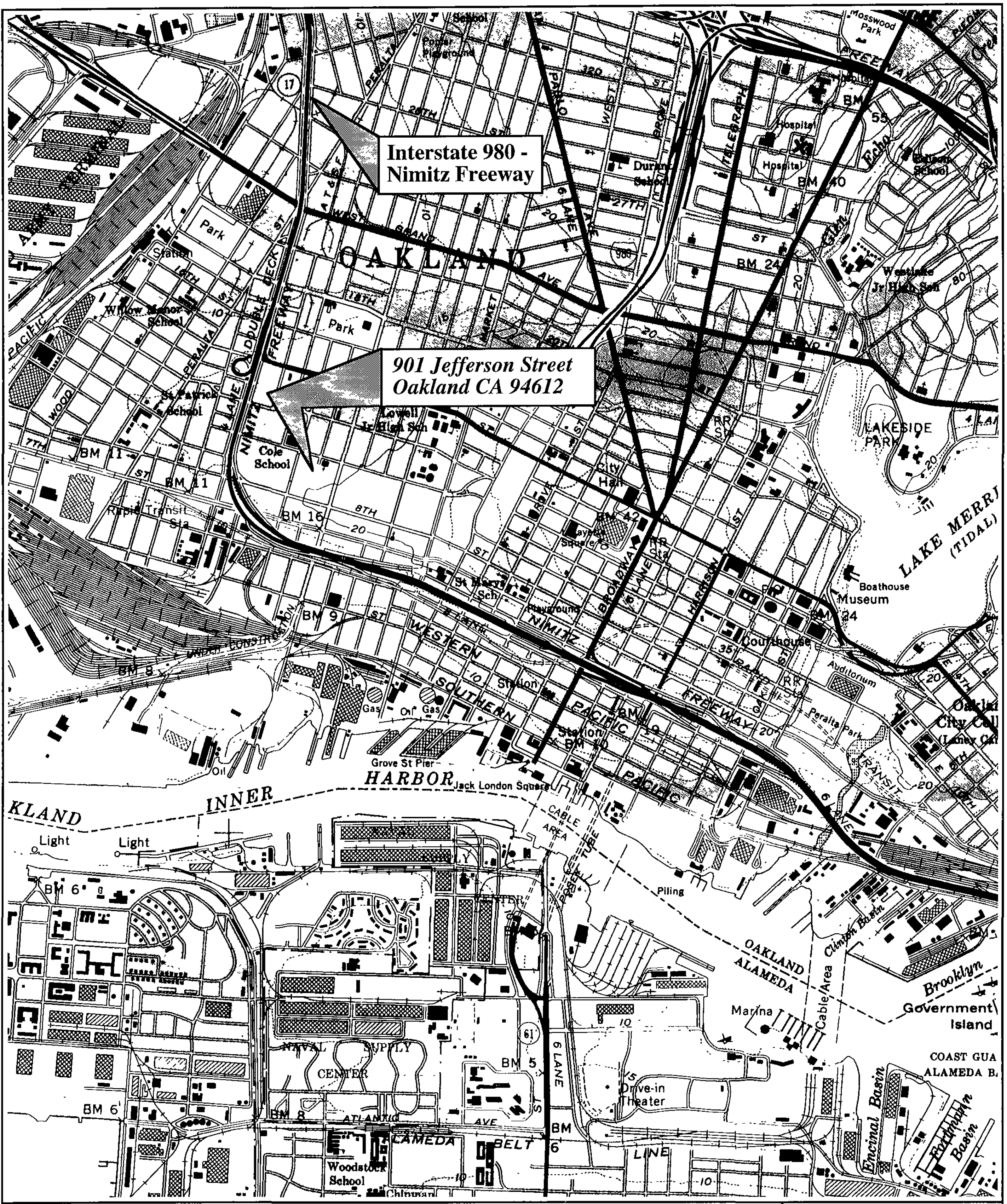
(c) TCLP = Toxicity Characteristic Leaching Procedure test by EPA Method 1311.

(d) EP Toxicity = Extraction Procedure (using fresh water or sea water) by modified EPA Method 1320.

Table 3

Estimated Cost to Remove and Dispose of Reclassified Soil
901 Jefferson Street, Oakland CA

Item	Comments
Estimated Soil Reclassification Cost	• $9,620 is the current application fee (the fee structure will change on 1 July 1998 from the fixed amount to actual time spent processing the application). • $5,000 in labor costs for consultant to prepare reclassification application. • Total = **$14,620**. • DTSC estimates 2 to 4 months (including public comment period) will be required from receipt of application until a decision is rendered.
Estimated Lateral Extent of Lead-Contaminated Soil	• Approximately 95-feet by 55-feet. • Lateral extent on the northern and eastern sides assumed to be the curblines of 10th Street and Jefferson Street. • The lateral extent on the western and southern sides assumed to be half-way between "clean" borings and "contaminated" borings.
Estimated Depth of Lead-Contaminated Soil	• The depth of the lead-contaminated soil was assumed to be between ±0.75- and ±3.5-feet, except in the vicinity of boring SH-10 where the depth was assumed to be between ±0.75- and ±5-feet. • Previous soil testing by Woodward-Clyde included 1 boring in the area of contamination (MW-5). A composite sample from 5, 10, 15, and 20-foot depth was tested for lead with results nonelevated.
Estimated Volume of Lead-Contaminated Soil	• 16,160 cubic feet or 600 bank cubic yards. • 18,580 cubic feet or 690 truck cubic yards (15% expansion).
Estimated Weight of Lead-Contaminated Soil	• Moist unit weight within the truck assumed to be 110 pounds per cubic foot or 1.485 tons per cubic yard. • 690 yd^3 x 1.485 tons/yd^3 = 1,025 tons.
Estimated Excavation Cost	• Because the excavator would otherwise be mobilized to the site for basement excavation and because the soil would otherwise be excavated, even if clean, an allowance of **$1,000** has been provided for the incremental (extra) excavation costs associated with lead-contaminated soil.
Estimated Transportation Cost	• $9/ton for transportation from the site to Waste Management's Altamont landfill in Alameda County CA (quotation from Waste Management) (trucking vehicles were mobilized to the site for other excavation activities). • 1,025 tons x $9/ton = **$9,225**. • Depending on the earthwork balance for site development, the local demand for fill, and other factors; it is possible that even clean fill would need to be transported from the site, at cost. If clean soil would need to be transported offsite, the incremental (extra) cost associated with lead-contaminated soil would be less than estimated herein.
Estimated Disposal Cost	• $12/ton for disposal at Waste Management's Altamont landfill in Alameda County CA (quotation from Waste Management). • 1,025 tons x $12/ton = **$12,300**.
Total	• $14,620 + $1,000 + $9,225 + $12,300 = $37,145 • Say **$35,000 to $40,000**.



0 0.5 1.0

Approximate Scale in Miles

0 5,000

Approximate Scale ın Feet

N

Basemap: U.S. Geological Survey,
7.5 Minute Quadrangle, Oakland
West CA, 1959 (Photorevised 1980)

Figure 1

Location Map

901 Jefferson Street
Oakland CA

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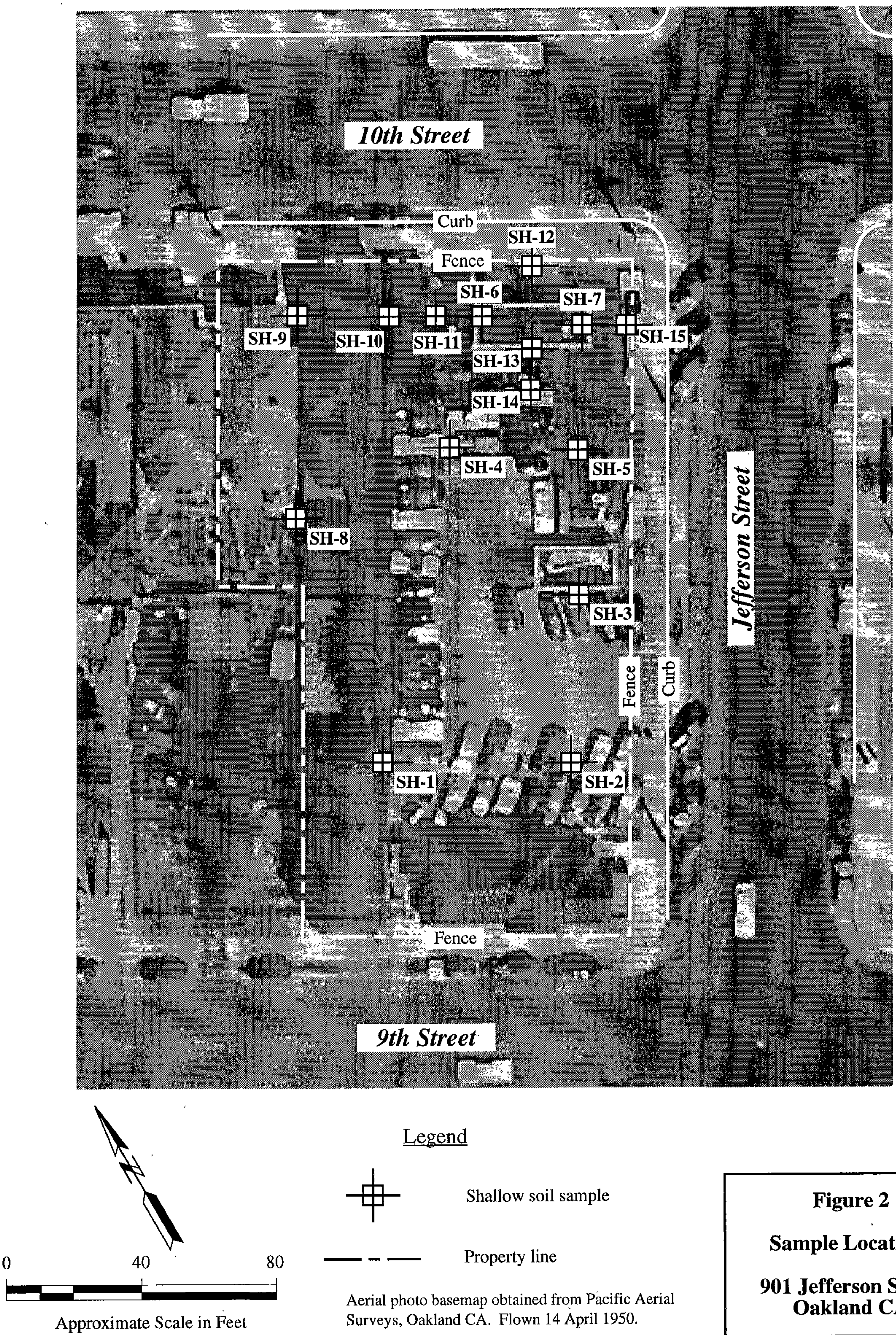

Aerial photo basemap obtained from Pacific Aerial Surveys, Oakland CA. Flown 14 April 1950.

Figure 2

Sample Locations

901 Jefferson Street
Oakland CA

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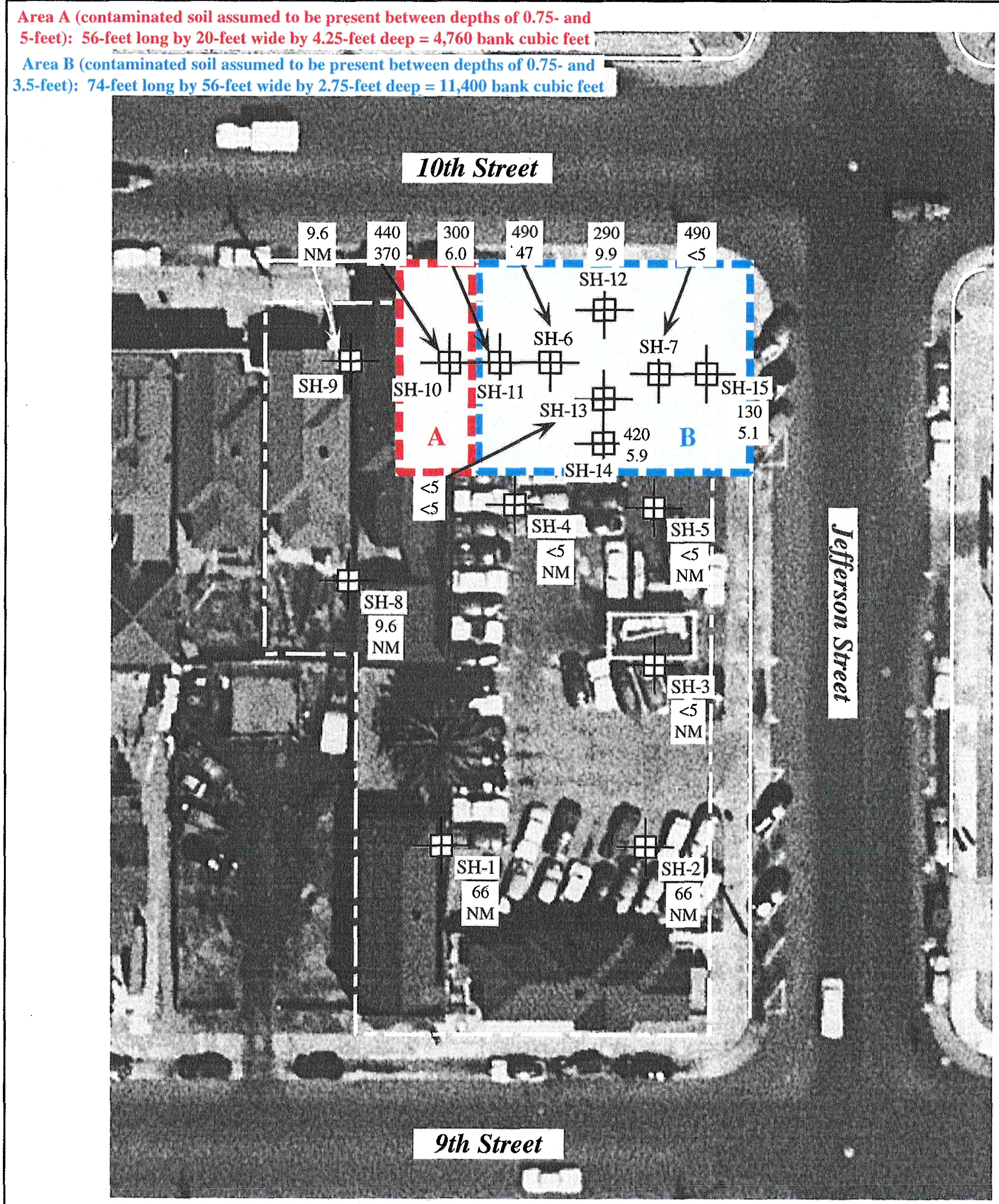

Area A (contaminated soil assumed to be present between depths of 0.75- and 5-feet): 56-feet long by 20-feet wide by 4.25-feet deep = 4,760 bank cubic feet

Area B (contaminated soil assumed to be present between depths of 0.75- and 3.5-feet): 74-feet long by 56-feet wide by 2.75-feet deep = 11,400 bank cubic feet

Legend

⌖	Soil sample
420	Concentration of Total Lead (mg/kg) from depth of 0.75-3.5 feet
5.9	Concentration of Total Lead (mg/kg) from depth of 3.5-5 feet
NM	Not measured

Aerial photo basemap obtained from Pacific Aerial Surveys, Oakland CA. Flown 14 April 1950.

Figure 3

Estimated Area of Lead-Contaminated Soil

901 Jefferson Street
Oakland CA

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ATTACHMENT 1

Standard Operating Procedure

STANDARD OPERATING PROCEDURE (SOP) 15A
HAND-AUGER DRILLING AND SOIL SAMPLING

1.0 INTRODUCTION AND SUMMARY

This SOP describes methods for drilling with the use of a hand-auger and soil sampling with the use of hand-driven core samplers. Drilling activities covered by this SOP may be conducted to obtain soil samples or to create a borehole within which a well may be constructed. Soil samples may be obtained to log subsurface materials, to collect samples for chemical characterization, or to collect samples for physical parameter characterization.

The soil sampling techniques described in this SOP are generally suitable for chemical characterization and physical classification tests; because a hand-driven core sampler is employed, the resulting soil samples should generally be considered "disturbed" with respect to physical structure and may not be suitable for measuring sensitive physical parameters, such as strength and compressibility. The augering techniques described in this SOP generally produce a borehole with: (1) a diameter of approximately 3 and 1/4-inches corresponding to the outside diameter of the auger, and (2) limited capability for cross-contamination between subsurface strata as the auger passes from contaminated strata to uncontaminated underlying strata. However, should conditions require strict measures to help prevent cross-contamination or maintain the integrity of an aquitard, consideration should be given to augmenting the procedures of this SOP, for example, by using pre-drilled and grouted isolation casing.

The procedures for hand-auger drilling and soil sampling generally consist of initial decontamination, advancement of the auger, driving and recovering the hand-driven core sampler, logging and packaging of the soil samples, decontamination of the core sampler (for chemical characterization samples), and continued augering and sampling until the total depth of the borehole is reached. Withdrawal of the auger upon reaching the total depth requires completion of the borehole by grouting, by constructing a well, or other measures.

2.0 EQUIPMENT AND MATERIALS

- Hand-auger: Art's Manufacturing & Supply Company regular head auger constructed of stainless steel or combination of carbon steel and stainless steel. Auger is 6 and 1/2-inches long with a nominal 3 and 1/4-inch outside diameter (some augers have different cutting edges depending on the type of soil anticipated). Attachments include a T-handle and threaded extension rods.
- Hand-driven core sampler: Art's Manufacturing & Supply Company core soil sampler constructed of stainless steel. Sampler is 12-inches long with a nominal 2-inch inside diameter and 2- and 1/2-inch outside diameter. Sampler is driven by a hand-lifted 11-pound slide hammer dropped 20-inches. The core sampler type, size and diameter of the sampler, and weight and drop distance of the slide hammer should be noted on the boring log.
- Liners should be 6-inch length with a nominal 2-inch diameter, fitted with plastic end-caps, brass or stainless steel. The boring log should note whether brass or stainless steel liners were used.
- Teflon sheets, approximate 6-mil thickness, precut to a diameter or width of the liner diameter plus approximately 1 inch
- 1/2-pint widemouth glass jars, laboratory cleaned

- Kimwipes, certified clean silica sand, or deionized water (for blank sample preparation)
- Post-hole digger
- 16-pound breaker bar
- Duct tape
- Sample labels, boring log forms, chain-of-custody forms, hazardous waste labels, and daily report forms
- Ziploc plastic bags of size to accommodate a liner
- Stainless steel spatula and knife
- Cooler with ice or dry ice (do not use blue ice)
- Field organic vapor monitor. The make, model, and calibration information of the field organic vapor monitor (including compound and concentration of calibration gas) should be noted on the boring log.
- Aluminum foil and rubber bands
- Pressure washer or steam cleaner
- Buckets and bristle brushes for decontamination.
- Low residue, organic free soap such as Liquinox or Alconox.
- Distilled water.
- Steel, 55-gallon, open-top drums.

As specified in the Site Safety Plan, additional safety and personnel decontamination equipment and materials may be needed.

3.0 TYPICAL PROCEDURES

The following typical procedures are intended to cover the majority of drilling and sampling conditions. However, normal field practice requires re-evaluation of these procedures and implementation of alternate procedures upon encountering unusual or unexpected subsurface conditions. Deviations from the following typical procedures may be expected and should be noted on the boring log.

1. Decontaminate hand-auger, hand-driven core sampler and other drilling equipment immediately prior to mobilization to the site.
2. Investigate the location of the proposed boreholes for buried utilities and obstructions. At least 48 hours before drilling, contact known or suspected utility services individually or collectively through services such as "USA" and "Underground Alert". As appropriate, retain private buried utility location services or geophysical investigation services to search for buried utilities and obstructions. Also as appropriate, pothole suspect utility locations prior to drilling or relocate boreholes. During initial advancement of each borehole, use post-hole diggers to break the ground surface and cautiously explore the first 1- to 2-feet for buried utilities. Continue boring with hand-auger and exercise caution by having the operator pay particular attention to the "feel" of the hand-auger. The suspected presence of an obstruction, buried pipeline or cable,

utility trench backfill, or similar may be cause for suspension of drilling, subject to further investigation.

3. Advance the hand-auger to the desired sampling depth. Note depth interval, augering conditions, and hand-auger operator's comments on boring log. (Should subsurface conditions cause difficult augering, remove hand-auger and use the 16-pound breaker bar to soften resistant material; continue hand-augering.) Samples should be taken at intervals of 5-feet or less in homogeneous strata and at detectable changes of strata.
4. Remove hand-auger and note presence of water mark on the extension rod or auger, if any. Monitor top of boring using field organic vapor monitor, as appropriate.
5. Decontaminate core sampler, liners, spatulas and knives, and other equipment that may directly contact the chemical characterization sample. Fit core sampler with liner and attach to extension rod. Remove turning crossbar and attach sampling hammer.
6. Lower hand-driven core sampler through boring until sampler is resting on soil. Mark the point 6-inches above the ground surface on the extension rod for hammer blow count. Drive (with the hammer) and recover the core sampler. Record depth interval, hammer blows for 6-inches, and sample recovery on boring log. Monitor the recovered core sampler with the field organic vapor monitor, as appropriate.
7. Remove the liner from the core sampler for purposes of chemical characterization and/or physical parameter testing. Observe soil at each end of liner(s) for purposes of completing sample description. Place Teflon sheet at each end of liner, cover with plastic caps, and tape plastic caps with duct tape (do not use electrical tape) to further minimize potential loss of moisture or volatile compounds. Label liner(s) and place in ziplock bag on ice or dry ice inside cooler.
8. If headspace screening to be performed, place subsample of soil in a glass jar and cover with aluminum foil. After allowing the soil in the jar to equilibrate for 5 minutes, screen for organic vapors with the field organic vapor monitor by inserting the probe through the aluminum foil. Record depth interval, observed sample reading, and ambient (background) reading on the boring log. Glass jars may be reused by discarding the soil subsample and wiping any residue from the jar using a paper towel.
9. Visually classify soil sample in approximate accordance with ASTM D 2488 - Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). Descriptions should include moisture content, color, textural information, group symbol, group name, and odor. Optional descriptions, especially if classification is performed with protective gloves, include particle angularity and shape, clast composition, plasticity, dilatancy, dry strength, toughness, and reaction with HCl. Add notes pertaining to geologic structure of sample, as appropriate. Record depth interval, visual classification, and other notes to the boring log.
10. Repeat steps 3 through 10 until total depth of borehole is reached.
11. Complete borehole according to the specific project requirements.
12. Decontaminate hand-auger, extension rods, and core sampler between boreholes and after finishing last borehole prior to leaving the project site.

13. Change decontamination solutions and clean decontamination buckets, and brushes between boreholes.
14. Containerize soil cuttings, excess soil sample, and decontamination wastewater in steel drums. Affix hazardous waste labels to the drums.
15. Complete the boring by backfilling with grout. Unless otherwise delineated in the Workplan, Quality Assurance Project Plan, or Sampling Plan, grout may consist of:

    - neat cement grout, using 1 sack (94 pounds dry weight) of Type I/II Portland cement to 5 gallons of water, or
    - cement-bentonite grout using the same basic formula but substituting approximately 5% powdered bentonite for part of the cement.

    Local requirements may require inspection of grout seal placement by the regulating authority.

    If augers or temporary casing remain in the borehole during grouting, the level of the grout should be kept above the tip of the augers or casing to help prevent inclusions of formation material in the grout seal.

    The volume of the grout actually used should be recorded and compared to the theoretical annular volume of the sealed interval. Any discrepancies should be noted.
16. Complete pertinent portion of the chain-of-custody form and daily activity report. Keep custody of samples until transferred to the laboratory.

4.0 QUALITY ASSURANCE AND QUALITY CONTROL

Quality control samples are optional.

Sequential replicates may be collected at an approximate frequency of 1 sequential replicate for every 10 natural samples. Sequential replicates are collected by driving the core sampler twice and collecting two adjacent samples without hand-auger advancement. Each sample is labeled according to normal requirements. The replicate samples obtained in such a manner are suitable for assessing the reproducibility of both chemical and physical parameters. Interpretations of data reproducibility should recognize the potential for significant changes in soil type and chemical concentrations, even over 6-inch intervals. Accordingly, sequential replicates do not supply the same information as normally encountered duplicate or split samples. Duplicate or split samples are better represented by analyzing subsamples of soil from the same liner.

Field blanks may be collected at an approximate frequency of 1 field blank for every 10 natural samples. Field blanks may be prepared by (1) swipe sampling decontaminated liner and core sampler with kimwipes, (2) pouring clean silica sand into a decontaminated hand-driven core sampler that has been fitted with a liner, or (3) pouring deionized water over the decontaminated liner and core sampler and collecting the water that contacts the sampling equipment for aqueous analysis.

The comparability of the field visual classification may be checked by conducting laboratory classification tests.

5.0 DOCUMENTATION

Observations, measurements, and other documentation of drilling and soil sampling activities should be recorded on the following:

- Daily Report
- Field Notebook
- Boring Log
- Soil Sampling Form
- Chain-of-Custody Form

Documentation should include any deviations from this SOP, notations of unusual or unexpected conditions, and documentation of the containerization and disposition/disposal of investigation-derived waste. Specific instructions for selected forms are provided below.

6.0 DECONTAMINATION

The drilling equipment (hand-auger, core sampler, shovels, buckets and brushes, etc.) should be decontaminated at the following intervals:

- Before entering the project site
- Between each borehole (fresh decontamination solutions should also be prepared between boreholes)
- Prior to leaving the project site

In addition, prior to each sample, the hand-driven core sampler, liners, spatulas and knives, and other equipment or materials that may directly contact the sample should be decontaminated.

Decontamination for these items should consist of a soap wash (Alconox, Liquinox, or other organic free - low residue soap), followed by a tap water rinse, followed by a distilled water rinse. Wastewater from the soap wash should be temporarily contained. Wastewater from the tap water and distilled water rinses may be discharged to the ground surface or a sanitary sewer.

7.0 INVESTIGATION-DERIVED WASTE

Wastes resulting from the activities of this SOP may include soil cuttings, excess soil sample, decontamination wastewater, and miscellaneous waste (paper, plastic, gloves, jars, aluminum foil, site safety disposable, etc.) Unless otherwise prohibited by the Site Safety Plan, miscellaneous waste should be disposed of as municipal waste.

Soil cuttings and excess soil sample from each borehole should be placed in individual steel drums with labels affixed. Solids from multiple boreholes may be combined within a single drum if field observations (presence or absence of chemical staining and field organic vapor monitoring) indicate the solids are similarly uncontaminated or similarly contaminated.

Decontamination wastewater should be placed in individual steel drums with labels affixed. Wastewater from multiple boreholes may be combined, subject to the same limitations as solids.

8.0 SAFETY

Normal and special safety precautions are described in the Site Safety plan. The Site Safety plan should be reviewed periodically during drilling to stay apprised of important safety measures.

Chemical hazards are typically discovered upon withdrawal of the auger or withdrawal of the soil-filled core sampler, as well as removal of the soil-filled liner from the core sampler. Opportune monitoring for volatile chemicals may be conducted at these times. Splash protection and direct contact protection are also essential measures to minimize the potential for chemical exposure.

9.0 REFERENCES

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ATTACHMENT 2

Chain-of-Custody Forms

233/157830 - 157839

36702

STREAMBORN CHAIN-OF-CUSTODY

Project Name: 901 Jefferson Street	Project Location: Oakland CA	Project Number: P135
Sampler: K. Alexander/E. Kwong	Laboratory: Chromalab	Laboratory Number:

SUBM #: 9711233 REP: PM
CLIENT: STREAM
DUE: 11/24/97
REF #:36702

			Matrix			Type		Containers				Turnaround		Analyses								
Sample Designation	Date	Time	Soil	Water	Vapor	Grab	Composite	Quantity	Type	Preservative	Filtration	24-Hour	Standard	TPH-Motor Oil	TPH-Kerosene	TPH-Diesel	TPH-Gasoline	EPA 8020	EPA 8010	Total Lead	Sampler Comments	Laboratory Comments
SH1/SH2(0.75-3.5)	16-Nov-97	12:50	X				X	1	bag				X	X	X	X				X	results by 11/25	
SH5(1.25-1.75)	16-Nov-97	13:15	X			X		1	liner				X				X	X	X		results by 11/25	
SH7(1.25-1.75)	16-Nov-97	13:40	X			X		1	liner				X				X	X	X		results by 11/25	
SH6(1.25-1.75)	16-Nov-97	14:25	X			X		1	liner				X				X	X	X		results by 11/25	
SH6/SH7(0.75-3.5)	16-Nov-97	14:30	X				X	1	bag				X	X	X	X				X	results by 11/25	
SH4(1.25-1.75)	16-Nov-97	14:50	X			X		1	liner				X				X	X	X		results by 11/25	
SH4/SH5(0.75-3.5)	16-Nov-97	15:00	X				X	1	bag				X	X	X	X				X	results by 11/25	
SH8/SH9(0.75-3.5)	16-Nov-97	15:30	X				X	1	bag				X	X	X	X				X	results by 11/25	
SH3(1.25-1.75)	16-Nov-97	15:50	X			X		1	liner				X				X	X	X		results by 11/25	
SH3(0.75-3.5)	16-Nov-97	16:00	X				X	1	bag				X	X	X	X				X	results by 11/25	

Note: Sampler and laboratory to observe preservative, condition, integrity, etc. of samples and record (under "Comments") any exceptions from standard protocols.

Relinquished By: K. B.	Received By:	Date: 11·17·97 Time: 1310
Relinquished By:	Received By: Mike Naranjo	Date: 11/17/97 Time: 1418

11403/159963-159964

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

ADD ON/CHANGE ORDER

New Submission No: 9711403

Order No: 36939

Original Submission Info

Client Name: STREAMBORN

Project Mgr: KEG ALEXANDER

Project Name: 901 JEFFERSON ST.

Project No: P135

PO#:

Date Received: 11/17/97

Submission No: 9711233

Name of Caller: K. ALEXANDER

Call Date: 11/26/97 Time:

Add on Due Date: 12/3/97 Date Sampled 11/16/97

Comments: Due by Noon

RUSH

SUBN #: 9711403 REP: PM
CLIENT: STREAM
DUE: 12/03/97
REF #:36939/9711233

					ANALYSIS REPORT																				
SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, [✓ STLC]) Pb				NUMBER OF CONTAINERS
SH6/SH7(75:35)	11/16/97		S																		X				1

12210/162104-162117

37168

STREAMBORN CHAIN-OF-CUSTODY

Project Name: 901 Jefferson Street	Project Location: Oakland CA	Project Number: P135
Sampler: K. Alexander/E. Kwong	Laboratory: Chromalab	Laboratory Number:

SUBM #: 9712210 REP: PM
CLIENT: STREAM
DUE: 12/17/97
REF #:37168

Sample Designation	Date	Time	Matrix			Type		Containers				Turnaround		Analyses								
			Soil	Water	Vapor	Grab	Composite	Quantity	Type	Preservative	Filtration	24-Hour	5-Day	Total Lead							Sampler Comments	Laboratory Comments
SH10(0.75-3.5)	10-Dec-97	8:30	X				X	1	bag				X	X								
SH10(3.5-5)	10-Dec-97	8:40	X				X	1	bag				X	X								
SH11(0.75-3.5)	10-Dec-97	9:05	X				X	1	bag				X	X								
SH11(3.5-5)	10-Dec-97	9:15	X				X	1	bag				X	X								
SH12(0.75-3.5)	10-Dec-97	9:35	X				X	1	bag				X	X								
SH12(3.5-5)	10-Dec-97	9:40	X				X	1	bag				X	X								
SH13(0.75-3.5)	10-Dec-97	10:00	X				X	1	bag				X	X								
SH13(3.5-5)	10-Dec-97	10:05	X				X	1	bag				X	X								
SH14(0.75-3.5)	10-Dec-97	10:35	X				X	1	bag				X	X								
SH14(3.5-5)	10-Dec-97	10:40	X				X	1	bag				X	X								
SH15(0.75-3.5)	10-Dec-97	11:05	X				X	1	bag				X	X								
SH15(3.5-5)	10-Dec-97	11:15	X				X	1	bag				X	X								
SH6(3.5-5)	10-Dec-97	11:30	X				X	1	bag				X	X								
SH7(3.5-5)	10-Dec-97	11:45	X				X	1	bag				X	X								

Note: Sampler and laboratory to observe preservative, condition, integrity, etc. of samples and record (under "Comments") any exceptions from standard protocols.

Relinquished By: K.B. Alf	Received By:	Date: 12-10-97	Time: 1525
Relinquished By:	Received By: Mike Naranjo	Date: 12/10/97	Time: 1807

STREAMBORN Mail: PO Box 8330, Berkeley CA 94707-8330 Office: 900 Santa Fe Ave, Albany CA 94706 510/528-4234 Fax: 528-2613

12345/163372 - 163375

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

ADD ON/CHANGE ORDER

New Submission No: 9712345

Order No: 37320

Original Submission Info

Client Name: STREAMBORN

Project Mgr: K. ALEXANDER

Project Name: 901 JEFFERSON ST.

Project No: P135

PO#:

Date Received: 12/10/97

Submission No: 9712210

Name of Caller: K. ALEXANDER

Call Date: 12/17/97 Time:

Add on Due Date: 12/24/97 Date Sampled 12/10/97

Comments:

SUBM #: 9712345 REP: PM
CLIENT: STREAM
DUE: 12/24/97
REF #:37320/9712210

					ANALYSIS REPORT																			
SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, [✓ STLC]) CAM17			NUMBER OF CONTAINERS
SH12(0.75-3.5)	12/10/97		S																		X			1
SH15(0.75-3.5)	↓		↓																		X			1

(SP) 175972 - 175980

SUBM #: 9803259 REP: PN
CLIENT: STREAM
DUE: 03/25/98
REF #:30781

30781

Project Name: 901 Jefferson Street	Project Location: Oakland CA · Project Number: P135
Sampler: K. Alexander	Laboratory: Chromalab Laboratory Number:

			Matrix			Type		Containers				Turnaround		Analyses					
Sample Designation	Date	Time	Soil	Water	Vapor	Grab	Composite	Quantity	Type	Preservative	Filtration	24-Hour	Standard	EP Tox soft water	EP Tox Sea Water	TCLP lead		Sampler Comments	Laboratory Comments
SH6, SH7, SH10, SH14 (0.75-3.5)	**18-Mar-98**	**9:00**	**X**				**X**	**2**	**bag**				**X**	**X**	**X**	**X**		**Multiple extractions for reclassification of Cal-hazardous waste (lead). See Pierre Monette for details.**	
LOGIN 4 TCLP Pb 2 TCLP with SEA WATER																		**Do not discard samples without permission from Streamborn.**	
2-TCLP with FRESH WATER																			

Note: Sampler and laboratory to observe preservative, condition, integrity, etc. of samples and record (under "Comments") any exceptions from standard protocols.

Relinquished By:	Received By:	3-18-98	Time: 15:30
Relinquished By:	Received By: C. Cassidy	3/18/98	Time: 16:55

STREAMBORN Mail: PO Box 8330, Berkeley CA 94707-8330 Office: 900 Santa Fe Ave, Albany CA 94706 510/528-4234 Fax: 528-2613

ATTACHMENT 3

Laboratory Data Reports

CHROMALAB, INC.
Environmental Services (SDB)

November 25, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: 1 sample for TEPH analysis.
Method: EPA 8015M

Matrix: SOIL *Extracted:* November 20, 1997
Sampled: November 16, 1997 *Run#:* 9797 *Analyzed:* November 21, 1997

Spl#	CLIENT SPL ID	Kerosene (mg/Kg)	Diesel (mg/Kg)	Motor Oil (mg/Kg)
157830	SH1/SH2(.75-3.5)	N.D.	4.9	N.D.

Note: Hydrocarbon reported as Diesel is in the late Diesel Range and does not match our Diesel Standard.

	Kerosene	Diesel	Motor Oil
Reporting Limits	1.0	1.0	50
Blank Result	N.D.	N.D.	N.D.
Blank Spike Result (%)	--	87.4	--

Bruce Havlik
Chemist

Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

November 25, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: 1 sample for TEPH analysis.
Method: EPA 8015M

Matrix: SOIL *Extracted:* November 20, 1997
Sampled: November 16, 1997 *Run#:* 9797 *Analyzed:* November 21, 1997

Spl#	CLIENT SPL ID	Kerosene (mg/Kg)	Diesel (mg/Kg)	Motor Oil (mg/Kg)
157831	SH6/SH7(.75-3.5)	N.D.	23	250

Note: Hydrocarbon reported as Diesel is in the late Diesel Range and does not match our Diesel Standard.

	Kerosene	Diesel	Motor Oil
Reporting Limits	4.0	4.0	80
Blank Result	N.D.	N.D.	N.D.
Blank Spike Result (%)	--	87.4	--

Bruce Havlik
Chemist

Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

November 25, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: 3 samples for TEPH analysis.
Method: *EPA 8015M*

Matrix: SOIL *Extracted:* November 20, 1997
Sampled: November 16, 1997 *Run#:* 9797 *Analyzed:* November 21, 1997

Spl#	CLIENT SPL ID	Kerosene (mg/Kg)	Diesel (mg/Kg)	Motor Oil (mg/Kg)
157832	SH4/SH5(.75-3.5)	N.D.	N.D.	N.D.
157833	SH8/SH9(.75-3.5)	N.D.	2.3	N.D.
	Note: Hydrocarbon reported is in the late Diesel Range and does not match our Diesel Standard.			
157834	SH3(.75-3.5)	N.D.	2.8	N.D.
	Note: Hydrocarbon reported is in the late Diesel Range and does not match our Diesel Standard.			
Reporting Limits		1.0	1.0	50
Blank Result		N.D.	N.D.	N.D.
Blank Spike Result (%)		--	87.4	--

Bruce Havlik
Chemist

Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN
Atten: Mark Buscheck
Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997
re: One sample for Halogenated Volatile Organics by GC/MS analysis.
Method: *SW846 Method 8240A Nov 1990*

Client Sample ID: **SH3(1.25-1.75)**
Spl#: 157839 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9776 *Analyzed:* November 18, 1997

ANALYTE	**RESULT (ug/Kg)**	**REPORTING LIMIT (ug/Kg)**	**BLANK RESULT (ug/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	10	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	105	1
CHLOROETHANE	N.D.	10	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	120	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	104	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1

Michael Lee
Chemist

Michael Verona
Operations Manager

CHROMALAB, INC.

Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN
Atten: Mark Buscheck
Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997
re: One sample for Halogenated Volatile Organics by GC/MS analysis.
Method: *SW846 Method 8240A Nov 1990*

Client Sample ID: **SH4(1.25-1.75)**
Spl#: 157838 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9776 *Analyzed:* November 18, 1997

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	10	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	105	1
CHLOROETHANE	N.D.	10	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	120	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	104	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1

Note: Recovery of toluene-d8 (surrogate) was outside of QC limit due to matrix interference.

Michael Lee
Chemist

Michael Verona
Operations Manager

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN
Atten: Mark Buscheck
Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997
re: One sample for Halogenated Volatile Organics by GC/MS analysis.
Method: SW846 Method 8240A Nov 1990

Client Sample ID: **SH6(1.25-1.75)**
Spl#: 157837 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9776 *Analyzed:* November 18, 1997

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	10	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	105	1
CHLOROETHANE	N.D.	10	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	120	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	104	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1

Note: Recovery of toluene-d8 (suurogate) was outside of QC limit due to matrix interference.

Michael Lee
Chemist

Michael Verona
Operations Manager

510-528-2613 PM 11/24

V058 0:QC0405 MINLEE 11

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN
Atten: Mark Buscheck
Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997
re: One sample for Halogenated Volatile Organics by GC/MS analysis.
Method: *SW846 Method 8240A Nov 1990*

Client Sample ID: **SH7(1.25-1.75)**
Spl#: 157836 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9776 *Analyzed:* November 18, 1997

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	10	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	105	1
CHLOROETHANE	N.D.	10	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	120	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	104	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1

Note: Recovery of toluene-d8 (surrogate) was outside of QC limit due to matrix interference.

Michael Lee
Chemist

Michael Verona
Operations Manager

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN
Atten: Mark Buscheck
Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997
re: One sample for Halogenated Volatile Organics by GC/MS analysis.
Method: *SW846 Method 8240A Nov 1990*

Client Sample ID: **SH5(1.25-1.75)**
Spl#: 157835 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9776 *Analyzed:* November 18, 1997

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	10	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	105	1
CHLOROETHANE	N.D.	10	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	120	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	104	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1

Note: Recovery of toluene-d8 (surrogate) was outside of QC limit due to matrix interference.

Michael Lee
Chemist

Michael Verona
Operations Manager

CHROMALAB, INC.

Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SH5(1.25-1.75)**
Spl#: 157835 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9842 *Analyzed:* November 22, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	89	1
BENZENE	N.D.	0.0050	N.D.	91	1
TOLUENE	N.D.	0.0050	N.D.	95	1
ETHYL BENZENE	N.D.	0.0050	N.D.	93	1
XYLENES	N.D.	0.0050	N.D.	90	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-528-2613

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096

PM V132 O:BTEXQC0220
KAYVAN 12:15

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SH7(1.25-1.75)**
Spl#: 157836 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9842 *Analyzed:* November 22, 1997

ANALYTE	**RESULT (mg/Kg)**	**REPORTING LIMIT (mg/Kg)**	**BLANK RESULT (mg/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
GASOLINE	N.D.	1.0	N.D.	89	1
BENZENE	N.D.	0.0050	N.D.	91	1
TOLUENE	N.D.	0.0050	N.D.	95	1
ETHYL BENZENE	N.D.	0.0050	N.D.	93	1
XYLENES	N.D.	0.0050	N.D.	90	1

Note: Surrogate Recoveries demonstrate Matrix interference.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-528-2613

PM V132 0:BTEXQC02
KAYVAN 12

CHROMALAB, INC.

Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SH6(1.25-1.75)**
Spl#: 157837 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9843 *Analyzed:* November 22, 1997

ANALYTE	**RESULT (mg/Kg)**	**REPORTING LIMIT (mg/Kg)**	**BLANK RESULT (mg/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
GASOLINE	N.D.	1.0	N.D.	86	1
BENZENE	N.D.	0.0050	N.D.	89	1
TOLUENE	N.D.	0.0050	N.D.	85	1
ETHYL BENZENE	N.D.	0.0050	N.D.	83	1
XYLENES	N.D.	0.0050	N.D.	81	1

Note: Surrogate Recoveries demonstrate Matrix interference.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-528-2613

PM V132 O:BTEXQC0220
KAYVAN 12:15

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SH4(1.25-1.75)**
Spl#: 157838 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9843 *Analyzed:* November 22, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	86	1
BENZENE	N.D.	0.0050	N.D.	89	1
TOLUENE	N.D.	0.0050	N.D.	85	1
ETHYL BENZENE	N.D.	0.0050	N.D.	83	1
XYLENES	N.D.	0.0050	N.D.	81	1

Note: Surrogate Recoveries demonstrate Matrix interference.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-528-2613

PM V132 0:BTEXQC02
KAYVAN 12

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SH3(1.25-1.75)**
Spl#: 157839 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9843 *Analyzed:* November 22, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	86	1
BENZENE	N.D.	0.0050	N.D.	89	1
TOLUENE	N.D.	0.0050	N.D.	85	1
ETHYL BENZENE	N.D.	0.0050	N.D.	83	1
XYLENES	N.D.	0.0050	N.D.	81	1

Note: Surrogate Recoveries demonstrate Matrix interference.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-528-2613

PM V132 O:BTEXQC0220
KAYVAN 12:18

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: **Blank spike and duplicate** report for Gasoline BTEX analysis.

Method: SW846 8020A Nov 1990 / 8015Mod

Matrix: SOIL
Lab Run#: 9842 *Analyzed:* November 21, 1997

Analyte	Spike Amount BSP (mg/Kg)	Spike Amount Dup	Spike Amount Found BSP (mg/Kg)	Spike Amount Found Dup	Spike Recov BSP (%)	Spike Recov Dup (%)	Control Limits	% RPD	% RPD Li
GASOLINE	0.500	0.500	0.447	0.587	89.4	117	75-125	26.7	35
BENZENE	0.100	0.100	0.0913	0.0820	91.3	82.0	77-123	10.7	35
TOLUENE	0.100	0.100	0.0945	0.0839	94.5	83.9	78-122	11.9	35
ETHYL BENZENE	0.100	0.100	0.0934	0.0830	93.4	83.0	70-130	11.8	35
XYLENES	0.300	0.300	0.269	0.241	89.7	80.3	75-125	11.0	35

BS Smpl #: 158963
BSD Smpl #: 158964

QC_BSD1226 KAYVAN 12 16 04

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: **Blank spike and duplicate** report for Gasoline BTEX analysis.

Method: SW846 8020A Nov 1990 / 8015Mod

Matrix: SOIL
Lab Run#: 9843 *Analyzed:* November 21, 1997

Analyte	Spike Amount BSP (mg/Kg)	Spike Amount Dup	Spike Amount Found BSP (mg/Kg)	Spike Amount Found Dup	Spike Recov BSP (%)	Spike Recov Dup (%)	Control Limits	% RPD	% RPD Lim
GASOLINE	0.500	0.500	0.430	0.499	86.0	99.8	75-125	14.8	35
BENZENE	0.100	0.100	0.0892	0.0899	89.2	89.9	77-123	0.78	35
TOLUENE	0.100	0.100	0.0846	0.0860	84.6	86.0	78-122	1.64	35
ETHYL BENZENE	0.100	0.100	0.0831	0.0841	83.1	84.1	70-130	1.20	35
XYLENES	0.300	0.300	0.244	0.248	81.3	82.7	75-125	1.71	35

BS Smpl #: 158968
BSD Smpl #: 158969

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997

Submission #: 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: **Surrogate** report for 2 samples for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod
Lab Run#: 9842
Matrix: SOIL

Sample#	Client Sample ID	Surrogate	% Recovered	Recovery Limits
157835-1	SH5(1.25-1.75)	TRIFLUOROTOLUENE	75.4	65-135
157835-1	SH5(1.25-1.75)	4-BROMOFLUOROBENZENE	73.7	65-135
157836-1	SH7(1.25-1.75)	TRIFLUOROTOLUENE	78.9	65-135
157836-1	SH7(1.25-1.75)	4-BROMOFLUOROBENZENE	73.7	65-135
157836-2	SH7(1.25-1.75)	TRIFLUOROTOLUENE	1.24	65-135
157836-2	SH7(1.25-1.75)	4-BROMOFLUOROBENZENE	1.64	65-135

Sample#	QC Sample Type	Surrogate	% Recovered	Recovery Limits
158962-1	*Reagent blank (MDB)*	TRIFLUOROTOLUENE	87.9	65-135
158962-1	*Reagent blank (MDB)*	4-BROMOFLUOROBENZENE	94.9	65-135
158963-1	*Spiked blank (BSP)*	TRIFLUOROTOLUENE	93.9	65-135
158963-1	*Spiked blank (BSP)*	4-BROMOFLUOROBENZENE	114	65-135
158964-1	*Spiked blank duplicate (BSD)*	TRIFLUOROTOLUENE	87.9	65-135
158964-1	*Spiked blank duplicate (BSD)*	4-BROMOFLUOROBENZENE	84.1	65-135

V132
QCSURR1229 KAYVAN 24-Nov-97 12

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: **Surrogate** report for 3 samples for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod
Lab Run#: 9843
Matrix: SOIL

Sample#	Client Sample ID	Surrogate	% Recovered	Recovery Limits
157837-1	SH6(1.25-1.75)	TRIFLUOROTOLUENE	51.8	65-135
157837-1	SH6(1.25-1.75)	4-BROMOFLUOROBENZENE	30.5	65-135
157837-2	SH6(1.25-1.75)	TRIFLUOROTOLUENE	41.3	65-135
157837-2	SH6(1.25-1.75)	4-BROMOFLUOROBENZENE	19.8	65-135
157838-1	SH4(1.25-1.75)	TRIFLUOROTOLUENE	57.4	65-135
157838-1	SH4(1.25-1.75)	4-BROMOFLUOROBENZENE	56.1	65-135
157838-2	SH4(1.25-1.75)	TRIFLUOROTOLUENE	38.0	65-135
157838-2	SH4(1.25-1.75)	4-BROMOFLUOROBENZENE	46.2	65-135
157839-1	SH3(1.25-1.75)	TRIFLUOROTOLUENE	75.7	65-135
157839-1	SH3(1.25-1.75)	4-BROMOFLUOROBENZENE	63.0	65-135
157839-2	SH3(1.25-1.75)	TRIFLUOROTOLUENE	0.786	65-135
157839-2	SH3(1.25-1.75)	4-BROMOFLUOROBENZENE	1.77	65-135

Sample#	QC Sample Type	Surrogate	% Recovered	Recovery Limits
158967-1	*Reagent blank (MDB)*	TRIFLUOROTOLUENE	103	65-135
158967-1	*Reagent blank (MDB)*	4-BROMOFLUOROBENZENE	104	65-135
158968-1	*Spiked blank (BSP)*	TRIFLUOROTOLUENE	96.0	65-135
158968-1	*Spiked blank (BSP)*	4-BROMOFLUOROBENZENE	99.8	65-135
158969-1	*Spiked blank duplicate (BSD)*	TRIFLUOROTOLUENE	99.8	65-135
158969-1	*Spiked blank duplicate (BSD)*	4-BROMOFLUOROBENZENE	105	65-135

V132
QCSURR1229 KAYVAN 24-Nov-97 12

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: 5 samples for Lead analysis.
Method: *EPA 3050A/7420A*

Matrix: SOIL *Extracted:* November 24, 1997
Sampled: November 16, 1997 *Run#:* 9860 *Analyzed:* November 24, 1997

Spl#	CLIENT SPL ID	LEAD (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
157830	SH1/SH2(.75-3.5)	66	5.0	N.D.	93.2	1
157831	SH6/SH7(.75-3.5)	490	5.0	N.D.	93.2	1
157832	SH4/SH5(.75-3.5)	N.D.	5.0	N.D.	93.2	1
157833	SH8/SH9(.75-3.5)	9.6	5.0	N.D.	93.2	1
157834	SH3(.75-3.5)	N.D.	5.0	N.D.	93.2	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

December 3, 1997 *Submission #:* 9711403

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON ST. *Project#:* P135
Received: November 17, 1997

re: 1 sample for STLC Lead analysis.
Method: *EPA 3005A/7420A*

Matrix: SOIL *Extracted:* December 1, 1997
Sampled: November 16, 1997 *Run#:* 9954 *Analyzed:* December 1, 1997

Spl#	CLIENT SPL ID	LEAD (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
159963	SH6/SH7(75-3.5)	10	1.0	N.D.	108	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

510-528-2613 PM 12/03

M015 0:QC0405 JOHN 14:30

CHROMALAB, INC.

Environmental Services (SDB)

December 3, 1997 *Submission #:* 9711403

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON ST. *Project#:* P135
Received: November 17, 1997

re: 1 sample for TCLP Lead analysis.
Method: *EPA 3010A/7420A*

Matrix: SOIL *Extracted:* December 1, 1997
Sampled: November 16, 1997 *Run#:* 9955 *Analyzed:* December 1, 1997

Spl#	**CLIENT SPL ID**	**LEAD (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
159964	SH6/SH7(75-3.5)	N.D.	1.0	N.D.	99.4	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

December 16, 1997 *Submission #:* 9712210

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: December 10, 1997

re: 14 samples for Lead analysis.
Method: *EPA 3050A/7420A*

Matrix: SOIL *Extracted:* December 12, 1997
Sampled: December 10, 1997 *Run#:* 10186 *Analyzed:* December 12, 1997

Spl#	CLIENT SPL ID	LEAD (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
162104	SH10(0.75-3.5)	440	5.0	N.D.	96.4	1
162105	SH10(3.5-5)	370	5.0	N.D.	96.4	1
162106	SH11(0.75-3.5)	300	5.0	N.D.	96.4	1
162107	SH11(3.5-5)	6.0	5.0	N.D.	96.4	1
162108	SH12(0.75-3.5)	290	5.0	N.D.	96.4	1
162109	SH12(3.5-5)	9.9	5.0	N.D.	96.4	1
162110	SH13(0.75-3.5)	N.D.	5.0	N.D.	96.4	1
162111	SH13(3.5-5)	N.D.	5.0	N.D.	96.4	1
162112	SH14(0.75-3.5)	420	5.0	N.D.	96.4	1
162113	SH14(3.5-5)	5.9	5.0	N.D.	96.4	1
162114	SH15(0.75-3.5)	130	5.0	N.D.	96.4	1
162115	SH15(3.5-5)	5.1	5.0	N.D.	96.4	1
162116	SH6(3.5-5)	47	5.0	N.D.	96.4	1
162117	SH7(3.5-5)	N.D.	5.0	N.D.	96.4	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

December 29, 1997 *Submission #:* 9712345

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON ST *Project#:* P135
Received: December 10, 1997

re: One sample for STLC Misc Metals analysis.
Method: *3005A/6010A/7470A Nov 1990*

Client Sample ID: **SH12 (0.75-3.5)**
Spl#: 164288 *Matrix:* SOIL *Extracted:* December 29, 1997
Sampled: December 10, 1997 *Run#:* 10409 *Analyzed:* December 29, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTIO FACTOR
LEAD	18	0.50	N.D.	96.6	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

510-528-2613 PM 12/29

M017 0:0C0405 JOHN 1

CHROMALAB, INC.
Environmental Services (SDB)

December 24, 1997 *Submission #:* 9712345

STREAMBORN

Atten: K. Alexander

Project: 901 JEFFERSON ST. *Project#:* P135
Received: December 10, 1997

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH12(0.75-3.5)**
Spl#: 163373 *Matrix:* SOIL *Extracted:* December 23, 1997
Sampled: December 10, 1997 *Run#:* 10367 *Analyzed:* December 23, 1997

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	N.D.	0.50	N.D.	99.4	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096

CHROMALAB, INC.
Environmental Services (SDB)

December 29, 1997 *Submission #:* 9712345

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON ST *Project#:* P135
Received: December 10, 1997

re: One sample for STLC Misc Metals analysis.
Method: *3005A/6010A/7470A Nov 1990*

Client Sample ID: **SH15 (0.75-3.5)**
Spl#: 164287 *Matrix:* SOIL *Extracted:* December 29, 1997
Sampled: December 10, 1997 *Run#:* 10409 *Analyzed:* December 29, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
LEAD	20	0.50	N.D.	96.6	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

December 24, 1997 *Submission #:* 9712345

STREAMBORN

Atten: K. Alexander

Project: 901 JEFFERSON ST. *Project#:* P135
Received: December 10, 1997

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH15(0.75-3.5)**
Spl#: 163375 *Matrix:* SOIL *Extracted:* December 23, 1997
Sampled: December 10, 1997 *Run#:* 10367 *Analyzed:* December 23, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
LEAD	0.66	0.50	N.D.	99.4	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

December 29, 1997 *Submission #:* 9712439

CHROMALAB

Atten: Pierre Monette

Project: STREAMBORN/P135
Received: December 10, 1997

re: 1 sample for Lead analysis.
Method: *EPA 3050A/7420A*

Matrix: SOIL *Extracted:* December 26, 1997
Sampled: December 10, 1997 *Run#:* 10401 *Analyzed:* December 26, 1997

Spl#	CLIENT SPL ID	LEAD (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
164231	SH15 (0.75-3.5)	310	5.0	N.D.	104	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

December 29, 1997

Submission #: 9712439

CHROMALAB

Atten: Pierre Monette

Project: STREAMBORN/P135
Received: December 10, 1997

re: 1 sample for STLC Lead analysis.
Method: *EPA 3005A/7420A*

Matrix: SOIL
Sampled: December 10, 1997
Run#: 10416
Extracted: December 29, 1997
Analyzed: December 29, 1997

Spl#	CLIENT SPL ID	LEAD (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
164232	SH15 (0.75-3.5)	22	1.0	N.D.	106	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

March 25, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH6,7,10,14(0.75-3)-TCLP1**
Spl#: 175973 *Matrix:* SOIL *Extracted:* March 24, 1998
Sampled: March 18, 1998 *Run#:* 11802 *Analyzed:* March 25, 1998

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
LEAD	N.D.	0.50	N.D.	105	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

March 25, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH6,7,10,14(0.75-3)-TCLP2**
Spl#: 175974 *Matrix:* SOIL *Extracted:* March 24, 1998
Sampled: March 18, 1998 *Run#:* 11802 *Analyzed:* March 25, 1998

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	0.62	0.50	N.D.	105	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

March 25, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH6,7,10,14(0.75-3)-TCLP3**
Spl#: 175975 *Matrix:* SOIL *Extracted:* March 24, 1998
Sampled: March 18, 1998 *Run#:* 11802 *Analyzed:* March 25, 1998

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	N.D.	0.50	N.D.	105	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

March 25, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH6,7,10,14(0.75-3)-TCLP4**
Spl#: 175976 *Matrix:* SOIL *Extracted:* March 24, 1998
Sampled: March 18, 1998 *Run#:* 11802 *Analyzed:* March 25, 1998

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	N.D.	0.50	N.D.	105	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

March 31, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 1320 Mod-CA Fresh Water/3010A/6010A*

Client Sample ID: **SH6,7,10,14(0.75-3)FRESH1**
Spl#: 175979 *Matrix:* SOIL *Extracted:* March 30, 1998
Sampled: March 18, 1998 *Run#:* 11877 *Analyzed:* March 30, 1998

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	0.065	0.050	N.D.	104	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

March 31, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 1320 Mod-CA Fresh Water/3010A/6010A*

Client Sample ID: **SH6,7,10,14(0.75-3)FRESH2**
Spl#: 175980 *Matrix:* SOIL *Extracted:* March 30, 1998
Sampled: March 18, 1998 *Run#:* 11877 *Analyzed:* March 30, 1998

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
LEAD	N.D.	0.050	N.D.	104	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

March 31, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 1320 Mod-CA Sea Water/3010A/6010A*

Client Sample ID: **SH6,7,10,14(0.75-3)SEA1**
Spl#: 175977 *Matrix:* SOIL *Extracted:* March 30, 1998
Sampled: March 18, 1998 *Run#:* 11877 *Analyzed:* March 30, 1998

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	N.D.	0.050	N.D.	104	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

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CHROMALAB, INC.
Environmental Services (SDB)

March 31, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 1320 Mod-CA Sea Water/3010A/6010A*

Client Sample ID: **SH6,7,10,14(0.75-3)SEA2**
Spl#: 175978 *Matrix:* SOIL *Extracted:* March 30, 1998
Sampled: March 18, 1998 *Run#:* 11877 *Analyzed:* March 30, 1998

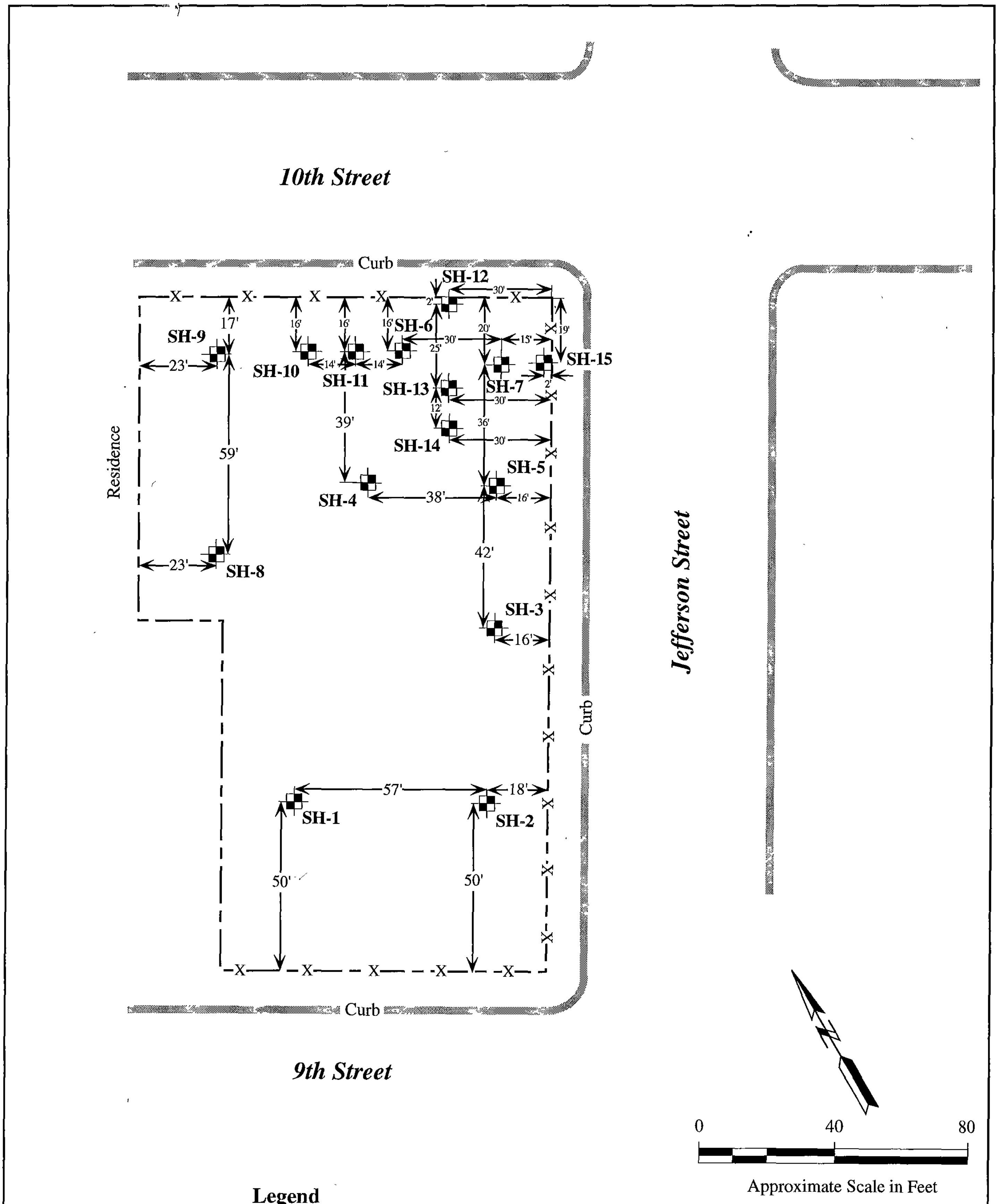
ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	N.D.	0.050	N.D.	104	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

ATTACHMENT 4

Dimensioned Sample Locations



Legend

⊞	Shallow soil sample
— — —	Property line
X——X	Fence

Dimensioned Sample Locations

901 Jefferson Street
Oakland CA

STREAMBORN

STREAMBORN

510/528-4234
Fax 528-2613

Ronald Pilorin
California Environmental Protection Agency
Department of Toxic Substances Control
Human and Ecological Risk Division
PO Box 806
Sacramento CA 95812-0806

26 June 1998

Project No. P224

Petition (Application) for Reclassification of Lead-Contaminated Soil
901 Jefferson Street
Oakland CA

Dear Mr. Pilorin:

The attached petition (application) is submitted to obtain the Department's concurrence that lead-contaminated soil at the subject site, which is toxic according to the WET test, may be managed as nonhazardous waste. Specifically, the contaminated soil will be managed as a designated solid waste pursuant to 23 CCR 2520 and disposed of in a local Class II landfill.

This petition is submitted pursuant to 22 CCR 66260.200(f).

Accompanying this petition is check #5055 in the amount of $9,621.00.

If there are any questions or if additional information is needed, please call.

Sincerely,

STREAMBORN

K.B. Alex

Kenneth B. Alexander, RG, CH
Certified Hydrogeologist

For:

Douglas W. Lovell, PE
Geoenvironmental Engineer

Attachments

cc: Douglas N. Salter/Summit Realty Interests, Denver CO
Wayne D. Jordan/Berkeley CA

STREAMBORN

510/528-4234
Fax 528-2613

Petition (Application) for Reclassification of Lead-Contaminated Soil
901 Jefferson Street
Oakland CA

Prepared For
Douglas N. Salter
Denver CO

Prepared By
STREAMBORN
Berkeley CA
Project No. P224

26 June 1998

CONTENTS

GENERAL INFORMATION

Nature of the petition

Reclassification of lead-contaminated soil from hazardous to nonhazardous

Waste generation

The lead-contaminated soil will be excavated during construction activities at 901 Jefferson Street, Oakland CA

Generator

Douglas N. Salter
Summit Realty Interests
PO Box 1970
Silverthorne CO 80498
970/262-1970

Contact Person

Douglas W. Lovell
Streamborn
PO Box 8330
Berkeley CA 94707-8330
510/528-4234

EXECUTIVE SUMMARY

The subject site, 901 Jefferson Street, Oakland CA, is currently a parking lot and will be redeveloped for commercial and/or residential occupancy. Soil will be excavated during redevelopment, approximately 900 truck cubic yards of which will be California-only (non-RCRA) hazardous waste. The "hazardous" classification is due solely to the WET-soluble lead content of the soil.

Representative samples of the lead-contaminated soil were collected and analyzed for (1) total lead, and (2) soluble lead according to the WET, TCLP test, modified EP Toxicity test using fresh water, and modified EP Toxicity test using sea water. The results of these tests indicate the lead-contaminated soil has:

- Total lead content between approximately 100 and 500 mg/kg.
- WET-soluble lead content between approximately 10 and 20 mg/L.
- TCLP-soluble lead content less than approximately 0.7 mg/L.
- Fresh water EP Toxicity-soluble lead content less than approximately 0.07 mg/L.
- Sea water EP Toxicity-soluble lead content less than approximately 0.05 mg/L.

The analytical results (particularly the TCLP test results and the modified EP Toxicity test results using fresh and sea water) demonstrate that the lead-contaminated soil has mitigating physical or chemical characteristics which render it insignificant as a hazard to human health and safety, livestock and wildlife. Accordingly, the lead-contaminated soil should be classified as nonhazardous instead of hazardous.

After reclassification, the lead-contaminated soil will become a designated solid waste pursuant to 23 CCR 2520 and will be disposed of in a local Class II landfill.

BACKGROUND INFORMATION

The subject site, 901 Jefferson Street, Oakland CA (Figure 1) was operated as an automotive service station between 1946 and 1953. Circa 1953, the service station was demolished and the property was paved. Since that time, the property has been used as a parking lot.

From 1989 to 1996, the property was investigated and remediated as an underground storage tank release site. During this period, numerous soil and groundwater samples were collected and analyzed; most samples were collected at depth and analyzed for petroleum constituents. Remediation consisted on insitu biostimulation. In December 1996, a final remedial action completion certification was issued by Alameda County Environmental Health Services regarding petroleum releases at the site.

Current plans for the site include redevelopment for commercial and/or residential occupancy. Redevelopment will include partial excavation of the site to accommodate below-grade parking. During November 1997, December of 1997, and March 1998; fifteen shallow borings were drilled (Figure 2) and soil samples were collected and analyzed (Table 1) to evaluate whether the soil planned for excavation will need special management. Lead-contaminated soil was discovered in the northeast corner of the site, where aerial photos show the former pump island of the service station. A possible source of the lead in shallow soil is the historic spillage of leaded gasoline during dispensing activities (the gasoline has long since evaporated/biodegraded).

Subsurface conditions encountered in the borings typically consisted of:

- Approximately two inches of asphalt concrete underlain by approximately 7-inches of aggregate base.
- Silty Sand (SM). This stratum extended from below the aggregate base to a depth of at least 5-feet (the maximum depth drilled). This stratum was typically dark brown, medium-dense, and moist, with a fine sand texture. No chemical staining or odors were observed in the soil and no detectable measurements were observed when the soil was screened with a field organic vapor meter.

Volume Estimate

Streamborn evaluated the lateral and vertical extent of lead-contaminated soil at the site (Figure 2). The northern and eastern extent of lead-contaminated soil coincided with the curblines of 10th Street and Jefferson Street (the planned excavations will only extend to the curblines). The western and southern extent of lead-contaminated soil was assumed to be one-half way between "clean" borings and "contaminated" borings. The depth of the lead-contaminated soil was assumed to be between 0.75- and 3.5-feet, except in the vicinity of boring SH-10 where the depth was assumed to be between 0.75- and 5-feet. The 0.75-foot depth corresponds to the depth of pavement and aggregate base at the site, which are not contaminated. The 3.5-foot and 5-foot depths correspond to the vertical extent of contamination measured in the borings.

The volume of lead-contaminated soil shown on Figure 2 is approximately 600 bank cubic yards, which equates to approximately 700 truck cubic yards (using a 15% volume expansion). Because the soil has yet to be excavated, the exact volume is not yet known. We believe it is prudent to include an uncertainty factor in the volume estimate; using an uncertainty factor of 30%, the total estimated volume is 900 truck cubic yards.

TECHNICAL INFORMATION

Although numerous samples have been collected and analyzed at the site, only those pertinent to the lead-contaminated soil are discussed below.

Sample Collection

Boring locations (Figure 2) were selected based on historic use of the subject property. Within the area of lead-contaminated soil, one boring was performed for every 650 square feet (on average). This provided an equivalent boring spacing of 25-feet, which represents thorough coverage of the contaminated area.

Borings were drilled to a maximum depth of 5-feet using a solid-stem hand auger. During drilling, samples were collected by either (1) driving a 2-inch inside diameter by 2.5-inch outside diameter spoon sampler fitted with one 2-inch by 6-inch long metal liner, or (2) placing soil cuttings in a sample container. Liner and cutting samples were classified in the field in approximate accordance with ASTM D2488-93 (Standard Practice for Description and Identification of Soils, Visual-Manual Procedure). As well, the samples were screened in the field with an organic vapor meter (Thermo Environmental Instruments, Model 580B, equipped with a 10.2 eV photoionization detector, and calibrated to 100-ppm v/v isobutylene), and examined for evidence of chemical staining and odor.

The standard operating procedure we employed during sampling is included in Appendix 1. The sampling methodology conformed to the procedures and guidelines of EPA SW-846 (Test Methods for Evaluating Solid Waste, Physical/Chemical Methods).

Sample Analyses

Two types of soil samples were sent to the laboratory: grab samples and composite samples:

- Grab samples were collected in liners. Grab samples were analyzed for:
  - Volatile organic compounds (EPA Method 8240).
  - Total petroleum hydrocarbons as gasoline (TPH-gasoline) (EPA Method 8015).
  - Benzene, toluene, ethylbenzene, and xylenes (BTEX) (EPA Method 8020).
- Composite samples were collected from various locations and/or depth intervals. Composite samples were analyzed for:
  - TPH-kerosene, TPH-diesel, TPH-motor oil (EPA Method 8015).
  - Total lead (EPA Method 3050/7470).

- Soluble lead by the Waste Extraction Test (EPA Method 3005/7470).
- Soluble lead by the Toxicity Characteristic Leaching Procedure (EPA Method 1311/7470).
- Soluble lead by the EP Toxicity Test modified for sequential extraction using fresh water (EPA Method 1320/6010 modified) (this test was performed according to guidance issued by the DTSC – see Appendix D).
- Soluble lead by the EP Toxicity Test modified for sequential extraction using sea water (EPA Method 1320/6010 modified) (this test was performed according to guidance issued by the DTSC – see Appendix D).

The chain-of-custody forms and the laboratory data reports are appended.

Field corrosivity, reactivity, and ignitability tests were also performed on composite samples. Corrosivity testing was performed by measuring the pH of a soil/water slurry. The slurry was prepared by mixing equal weights of soil and distilled water. Field reactivity tests were performed by adding potassium permanganate and potassium iodine to the soil/water slurry, and observing any reaction. Ignitability tests were performed by exposing the soil to an open flame. Field tests were performed according to accepted hazardous categorization protocols.

Analytical Results

Analytical results for all shallow soil samples are summarized on Table 1. The results indicate that lead-contaminated soil is present in the northeast corner of the site. The results indicate the lead-contaminated soil is a California-only (non-RCRA) hazardous waste. The lead-contaminated soil contains WET-soluble lead between 10 and 22 mg/L, which exceeds the Soluble Threshold Limit Concentration (STLC) of 5 mg/L. The hazardous classification is attributable *solely* to the WET-soluble lead content of the soil.

Selected analytical results for the lead-contaminated soil (only) are summarized in Table 2.

The DTSC has developed guidance for reclassification of wastes with WET-soluble lead exceeding 5 mg/L (Appendix D). Reclassification is contingent on the following laboratory results:

- A minimum of four representative soil samples must be composited and subjected to multiple extractions using fresh water. Extractions are repeated until analysis reveals that the further addition of sample will yield no additional lead in the extractant. The soluble lead in the final extraction must be less than 0.083 mg/L.
- A minimum of four representative soil samples must be composited and subjected to multiple extractions using sea water. Extractions are repeated until analysis reveals that the further addition of sample will yield no additional lead in the

extractant. The soluble lead in the final extraction must be less than 0.14 mg/L.

- A minimum of four representative soil samples must be subjected to analysis by the TCLP. The mean soluble lead concentration of all analyzed samples must be less than 1.5 mg/L.

The analytical results satisfy these criteria. According to the DTSC guidance, the lead-contaminated soil can be reclassified as nonhazardous.

Statistical Analysis

Statistical characteristics were calculated for measurements of total lead, WET-soluble lead, and TCLP-soluble lead (Table 2), considering only the lead-contaminated soil. The statistical characteristics include: maximum, minimum, mean, standard deviation, and 90% upper confidence limit (10% probability of exceeding the calculated limit). The 90% upper confidence limit was calculated using the Student's t statistic (which assumes normally-distributed data). Statistical analyses conformed to the procedures and guidelines of EPA SW-846 (Test Methods for Evaluating Solid Waste, Physical/Chemical Methods).

The results of the statistical analysis indicate the 90% upper confidence limit is essentially equal to the maximum measured concentration. The results of the statistical analysis also indicate the 90% upper confidence limit for TCLP-soluble lead is approximately 0.7 mg/L, significantly less than the threshold of 1.5 mg/L stated in the DTSC reclassification guidance (Appendix D).

DISCUSSION

22 CCR 66260.200 allows non-RCRA hazardous waste to be reclassified as nonhazardous waste if DTSC finds that the waste possesses intrinsic mitigating physical and/or chemical properties which render the waste insignificant as a hazard to human health and safety, livestock and wildlife. The lead-contaminated soil in the northeast corner of the subject site exhibits such mitigating characteristics, including:

- The total lead concentration in the soil is relatively low (less than approximately 500 mg/L).
- The results of the TCLP testing indicate that the concentration of soluble lead present in the contaminated soil at the 90% upper confidence limit is less than 0.7 mg/L. The results of sequential EP Toxicity testing indicate that the concentration of soluble lead is less than 0.07 mg/L in fresh water and less than 0.05 mg/L in sea water. These three tests demonstrate the limited potential for the contaminated soil to pollute by leaching or by mixing with groundwater or surface water.
- The mobility of lead in the contaminated soil is generally expected to be low, particularly given the neutral pH and silty sand texture of the soil.
- Other than WET-soluble lead, the lead-contaminated soil does not exhibit hazardous characteristics.

Table 1

Analytical Results for Shallow Soil Samples Collected November 1997, December 1997, and March 1998

901 Jefferson Street, Oakland CA

Location	Depth (feet)	Sample Date	Sample Identification	Sample Type	OVM Screening (ppm v/v)	Odor and Staining	Field pH	Field Haz Cat Tests	TPH-Kerosene (mg/kg)	TPH-Diesel (mg/kg)	TPH-Motor Oil (mg/kg)	TPH-Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Other VOCs (mg/kg)	Total Lead (mg/kg)	Other Analyses
SH-1 and SH-2	0.75 to 3.5	16 Nov 97	SH1/SH2(0.75-3.5)	Composite	<5	none	NM	none	<1	4.9	<50	NM	NM	NM	NM	NM	NM	66	none
SH-3	0.75 to 3.5	16 Nov 97	SH3(0.75-3.5)	Composite	<5	none	NM	none	<1	2.8	<50	NM	NM	NM	NM	NM	NM	<5	none
	1.25 to 1.75	16 Nov 97	SH3(1.25-1.75)	Grab (liner)	<5	none	NM	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	none
SH-4	1.25 to 1.75	16 Nov 97	SH4(1.25-1.75)	Grab (liner)	<5	none	NM	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	none
SH-4 and SH-5	0.75 to 3.5	16 Nov 97	SH4/SH5(0.75-3.5)	Composite	<5	none	NM	none	<1	<1	<50	NM	NM	NM	NM	NM	NM	<5	none
SH-5	1.25 to 1.75	16 Nov 97	SH5(1.25-1.75)	Grab (liner)	<5	none	NM	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	none
SH-6	1.25 to 1.75	16 Nov 97	SH6(1.25-1.75)	Grab (liner)	<5	none	NM	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	none
	3.5 to 5	10 Dec 97	SH6(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	47	none
SH-6 and SH-7	0.75 to 3.5	16 Nov 97	SH6/SH7(0.75-3.5)	Composite	<5	none	7.1	NF, NC Perm-Neg KI-Neg	<4	23	250	NM	NM	NM	NM	NM	NM	490	WET = 10 TCLP <1.0
SH-6, SH-7, SH-10, and SH-14	0.75 to 3.5	18 Mar 98	SH6, 7, 10, 14 (0.75-3.5)	Composite	<5	none	7.0	NF, NC Perm-Neg KI-Neg	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TCLP <0.5 FW EP Tox <0.065 SW EP Tox <0.05
				Replicate	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TCLP = 0.62
				Replicate	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TCLP <0.5
				Replicate	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TCLP <0.5
SH-7	1.25 to 1.75	16 Nov 97	SH7(1.25-1.75)	Grab (liner)	<5	none	NM	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	none
	3.5 to 5	10 Dec 97	SH7(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	none
SH-8 and SH-9	0.75 to 3.5	16 Nov 97	SH8/SH9(0.75-3.5)	Composite	<5	none	NM	none	<1	2.3	<50	NM	NM	NM	NM	NM	NM	9.6	none
SH-10	0.75 to 3.5	10 Dec 97	SH10(0.75-3.5)	Composite	<5	none	6.8	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	440	none
	3.5 to 5	10 Dec 97	SH10(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	370	none
SH-11	0.75 to 3.5	10 Dec 97	SH11(0.75-3.5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	300	none
	3.5 to 5	10 Dec 97	SH11(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	6.0	none
SH-12	0.75 to 3.5	10 Dec 97	SH12(0.75-3.5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	290	WET = 18 TCLP <0.5
	3.5 to 5	10 Dec 97	SH12(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	9.9	none
SH-13	0.75 to 3.5	10 Dec 97	SH13(0.75-3.5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	none
	3.5 to 5	10 Dec 97	SH13(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	none
SH-14	0.75 to 3.5	10 Dec 97	SH14(0.75-3.5)	Composite	<5	none	7.0	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	420	none
	3.5 to 5	10 Dec 97	SH14(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.9	none
SH-15	0 75 to 3.5	10 Dec 97	SH15(0.75-3.5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	130	WET = 20 TCLP = 0.66
				Reanalysis	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	310	WET = 22
	3.5 to 5	10 Dec 97	SH15(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.1	none

General Notes

(a) < indicates concentration below laboratory method reporting limit (shaded cells).

(b) Soil samples collected by Streamborn (Berkeley CA) Samples analyzed by Chromalab (Pleasanton CA)

(c) TPH = total petroleum hydrocarbons. Other VOCs = Volatile Organic Compounds of interest by EPA Method 8240. NM = Not measured.

(d) OVM = Organic Vapor Meter manufactured by Thermo Environmental Instruments, Model 580B, equipped with 10 2 eV photoionization detector, calibrated to 100 ppm v/v isobutylene

(e) WET = California Waste Extraction TCLP = Toxicity Characteristic Leaching Procedure test

(f) Field pH measured on a slurry that was prepared using equal weights of soil and distilled water. The pH probe was immersed directly into the slurry.

(g) Field Haz Cat results: NF = nonflammable NC = noncombustible. Perm-Neg = negative reaction to potassium permanganate test KI-Neg = negative reaction to potassium iodine/acid test

(h) FW EP Tox = Extraction Procedure Toxicity test modified for sequential extraction using fresh water. SW EP Tox = Extraction Procedure Toxicity test modified for sequential extraction using sea water.

Table 2

Selected Analytical Results for Lead-Contaminated Soil

901 Jefferson Street, Oakland CA

								Fresh Water EP Toxicity-Soluble Lead (mg/L)		Sea Water EP Toxicity-Soluble Lead (mg/L)	
Location	Depth (feet)	Sample Date	Sample Identification	Sample Type	Total Lead (mg/kg)	WET-Soluble Lead (mg/L)	TCLP-Soluble Lead (mg/L)	Extraction 1	Extraction 2	Extraction 1	Extraction 2
SH-6 and SH-7	0.75 to 3.5	16 Nov 97	SH6/SH7(0.75-3.5)	Composite	490	10	<1.0				
SH-6, SH-7, SH-10, and SH-14	0.75 to 3.5	18 Mar 98	SH6, 7, 10, 14 (0.75-3.5)	Composite			<0.5	0.065	<0.05	<0.05	<0.05
				Replicate			0.62				
				Replicate			<0.5				
				Replicate			<0.5				
SH-10	0.75 to 3.5	10 Dec 97	SH10(0.75-3.5)	Composite	440						
	3.5 to 5	10 Dec 97	SH10(3.5-5)	Composite	370						
SH-11	0.75 to 3.5	10 Dec 97	SH11(0.75-3.5)	Composite	300						
SH-12	0.75 to 3.5	10 Dec 97	SH12(0.75-3.5)	Composite	290	18	<0.5				
SH-13	0.75 to 3.5	10 Dec 97	SH13(0.75-3.5)	Composite	<5						
SH-14	0.75 to 3.5	10 Dec 97	SH14(0.75-3.5)	Composite	420						
SH-15	0.75 to 3.5	10 Dec 97	SH15(0.75-3.5)	Composite	130	20	0.66				
				Reanalysis	310	22					
Maximum					490	22	0.66	0.065		<0.05	
Minimum					<5	10	<0.5	<0.05		<0.05	
Mean					310	18	<0.5				
Standard Deviation					160	5.3	0.19				
90% Upper Confidence Limit					520	26	0.67				

General Notes

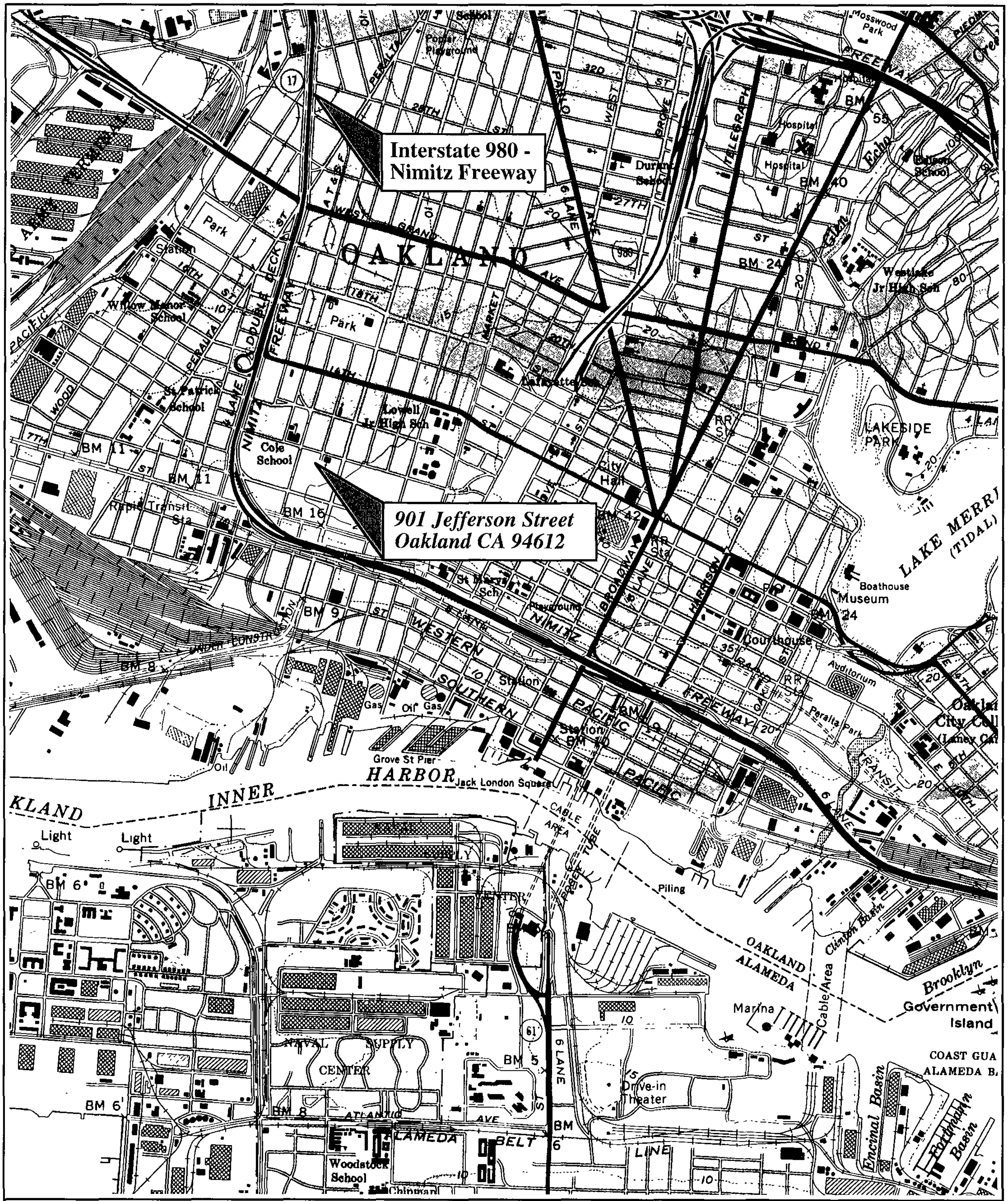
(a) < indicates concentration below laboratory method reporting limit (shaded cells).

(b) Soil samples collected by Streamborn (Berkeley CA). Samples analyzed by Chromalab (Pleasanton CA).

(c) WET = California Waste Extraction. TCLP = Toxicity Characteristic Leaching Procedure test.

(d) For statistical analysis, nondetectable measurements assumed equal to one-half the detection limit.

(e) 90% upper confidence limit (10% probability of exceeding the limit) was calculated using the Student's t statistic (which assumes normally-distributed data).



Basemap: U.S. Geological Survey, 7.5 Minute Quadrangle, Oakland West CA, 1959 (Photorevised 1980)

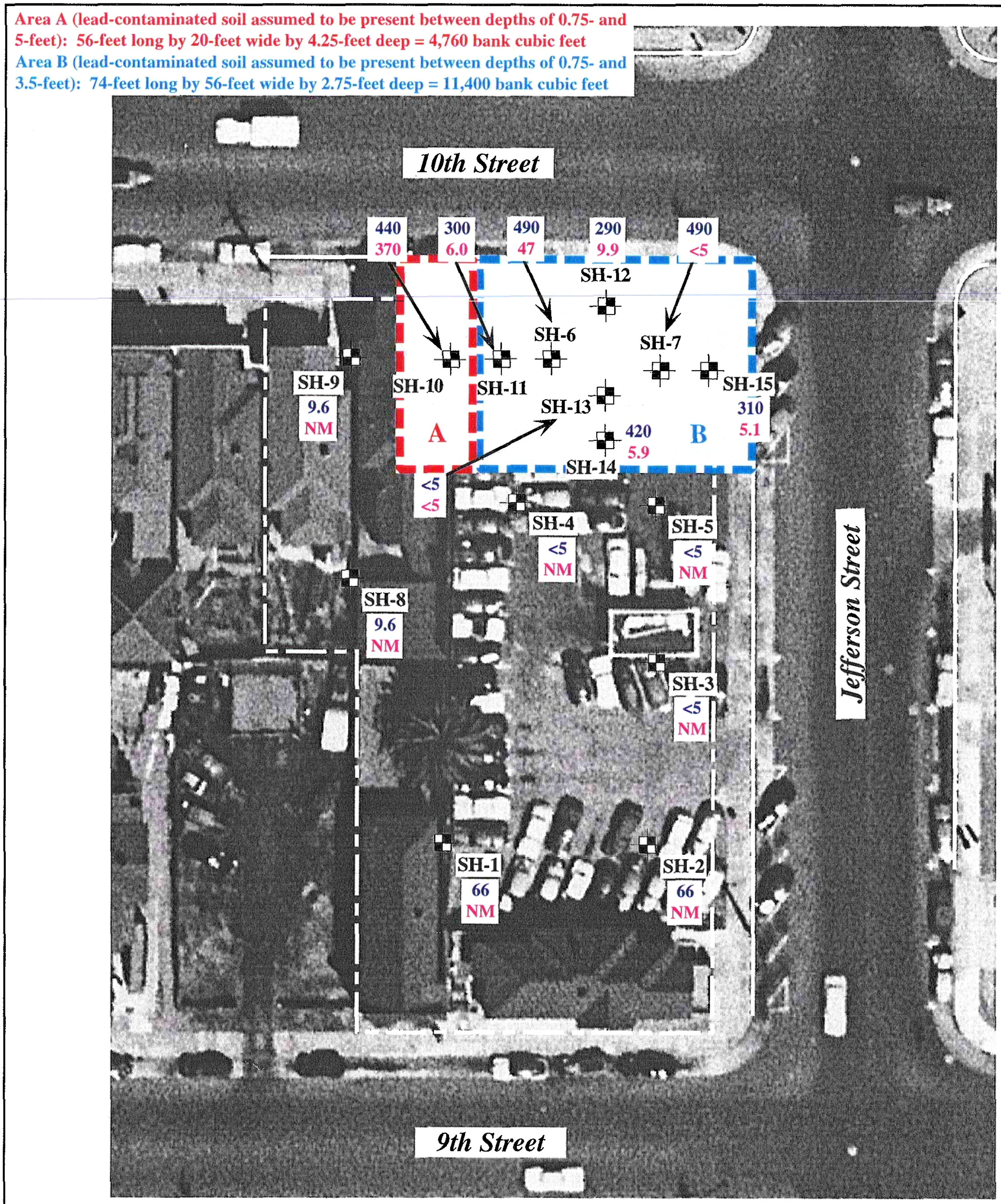
Figure 1

Location Map

901 Jefferson Street
Oakland CA

Area A (lead-contaminated soil assumed to be present between depths of 0.75- and 5-feet): 56-feet long by 20-feet wide by 4.25-feet deep = 4,760 bank cubic feet

Area B (lead-contaminated soil assumed to be present between depths of 0.75- and 3.5-feet): 74-feet long by 56-feet wide by 2.75-feet deep = 11,400 bank cubic feet



N

0 40 80

Approximate Scale in Feet

Legend

⊕	Boring
420	Concentration of Total Lead (mg/kg) from depth of 0.75-3.5 feet
5.9	Concentration of Total Lead (mg/kg) from depth of 3.5-5 feet
NM	Not measured

Aerial photo basemap obtained from Pacific Aerial Surveys, Oakland CA. Flown 14 April 1950.

Figure 2

Boring Locations and Estimated Area of Lead-Contaminated Soil

901 Jefferson Street
Oakland CA

STREAMBORN

APPENDIX A

Standard Operating Procedure

STANDARD OPERATING PROCEDURE (SOP) 15A
HAND-AUGER DRILLING AND SOIL SAMPLING

1.0 INTRODUCTION AND SUMMARY

This SOP describes methods for drilling with the use of a hand-auger and soil sampling with the use of hand-driven core samplers. Drilling activities covered by this SOP may be conducted to obtain soil samples or to create a borehole within which a well may be constructed. Soil samples may be obtained to log subsurface materials, to collect samples for chemical characterization, or to collect samples for physical parameter characterization.

The soil sampling techniques described in this SOP are generally suitable for chemical characterization and physical classification tests; because a hand-driven core sampler is employed, the resulting soil samples should generally be considered "disturbed" with respect to physical structure and may not be suitable for measuring sensitive physical parameters, such as strength and compressibility. The augering techniques described in this SOP generally produce a borehole with: (1) a diameter of approximately 3 and 1/4-inches corresponding to the outside diameter of the auger, and (2) limited capability for cross-contamination between subsurface strata as the auger passes from contaminated strata to uncontaminated underlying strata. However, should conditions require strict measures to help prevent cross-contamination or maintain the integrity of an aquitard, consideration should be given to augmenting the procedures of this SOP, for example, by using pre-drilled and grouted isolation casing.

The procedures for hand-auger drilling and soil sampling generally consist of initial decontamination, advancement of the auger, driving and recovering the hand-driven core sampler, logging and packaging of the soil samples, decontamination of the core sampler (for chemical characterization samples), and continued augering and sampling until the total depth of the borehole is reached. Withdrawal of the auger upon reaching the total depth requires completion of the borehole by grouting, by constructing a well, or other measures.

2.0 EQUIPMENT AND MATERIALS

- Hand-auger: Art's Manufacturing & Supply Company regular head auger constructed of stainless steel or combination of carbon steel and stainless steel. Auger is 6 and 1/2-inches long with a nominal 3 and 1/4-inch outside diameter (some augers have different cutting edges depending on the type of soil anticipated). Attachments include a T-handle and threaded extension rods.
- Hand-driven core sampler: Art's Manufacturing & Supply Company core soil sampler constructed of stainless steel. Sampler is 12-inches long with a nominal 2-inch inside diameter and 2- and 1/2-inch outside diameter. Sampler is driven by a hand-lifted 11-pound slide hammer dropped 20-inches. The core sampler type, size and diameter of the sampler, and weight and drop distance of the slide hammer should be noted on the boring log.
- Liners should be 6-inch length with a nominal 2-inch diameter, fitted with plastic end-caps, brass or stainless steel. The boring log should note whether brass or stainless steel liners were used.
- Teflon sheets, approximate 6-mil thickness, precut to a diameter or width of the liner diameter plus approximately 1 inch
- 1/2-pint widemouth glass jars, laboratory cleaned

- Kimwipes, certified clean silica sand, or deionized water (for blank sample preparation)
- Post-hole digger
- 16-pound breaker bar
- Duct tape
- Sample labels, boring log forms, chain-of-custody forms, hazardous waste labels, and daily report forms
- Ziploc plastic bags of size to accommodate a liner
- Stainless steel spatula and knife
- Cooler with ice or dry ice (do not use blue ice)
- Field organic vapor monitor. The make, model, and calibration information of the field organic vapor monitor (including compound and concentration of calibration gas) should be noted on the boring log.
- Aluminum foil and rubber bands
- Pressure washer or steam cleaner
- Buckets and bristle brushes for decontamination.
- Low residue, organic free soap such as Liquinox or Alconox.
- Distilled water.
- Steel, 55-gallon, open-top drums.

As specified in the Site Safety Plan, additional safety and personnel decontamination equipment and materials may be needed.

3.0 TYPICAL PROCEDURES

The following typical procedures are intended to cover the majority of drilling and sampling conditions. However, normal field practice requires re-evaluation of these procedures and implementation of alternate procedures upon encountering unusual or unexpected subsurface conditions. Deviations from the following typical procedures may be expected and should be noted on the boring log.

1. Decontaminate hand-auger, hand-driven core sampler and other drilling equipment immediately prior to mobilization to the site.
2. Investigate the location of the proposed boreholes for buried utilities and obstructions. At least 48 hours before drilling, contact known or suspected utility services individually or collectively through services such as "USA" and "Underground Alert". As appropriate, retain private buried utility location services or geophysical investigation services to search for buried utilities and obstructions. Also as appropriate, pothole suspect utility locations prior to drilling or relocate boreholes. During initial advancement of each borehole, use post-hole diggers to break the ground surface and cautiously explore the first 1- to 2-feet for buried utilities. Continue boring with hand-auger and exercise caution by having the operator pay particular attention to the "feel" of the hand-auger. The suspected presence of an obstruction, buried pipeline or cable,

utility trench backfill, or similar may be cause for suspension of drilling, subject to further investigation.

3. Advance the hand-auger to the desired sampling depth. Note depth interval, augering conditions, and hand-auger operator's comments on boring log. (Should subsurface conditions cause difficult augering, remove hand-auger and use the 16-pound breaker bar to soften resistant material; continue hand-augering.) Samples should be taken at intervals of 5-feet or less in homogeneous strata and at detectable changes of strata.
4. Remove hand-auger and note presence of water mark on the extension rod or auger, if any. Monitor top of boring using field organic vapor monitor, as appropriate.
5. Decontaminate core sampler, liners, spatulas and knives, and other equipment that may directly contact the chemical characterization sample. Fit core sampler with liner and attach to extension rod. Remove turning crossbar and attach sampling hammer.
6. Lower hand-driven core sampler through boring until sampler is resting on soil. Mark the point 6-inches above the ground surface on the extension rod for hammer blow count. Drive (with the hammer) and recover the core sampler. Record depth interval, hammer blows for 6-inches, and sample recovery on boring log. Monitor the recovered core sampler with the field organic vapor monitor, as appropriate.
7. Remove the liner from the core sampler for purposes of chemical characterization and/or physical parameter testing. Observe soil at each end of liner(s) for purposes of completing sample description. Place Teflon sheet at each end of liner, cover with plastic caps, and tape plastic caps with duct tape (do not use electrical tape) to further minimize potential loss of moisture or volatile compounds. Label liner(s) and place in ziplock bag on ice or dry ice inside cooler.
8. If headspace screening to be performed, place subsample of soil in a glass jar and cover with aluminum foil. After allowing the soil in the jar to equilibrate for 5 minutes, screen for organic vapors with the field organic vapor monitor by inserting the probe through the aluminum foil. Record depth interval, observed sample reading, and ambient (background) reading on the boring log. Glass jars may be reused by discarding the soil subsample and wiping any residue from the jar using a paper towel.
9. Visually classify soil sample in approximate accordance with ASTM D 2488 - Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). Descriptions should include moisture content, color, textural information, group symbol, group name, and odor. Optional descriptions, especially if classification is performed with protective gloves, include particle angularity and shape, clast composition, plasticity, dilatancy, dry strength, toughness, and reaction with HCl. Add notes pertaining to geologic structure of sample, as appropriate. Record depth interval, visual classification, and other notes to the boring log.
10. Repeat steps 3 through 10 until total depth of borehole is reached.
11. Complete borehole according to the specific project requirements.
12. Decontaminate hand-auger, extension rods, and core sampler between boreholes and after finishing last borehole prior to leaving the project site.

13. Change decontamination solutions and clean decontamination buckets, and brushes between boreholes.
14. Containerize soil cuttings, excess soil sample, and decontamination wastewater in steel drums. Affix hazardous waste labels to the drums.
15. Complete the boring by backfilling with grout. Unless otherwise delineated in the Workplan, Quality Assurance Project Plan, or Sampling Plan, grout may consist of:

    - neat cement grout, using 1 sack (94 pounds dry weight) of Type I/II Portland cement to 5 gallons of water, or
    - cement-bentonite grout using the same basic formula but substituting approximately 5% powdered bentonite for part of the cement.

    Local requirements may require inspection of grout seal placement by the regulating authority.

    If augers or temporary casing remain in the borehole during grouting, the level of the grout should be kept above the tip of the augers or casing to help prevent inclusions of formation material in the grout seal.

    The volume of the grout actually used should be recorded and compared to the theoretical annular volume of the sealed interval. Any discrepancies should be noted.
16. Complete pertinent portion of the chain-of-custody form and daily activity report. Keep custody of samples until transferred to the laboratory.

4.0 QUALITY ASSURANCE AND QUALITY CONTROL

Quality control samples are optional.

Sequential replicates may be collected at an approximate frequency of 1 sequential replicate for every 10 natural samples. Sequential replicates are collected by driving the core sampler twice and collecting two adjacent samples without hand-auger advancement. Each sample is labeled according to normal requirements. The replicate samples obtained in such a manner are suitable for assessing the reproducibility of both chemical and physical parameters. Interpretations of data reproducibility should recognize the potential for significant changes in soil type and chemical concentrations, even over 6-inch intervals. Accordingly, sequential replicates do not supply the same information as normally encountered duplicate or split samples. Duplicate or split samples are better represented by analyzing subsamples of soil from the same liner.

Field blanks may be collected at an approximate frequency of 1 field blank for every 10 natural samples. Field blanks may be prepared by (1) swipe sampling decontaminated liner and core sampler with kimwipes, (2) pouring clean silica sand into a decontaminated hand-driven core sampler that has been fitted with a liner, or (3) pouring deionized water over the decontaminated liner and core sampler and collecting the water that contacts the sampling equipment for aqueous analysis.

The comparability of the field visual classification may be checked by conducting laboratory classification tests.

5.0 DOCUMENTATION

Observations, measurements, and other documentation of drilling and soil sampling activities should be recorded on the following:

- Daily Report
- Field Notebook
- Boring Log
- Soil Sampling Form
- Chain-of-Custody Form

Documentation should include any deviations from this SOP, notations of unusual or unexpected conditions, and documentation of the containerization and disposition/disposal of investigation-derived waste. Specific instructions for selected forms are provided below.

6.0 DECONTAMINATION

The drilling equipment (hand-auger, core sampler, shovels, buckets and brushes, etc.) should be decontaminated at the following intervals:

- Before entering the project site
- Between each borehole (fresh decontamination solutions should also be prepared between boreholes)
- Prior to leaving the project site

In addition, prior to each sample, the hand-driven core sampler, liners, spatulas and knives, and other equipment or materials that may directly contact the sample should be decontaminated.

Decontamination for these items should consist of a soap wash (Alconox, Liquinox, or other organic free - low residue soap), followed by a tap water rinse, followed by a distilled water rinse. Wastewater from the soap wash should be temporarily contained. Wastewater from the tap water and distilled water rinses may be discharged to the ground surface or a sanitary sewer.

7.0 INVESTIGATION-DERIVED WASTE

Wastes resulting from the activities of this SOP may include soil cuttings, excess soil sample, decontamination wastewater, and miscellaneous waste (paper, plastic, gloves, jars, aluminum foil, site safety disposable, etc.) Unless otherwise prohibited by the Site Safety Plan, miscellaneous waste should be disposed of as municipal waste.

Soil cuttings and excess soil sample from each borehole should be placed in individual steel drums with labels affixed. Solids from multiple boreholes may be combined within a single drum if field observations (presence or absence of chemical staining and field organic vapor monitoring) indicate the solids are similarly uncontaminated or similarly contaminated.

Decontamination wastewater should be placed in individual steel drums with labels affixed. Wastewater from multiple boreholes may be combined, subject to the same limitations as solids.

8.0 SAFETY

Normal and special safety precautions are described in the Site Safety plan. The Site Safety plan should be reviewed periodically during drilling to stay apprised of important safety measures.

Chemical hazards are typically discovered upon withdrawal of the auger or withdrawal of the soil-filled core sampler, as well as removal of the soil-filled liner from the core sampler. Opportune monitoring for volatile chemicals may be conducted at these times. Splash protection and direct contact protection are also essential measures to minimize the potential for chemical exposure.

9.0 REFERENCES

American Society for Testing and Materials, 1989. 1989 Annual Book of ASTM Standards, Section 4 - Construction, Volume 4.08 - Soil and Rock, Building Stones; Geotextiles. ASTM, Philadelphia, PA. 1989.

Aller, L., T.W. Bennett, G. Hackett, R.J. Petty, J.H. Lehr, H. Sedoris, and D.M. Nielsen, 1989. Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells. National Water Well Association, Dublin, OH. 1989.

U.S. Environmental Protection Agency, 1989a. A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001, OSWER Directive 9355.0-14. USEPA, Office of Emergency and Remedial Response, Washington, DC. December 1989.

U.S. Environmental Protection Agency, 1989b. Soil Sampling Quality Assurance User's Guide - Second Edition. National Technical Information Service, PB 89-189 864/AS, Springfield, VA. 1989.

APPENDIX B

Chain-of-Custody Forms

233/157800-15709

36702

STREAMBORN CHAIN-OF-CUSTODY

Project Name: 901 Jefferson Street	Project Location: Oakland CA	Project Number: P135
Sampler: K. Alexander/E. Kwong	Laboratory: Chromalab	Laboratory Number:

[illegible]

			Matrix			Type		Containers				Turnaround		Analyses								
Sample Designation	Date	Time	Soil	Water	Vapor	Grab	Composite	Quantity	Type	Preservative	Filtration	24-Hour	Standard	TPH-Motor Oil	TPH-Kerosene	TPH-Diesel	TPH-Gasoline	EPA 8020	EPA 8010	Total Lead	Sampler Comments	Laboratory Comments
SH1/SH2(0.75-3.5)	**16-Nov-97**	**12:50**	X				X	1	bag				X	X	X	X				X	**results by 11/25**	
SH5(1.25-1.75)	**16-Nov-97**	**13:15**	X			X		1	liner				X				X	X	X		**results by 11/25**	
SH7(1.25-1.75)	**16-Nov-97**	**13:40**	X			X		1	liner				X				X	X	X		**results by 11/25**	
SH6(1.25-1.75)	**16-Nov-97**	**14:25**	X			X		1	liner				X				X	X	X		**results by 11/25**	
SH6/SH7(0.75-3.5)	**16-Nov-97**	**14:30**	X				X	1	bag				X	X	X	X				X	**results by 11/25**	
SH4(1.25-1.75)	**16-Nov-97**	**14:50**	X			X		1	liner				X				X	X	X		**results by 11/25**	
SH4/SH5(0.75-3.5)	**16-Nov-97**	**15:00**	X				X	1	bag				X	X	X	X				X	**results by 11/25**	
SH8/SH9(0.75-3.5)	**16-Nov-97**	**15:30**	X				X	1	bag				X	X	X	X				X	**results by 11/25**	
SH3(1.25-1.75)	**16-Nov-97**	**15:50**	X			X		1	liner				X				X	X	X		**results by 11/25**	
SH3(0.75-3.5)	**16-Nov-97**	**16:00**	X				X	1	bag				X	X	X	X				X	**results by 11/25**	

Note: Sampler and laboratory to observe preservative, condition, integrity, etc. of samples and record (under "Comments") any exceptions from standard protocols.

Relinquished By: K. B. Alex	Received By:	Date: 11·17·97 Time: 1310
Relinquished By:	Received By: Mike Naranjo	Date: 11/17/97 Time: 1418

STREAMBORN Mail: PO Box 8330, Berkeley CA 94707-8330 Office: 900 Santa Fe Ave, Albany CA 94706 510/528-4234 Fax: 528-2613

11403/159963-159964

CHROMALAB, INC.
Environmental Services (SDB) (DOHS 1094)

ADD ON/CHANGE ORDER

New Submission No: 9711403
Order No: 36939

Original Submission Info

Client Name: STREAMBORN
Project Mgr: KEG ALEXANDER
Project Name: 901 JEFFERSON ST.
Project No: P135
PO#:
Date Received: 11/17/97
Submission No: 9711233

Name of Caller: K. ALEXANDER
Call Date: 11/26/97 Time:
Add on Due Date: 12/3/97 Date Sampled 11/16/97
Comments: Due by Noon
RUSH

SUBM #: 9711403 REP: PM
CLIENT: STREAM
DUE: 12/03/97
REF #:36939/9711233

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION ([✓ TCLP], [✓ STLC]) Pb				NUMBER OF CONTAINERS
SH6/SH7(7535)	11/16/97		S																		X				1

12210/162104-162117

37168

STREAMBORN CHAIN-OF-CUSTODY

Project Name: 901 Jefferson Street	Project Location: Oakland CA	Project Number: P135
Sampler: K. Alexander/E. Kwong	Laboratory: Chromalab	Laboratory Number:

SUBM #: 9712210 REP: PM
CLIENT: STRCON
DUE: 12/17/97
REF #:37168

			Matrix			Type		Containers				Turnaround		Analyses							
Sample Designation	Date	Time	Soil	Water	Vapor	Grab	Composite	Quantity	Type	Preservative	Filtration	24-Hour	5-Day	Total Lead						Sampler Comments	Laboratory Comments
SH10(0.75-3.5)	10-Dec-97	8:30	X				X	1	bag				X	X							
SH10(3.5-5)	10-Dec-97	8:40	X				X	1	bag				X	X							
SH11(0.75-3.5)	10-Dec-97	9:05	X				X	1	bag				X	X							
SH11(3.5-5)	10-Dec-97	9:15	X				X	1	bag				X	X							
SH12(0.75-3.5)	10-Dec-97	9:35	X				X	1	bag				X	X							
SH12(3.5-5)	10-Dec-97	9:40	X				X	1	bag				X	X							
SH13(0.75-3.5)	10-Dec-97	10:00	X				X	1	bag				X	X							
SH13(3.5-5)	10-Dec-97	10:05	X				X	1	bag				X	X							
SH14(0.75-3.5)	10-Dec-97	10:35	X				X	1	bag				X	X							
SH14(3.5-5)	10-Dec-97	10:40	X				X	1	bag				X	X							
SH15(0.75-3.5)	10-Dec-97	11:05	X				X	1	bag				X	X							
SH15(3.5-5)	10-Dec-97	11:15	X				X	1	bag				X	X							
SH6(3.5-5)	10-Dec-97	11:30	X				X	1	bag				X	X							
SH7(3.5-5)	10-Dec-97	11:45	X				X	1	bag				X	X							

Note: Sampler and laboratory to observe preservative, condition, integrity, etc. of samples and record (under "Comments") any exceptions from standard protocols.

Relinquished By: K.B. Alex	Received By:	Date: 12.10.97 Time: 1525
Relinquished By:	Received By: Mike Naranjo	Date: 12/10/97 Time: 1807

12345/163372 - 163375

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

ADD ON/CHANGE ORDER

New Submission No: 9712345

Order No: 37320

Original Submission Info

Client Name: STREAMBORN

Project Mgr: K. ALEXANDER

Project Name: 901 JEFFERSON ST.

Project No: P135

PO#:

Date Received: 12/10/97

Submission No: 9712210

Name of Caller: K. ALEXANDER

Call Date: 12/17/97

Time:

Add on Due Date: 12/24/97

Date Sampled 12/10/97

Comments:

SUBM #: 9712345 REP: PM
CLIENT: STREAM
DUE: 12/24/97
REF #:37320/9712210

					ANALYSIS REPORT																				
SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP/STLC) CAM17				NUMBER OF CONTAINERS
SH12(0.75-3.5)	12/10/97		S																		X				1
SH15(0.75-3.5)	↓		↓																		X				1

(38) 175973 - 175960

3-578

SUBM #: 9803259 REP: PM
CLIENT: STREAM
DUE: 03/25/98
REF #:38781

Project Name: 901 Jefferson Street	Project Location: Oakland CA	Project Number: P135
Sampler: K. Alexander	Laboratory: Chromalab	Laboratory Number:

			Matrix			Type		Containers				Turnaround		Analyses					
Sample Designation	Date	Time	Soil	Water	Vapor	Grab	Composite	Quantity	Type	Preservative	Filtration	24-Hour	Standard	EP Tox soft water	EP Tox Sea Water	TCLP lead		Sampler Comments	Laboratory Comments
SH6, SH7, SH10, SH14 (0.75-3.5)	**18-Mar-98**	**9:00**	**X**				**X**	**2**	**bag**				**X**	**X**	**X**	**X**		**Multiple extractions for reclassification of Cal-hazardous waste (lead). See Pierre Monette for details.**	
LOGIN 4 TCLP Pb 2 TCLP WITH SEA WATER																		**Do not discard samples without permission from Streamborn.**	
2 TCLP WITH FRESH WATER																			

Note: Sampler and laboratory to observe preservative, condition, integrity, etc. of samples and record (under "Comments") any exceptions from standard protocols.

Relinquished By: K.B. Alex	Received By:	3-18-98	Time: 15:30
Relinquished By:	Received By: C. Cassidy	3-18-98	Time: 16:55

STREAMBORN Mail: PO Box 8330, Berkeley CA 94707-8330 Office: 900 Santa Fe Ave, Albany CA 94706 510/528-4234 Fax: 528-2613

APPENDIX C

Laboratory Data Reports

CHROMALAB, INC.
Environmental Services (SDB)

November 25, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: 1 sample for TEPH analysis.
Method: *EPA 8015M*

Matrix: SOIL *Extracted:* November 20, 1997
Sampled: November 16, 1997 *Run#:* 9797 *Analyzed:* November 21, 1997

Spl#	CLIENT SPL ID	Kerosene (mg/Kg)	Diesel (mg/Kg)	Motor Oil (mg/Kg)
157830	SH1/SH2(.75-3.5)	N.D.	4.9	N.D.

Note: Hydrocarbon reported as Diesel is in the late Diesel Range and does not match our Diesel Standard.

Reporting Limits	1.0	1.0	50
Blank Result	N.D.	N.D.	N.D.
Blank Spike Result (%)	--	87.4	--

Bruce Havlik
Chemist

Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

November 25, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: 1 sample for TEPH analysis.
Method: *EPA 8015M*

Matrix: SOIL *Extracted:* November 20, 1997
Sampled: November 16, 1997 *Run#:* 9797 *Analyzed:* November 21, 1997

Spl#	**CLIENT SPL ID**	**Kerosene (mg/Kg)**	**Diesel (mg/Kg)**	**Motor Oil (mg/Kg)**
157831	SH6/SH7(.75-3.5)	N.D.	23	250

Note: Hydrocarbon reported as Diesel is in the late Diesel Range and does not match our Diesel Standard.

Reporting Limits	4.0	4.0	80
Blank Result	N.D.	N.D.	N.D.
Blank Spike Result (%)	--	87.4	--

Bruce Havlik
Chemist

Alex Tam
Semivolatiles Supervisor

510-528-2613 PM 11/24

S013 0:QC0405 MSOFFICE\BHAVLI 10:28

CHROMALAB, INC.

Environmental Services (SDB)

November 25, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: 3 samples for TEPH analysis.
Method: *EPA 8015M*

Matrix: SOIL *Extracted:* November 20, 1997
Sampled: November 16, 1997 *Run#:* 9797 *Analyzed:* November 21, 1997

Spl#	CLIENT SPL ID	Kerosene (mg/Kg)	Diesel (mg/Kg)	Motor Oil (mg/Kg)
157832	SH4/SH5(.75-3.5)	N.D.	N.D.	N.D.
157833	SH8/SH9(.75-3.5)	N.D.	2.3	N.D.
	Note: Hydrocarbon reported is in the late Diesel Range and does not match our Diesel Standard.			
157834	SH3(.75-3.5)	N.D.	2.8	N.D.
	Note: Hydrocarbon reported is in the late Diesel Range and does not match our Diesel Standard.			
Reporting Limits		1.0	1.0	50
Blank Result		N.D.	N.D.	N.D.
Blank Spike Result (%)		--	87.4	--

Bruce Havlik
Chemist

Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN
Atten: Mark Buscheck
Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997
re: One sample for Halogenated Volatile Organics by GC/MS analysis.
Method: *SW846 Method 8240A Nov 1990*

Client Sample ID: **SH3 (1.25-1.75)**
Spl#: 157839 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9776 *Analyzed:* November 18, 1997

ANALYTE	**RESULT (ug/Kg)**	**REPORTING LIMIT (ug/Kg)**	**BLANK RESULT (ug/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	10	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	105	1
CHLOROETHANE	N.D.	10	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	120	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	104	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1

Michael Lee
Chemist

Michael Verona
Operations Manager

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN
Atten: Mark Buscheck
Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997
re: One sample for Halogenated Volatile Organics by GC/MS analysis.
Method: *SW846 Method 8240A Nov 1990*

Client Sample ID: **SH4(1.25-1.75)**
Spl#: 157838 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9776 *Analyzed:* November 18, 1997

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	10	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	105	1
CHLOROETHANE	N.D.	10	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	120	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	104	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1

Note: Recovery of toluene-d8 (surrogate) was outside of QC limit due to matrix interference.

Michael Lee
Chemist

Michael Verona
Operations Manager

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN
Atten: Mark Buscheck
Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997
re: One sample for Halogenated Volatile Organics by GC/MS analysis.
Method: *SW846 Method 8240A Nov 1990*

Client Sample ID: **SH6(1.25-1.75)**
Spl#: 157837 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9776 *Analyzed:* November 18, 1997

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	10	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	105	1
CHLOROETHANE	N.D.	10	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	120	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	104	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1

Note: Recovery of toluene-d8 (suurogate) was outside of QC limit due to matrix interference.

Michael Lee
Chemist

Michael Verona
Operations Manager

CHROMALAB, INC.

Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN
Atten: Mark Buscheck
Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997
re: One sample for Halogenated Volatile Organics by GC/MS analysis.
Method: *SW846 Method 8240A Nov 1990*

Client Sample ID: **SH7(1.25-1.75)**
Spl#: 157836 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9776 *Analyzed:* November 18, 1997

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	10	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	105	1
CHLOROETHANE	N.D.	10	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	120	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	104	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1

Note: Recovery of toluene-d8 (surrogate) was outside of QC limit due to matrix interference.

Michael Lee
Chemist

Michael Verona
Operations Manager

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN
Atten: Mark Buscheck
Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997
re: One sample for Halogenated Volatile Organics by GC/MS analysis.
Method: *SW846 Method 8240A Nov 1990*

Client Sample ID: **SH5(1.25-1.75)**
Spl#: 157835 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9776 *Analyzed:* November 18, 1997

ANALYTE	**RESULT (ug/Kg)**	**REPORTING LIMIT (ug/Kg)**	**BLANK RESULT (ug/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	10	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	105	1
CHLOROETHANE	N.D.	10	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	50	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	120	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	104	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1

Note: Recovery of toluene-d8 (surrogate) was outside of QC limit due to matrix interference.

Michael Lee
Chemist

Michael Verona
Operations Manager

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SH5(1.25-1.75)**
Spl#: 157835 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9842 *Analyzed:* November 22, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	89	1
BENZENE	N.D.	0.0050	N.D.	91	1
TOLUENE	N.D.	0.0050	N.D.	95	1
ETHYL BENZENE	N.D.	0.0050	N.D.	93	1
XYLENES	N.D.	0.0050	N.D.	90	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-528-2613

PM V132 0:BTEXQC0220
KAYVAN 12:15

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SH7(1.25-1.75)**
Spl#: 157836 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9842 *Analyzed:* November 22, 1997

ANALYTE	**RESULT (mg/Kg)**	**REPORTING LIMIT (mg/Kg)**	**BLANK RESULT (mg/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
GASOLINE	N.D.	1.0	N.D.	89	1
BENZENE	N.D.	0.0050	N.D.	91	1
TOLUENE	N.D.	0.0050	N.D.	95	1
ETHYL BENZENE	N.D.	0.0050	N.D.	93	1
XYLENES	N.D.	0.0050	N.D.	90	1

Note: *Surrogate Recoveries demonstrate Matrix interference.*

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-528-2613

PM V132 0:BTEXQC0220
KAYVAN 12

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SH6(1.25-1.75)**
Spl#: 157837 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9843 *Analyzed:* November 22, 1997

ANALYTE	**RESULT (mg/Kg)**	**REPORTING LIMIT (mg/Kg)**	**BLANK RESULT (mg/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
GASOLINE	N.D.	1.0	N.D.	86	1
BENZENE	N.D.	0.0050	N.D.	89	1
TOLUENE	N.D.	0.0050	N.D.	85	1
ETHYL BENZENE	N.D.	0.0050	N.D.	83	1
XYLENES	N.D.	0.0050	N.D.	81	1

Note: *Surrogate Recoveries demonstrate Matrix interference.*

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SH4(1.25-1.75)**
Spl#: 157838 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9843 *Analyzed:* November 22, 1997

ANALYTE	**RESULT (mg/Kg)**	**REPORTING LIMIT (mg/Kg)**	**BLANK RESULT (mg/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
GASOLINE	N.D.	1.0	N.D.	86	1
BENZENE	N.D.	0.0050	N.D.	89	1
TOLUENE	N.D.	0.0050	N.D.	85	1
ETHYL BENZENE	N.D.	0.0050	N.D.	83	1
XYLENES	N.D.	0.0050	N.D.	81	1

Note: Surrogate Recoveries demonstrate Matrix interference.

Kayvan Kimyai
Chemist

Marianne Alexander
Marianne Alexander
Gas/BTEX Supervisor

510-528-2613

PM V132 O:BTEXQC0220
KAYVAN 12

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SH3(1.25-1.75)**
Spl#: 157839 *Matrix:* SOIL
Sampled: November 16, 1997 *Run#:* 9843 *Analyzed:* November 22, 1997

ANALYTE	**RESULT (mg/Kg)**	**REPORTING LIMIT (mg/Kg)**	**BLANK RESULT (mg/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
GASOLINE	N.D.	1.0	N.D.	86	1
BENZENE	N.D.	0.0050	N.D.	89	1
TOLUENE	N.D.	0.0050	N.D.	85	1
ETHYL BENZENE	N.D.	0.0050	N.D.	83	1
XYLENES	N.D.	0.0050	N.D.	81	1

Note: Surrogate Recoveries demonstrate Matrix interference.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

November 24, 1997

Submission #: 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON

Project#: P135

Received: November 17, 1997

re: **Blank spike and duplicate** report for Gasoline BTEX analysis.

Method: SW846 8020A Nov 1990 / 8015Mod

Matrix: SOIL

Lab Run#: 9842

Analyzed: November 21, 1997

Analyte	Spike Amount BSP (mg/Kg)	Dup	Spike Amount Found BSP (mg/Kg)	Dup	Spike Recov BSP (%)	Dup (%)	Control Limits	% RPD	% RP Lim
GASOLINE	0.500	0.500	0.447	0.587	89.4	117	75-125	26.7	35
BENZENE	0.100	0.100	0.0913	0.0820	91.3	82.0	77-123	10.7	35
TOLUENE	0.100	0.100	0.0945	0.0839	94.5	83.9	78-122	11.9	35
ETHYL BENZENE	0.100	0.100	0.0934	0.0830	93.4	83.0	70-130	11.8	35
XYLENES	0.300	0.300	0.269	0.241	89.7	80.3	75-125	11.0	35

BS Smpl #: 158963
BSD Smpl #: 158964

CHROMALAB, INC.

Environmental Services (SDB)

November 24, 1997

Submission #: 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON
Project#: P135
Received: November 17, 1997

re: **Blank spike and duplicate** report for Gasoline BTEX analysis.

Method: SW846 8020A Nov 1990 / 8015Mod

Matrix: SOIL
Lab Run#: 9843
Analyzed: November 21, 1997

	Spike Amount		Spike Amount Found		Spike Recov				%
Analyte	BSP (mg/Kg)	Dup	BSP (mg/Kg)	Dup	BSP (%)	Dup (%)	Control Limits	% RPD	RPD Lim
GASOLINE	0.500	0.500	0.430	0.499	86.0	99.8	75-125	14.8	35
BENZENE	0.100	0.100	0.0892	0.0899	89.2	89.9	77-123	0.78	35
TOLUENE	0.100	0.100	0.0846	0.0860	84.6	86.0	78-122	1.64	35
ETHYL BENZENE	0.100	0.100	0.0831	0.0841	83.1	84.1	70-130	1.20	35
XYLENES	0.300	0.300	0.244	0.248	81.3	82.7	75-125	1.71	35

BS Smpl #: 158968
BSD Smpl #: 158969

QC_BSD1226 KAYVAN 12 16 04

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: **Surrogate** report for 2 samples for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod
Lab Run#: 9842
Matrix: SOIL

Sample#	Client Sample ID	Surrogate	% Recovered	Recovery Limits
157835-1	SH5(1.25-1.75)	TRIFLUOROTOLUENE	75.4	65-13
157835-1	SH5(1.25-1.75)	4-BROMOFLUOROBENZENE	73.7	65-13
157836-1	SH7(1.25-1.75)	TRIFLUOROTOLUENE	78.9	65-135
157836-1	SH7(1.25-1.75)	4-BROMOFLUOROBENZENE	73.7	65-13
157836-2	SH7(1.25-1.75)	TRIFLUOROTOLUENE	1.24	65-13
157836-2	SH7(1.25-1.75)	4-BROMOFLUOROBENZENE	1.64	65-135

Sample#	QC Sample Type	Surrogate	% Recovered	Recovery Limits
158962-1	*Reagent blank (MDB)*	TRIFLUOROTOLUENE	87.9	65-135
158962-1	*Reagent blank (MDB)*	4-BROMOFLUOROBENZENE	94.9	65-135
158963-1	*Spiked blank (BSP)*	TRIFLUOROTOLUENE	93.9	65-13
158963-1	*Spiked blank (BSP)*	4-BROMOFLUOROBENZENE	114	65-13
158964-1	*Spiked blank duplicate (BSD)*	TRIFLUOROTOLUENE	87.9	65-135
158964-1	*Spiked blank duplicate (BSD)*	4-BROMOFLUOROBENZENE	84.1	65-13

V132
QCSURR1229 KAYVAN 24-Nov-97 12

CHROMALAB, INC.
Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: **Surrogate** report for 3 samples for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod
Lab Run#: 9843
Matrix: SOIL

Sample#	Client Sample ID	Surrogate	% Recovered	Recovery Limits
157837-1	SH6(1.25-1.75)	TRIFLUOROTOLUENE	51.8	65-135
157837-1	SH6(1.25-1.75)	4-BROMOFLUOROBENZENE	30.5	65-135
157837-2	SH6(1.25-1.75)	TRIFLUOROTOLUENE	41.3	65-135
157837-2	SH6(1.25-1.75)	4-BROMOFLUOROBENZENE	19.8	65-135
157838-1	SH4(1.25-1.75)	TRIFLUOROTOLUENE	57.4	65-135
157838-1	SH4(1.25-1.75)	4-BROMOFLUOROBENZENE	56.1	65-135
157838-2	SH4(1.25-1.75)	TRIFLUOROTOLUENE	38.0	65-135
157838-2	SH4(1.25-1.75)	4-BROMOFLUOROBENZENE	46.2	65-135
157839-1	SH3(1.25-1.75)	TRIFLUOROTOLUENE	75.7	65-135
157839-1	SH3(1.25-1.75)	4-BROMOFLUOROBENZENE	63.0	65-135
157839-2	SH3(1.25-1.75)	TRIFLUOROTOLUENE	0.786	65-135
157839-2	SH3(1.25-1.75)	4-BROMOFLUOROBENZENE	1.77	65-135

Sample#	QC Sample Type	Surrogate	% Recovered	Recovery Limits
158967-1	*Reagent blank (MDB)*	TRIFLUOROTOLUENE	103	65-135
158967-1	*Reagent blank (MDB)*	4-BROMOFLUOROBENZENE	104	65-135
158968-1	*Spiked blank (BSP)*	TRIFLUOROTOLUENE	96.0	65-135
158968-1	*Spiked blank (BSP)*	4-BROMOFLUOROBENZENE	99.8	65-135
158969-1	*Spiked blank duplicate (BSD)*	TRIFLUOROTOLUENE	99.8	65-135
158969-1	*Spiked blank duplicate (BSD)*	4-BROMOFLUOROBENZENE	105	65-135

V132
QCSURR1229 KAYVAN 24-Nov-97 12

CHROMALAB, INC.

Environmental Services (SDB)

November 24, 1997 *Submission #:* 9711233

STREAMBORN

Atten: Mark Buscheck

Project: 901 JEFFERSON *Project#:* P135
Received: November 17, 1997

re: 5 samples for Lead analysis.
Method: *EPA 3050A/7420A*

Matrix: SOIL *Extracted:* November 24, 1997
Sampled: November 16, 1997 *Run#:* 9860 *Analyzed:* November 24, 1997

Spl#	CLIENT SPL ID	LEAD (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
157830	SH1/SH2(.75-3.5)	66	5.0	N.D.	93.2	1
157831	SH6/SH7(.75-3.5)	490	5.0	N.D.	93.2	1
157832	SH4/SH5(.75-3.5)	N.D.	5.0	N.D.	93.2	1
157833	SH8/SH9(.75-3.5)	9.6	5.0	N.D.	93.2	1
157834	SH3(.75-3.5)	N.D.	5.0	N.D.	93.2	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

December 3, 1997 *Submission #:* 9711403

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON ST. *Project#:* P135
Received: November 17, 1997

re: 1 sample for STLC Lead analysis.
Method: *EPA 3005A/7420A*

Matrix: SOIL *Extracted:* December 1, 1997
Sampled: November 16, 1997 *Run#:* 9954 *Analyzed:* December 1, 1997

Spl#	**CLIENT SPL ID**	**LEAD (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
159963	SH6/SH7(75-3.5)	10	1.0	N.D.	108	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

December 3, 1997 *Submission #:* 9711403

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON ST. *Project#:* P135
Received: November 17, 1997

re: 1 sample for TCLP Lead analysis.
Method: *EPA 3010A/7420A*

Matrix: SOIL *Extracted:* December 1, 1997
Sampled: November 16, 1997 *Run#:* 9955 *Analyzed:* December 1, 1997

Spl#	**CLIENT SPL ID**	**LEAD (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
159964	SH6/SH7(75-3.5)	N.D.	1.0	N.D.	99.4	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

December 16, 1997 *Submission #:* 9712210

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: December 10, 1997

re: 14 samples for Lead analysis.
Method: *EPA 3050A/7420A*

Matrix: SOIL *Extracted:* December 12, 1997
Sampled: December 10, 1997 *Run#:* 10186 *Analyzed:* December 12, 1997

Spl#	CLIENT SPL ID	LEAD (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
162104	SH10(0.75-3.5)	440	5.0	N.D.	96.4	1
162105	SH10(3.5-5)	370	5.0	N.D.	96.4	1
162106	SH11(0.75-3.5)	300	5.0	N.D.	96.4	1
162107	SH11(3.5-5)	6.0	5.0	N.D.	96.4	1
162108	SH12(0.75-3.5)	290	5.0	N.D.	96.4	1
162109	SH12(3.5-5)	9.9	5.0	N.D.	96.4	1
162110	SH13(0.75-3.5)	N.D.	5.0	N.D.	96.4	1
162111	SH13(3.5-5)	N.D.	5.0	N.D.	96.4	1
162112	SH14(0.75-3.5)	420	5.0	N.D.	96.4	1
162113	SH14(3.5-5)	5.9	5.0	N.D.	96.4	1
162114	SH15(0.75-3.5)	130	5.0	N.D.	96.4	1
162115	SH15(3.5-5)	5.1	5.0	N.D.	96.4	1
162116	SH6(3.5-5)	47	5.0	N.D.	96.4	1
162117	SH7(3.5-5)	N.D.	5.0	N.D.	96.4	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

December 29, 1997 *Submission #:* 9712345

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON ST *Project#:* P135
Received: December 10, 1997

re: One sample for STLC Misc Metals analysis.
Method: *3005A/6010A/7470A Nov 1990*

Client Sample ID: **SH12 (0.75-3.5)**
Spl#: 164288 *Matrix:* SOIL *Extracted:* December 29, 1997
Sampled: December 10, 1997 *Run#:* 10409 *Analyzed:* December 29, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
LEAD	18	0.50	N.D.	96.6	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

510-528-2613 PM 12/29

M017 0:QC0405 JOHN 15

CHROMALAB, INC.
Environmental Services (SDB)

December 24, 1997 *Submission #:* 9712345

STREAMBORN

Atten: K. Alexander

Project: 901 JEFFERSON ST. *Project#:* P135
Received: December 10, 1997

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH12(0.75-3.5)**
Spl#: 163373 *Matrix:* SOIL *Extracted:* December 23, 1997
Sampled: December 10, 1997 *Run#:* 10367 *Analyzed:* December 23, 1997

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	N.D.	0.50	N.D.	99.4	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

510-528-2613 PM 12/24

M022 0 OC0405 PIERRE 14:47

CHROMALAB, INC.

Environmental Services (SDB)

December 29, 1997

Submission #: 9712345

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON ST
Project#: P135
Received: December 10, 1997

re: One sample for STLC Misc Metals analysis.
Method: *3005A/6010A/7470A Nov 1990*

Client Sample ID: **SH15 (0.75-3.5)**
Spl#: 164287
Matrix: SOIL
Extracted: December 29, 1997
Sampled: December 10, 1997
Run#: 10409
Analyzed: December 29, 1997

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	20	0.50	N.D.	96.6	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

510-528-2613 PM 12/29

M017 0:0C0405 JOHN 15:

CHROMALAB, INC.
Environmental Services (SDB)

December 24, 1997 *Submission #:* 9712345

STREAMBORN

Atten: K. Alexander

Project: 901 JEFFERSON ST. *Project#:* P135
Received: December 10, 1997

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH15(0.75-3.5)**
Spl#: 163375 *Matrix:* SOIL *Extracted:* December 23, 1997
Sampled: December 10, 1997 *Run#:* 10367 *Analyzed:* December 23, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
LEAD	0.66	0.50	N.D.	99.4	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

510-528-2613 PM 12/24

M022 0:0C0405 PIERRE 14 47

CHROMALAB, INC.
Environmental Services (SDB)

December 29, 1997 *Submission #:* 9712439

CHROMALAB

Atten: Pierre Monette

Project: STREAMBORN/P135
Received: December 10, 1997

re: 1 sample for Lead analysis.
Method: *EPA 3050A/7420A*

Matrix: SOIL *Extracted:* December 26, 1997
Sampled: December 10, 1997 *Run#:* 10401 *Analyzed:* December 26, 1997

Spl#	**CLIENT SPL ID**	**LEAD (mg/Kg)**	**REPORTING LIMIT (mg/Kg)**	**BLANK RESULT (mg/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
164231	SH15 (0.75-3.5)	310	5.0	N.D.	104	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

December 29, 1997

Submission #: 9712439

CHROMALAB

Atten: Pierre Monette

Project: STREAMBORN/P135
Received: December 10, 1997

re: 1 sample for STLC Lead analysis.
Method: *EPA 3005A/7420A*

Matrix: SOIL
Sampled: December 10, 1997 *Run#:* 10416
Extracted: December 29, 1997
Analyzed: December 29, 1997

Spl#	CLIENT SPL ID	LEAD (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
164232	SH15 (0.75-3.5)	22	1.0	N.D.	106	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

March 25, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH6,7,10,14(0.75-3)-TCLP1**
Spl#: 175973 *Matrix:* SOIL *Extracted:* March 24, 1998
Sampled: March 18, 1998 *Run#:* 11802 *Analyzed:* March 25, 1998

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	N.D.	0.50	N.D.	105	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

March 25, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH6,7,10,14(0.75-3)-TCLP2**
Spl#: 175974 *Matrix:* SOIL *Extracted:* March 24, 1998
Sampled: March 18, 1998 *Run#:* 11802 *Analyzed:* March 25, 1998

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
LEAD	0.62	0.50	N.D.	105	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
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CHROMALAB, INC.

Environmental Services (SDB)

March 25, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH6,7,10,14(0.75-3)-TCLP3**
Spl#: 175975 *Matrix:* SOIL *Extracted:* March 24, 1998
Sampled: March 18, 1998 *Run#:* 11802 *Analyzed:* March 25, 1998

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	N.D.	0.50	N.D.	105	1

Shafi Barekzai
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CHROMALAB, INC.

Environmental Services (SDB)

March 25, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for TCLP Metals analysis.
Method: *1311/3010A/6010A/7470A Nov1990*

Client Sample ID: **SH6,7,10,14(0.75-3)-TCLP4**
Spl#: 175976 *Matrix:* SOIL *Extracted:* March 24, 1998
Sampled: March 18, 1998 *Run#:* 11802 *Analyzed:* March 25, 1998

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	N.D.	0.50	N.D.	105	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.
Environmental Services (SDB)

March 31, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 1320 Mod-CA Fresh Water/3010A/6010A*

Client Sample ID: **SH6,7,10,14(0.75-3)FRESH1**
Spl#: 175979 *Matrix:* SOIL *Extracted:* March 30, 1998
Sampled: March 18, 1998 *Run#:* 11877 *Analyzed:* March 30, 1998

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
LEAD	0.065	0.050	N.D.	104	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

March 31, 1998 *Submission #:* 9803259

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON STREET *Project#:* P135
Received: March 18, 1998

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 1320 Mod-CA Fresh Water/3010A/6010A*

Client Sample ID: **SH6,7,10,14(0.75-3)FRESH2**
Spl#: 175980 *Matrix:* SOIL *Extracted:* March 30, 1998
Sampled: March 18, 1998 *Run#:* 11877 *Analyzed:* March 30, 1998

ANALYTE	**RESULT (mg/L)**	**REPORTING LIMIT (mg/L)**	**BLANK RESULT (mg/L)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
LEAD	N.D.	0.050	N.D.	104	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

APPENDIX D

DTSC Guidance for Reclassification of Wastes Containing WET-soluble Lead Greater than 5 mg/L

Regulatory Guidance for Reclassification

Wastes Containing WET-Soluble Lead ≥ 5.0 milligrams per liter (mg/l)

Specific Environmental Threats: Toxicity due to the potential for exposure to drinking water supplies.

Tests Accepted by the Department to Demonstrate that the Substance Poses an Insignificant Threat:

Method to estimate the pollution of an aquifer by the mixing of the waste with ground or surface waters.

1 **Determination of maximum solubility in fresh water**

A minimum of four representative samples of as-generated waste must be composited and subjected to multiple extractions pursuant to a modified EPA Method 1320 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846. Extractions must be continued only until analysis reveals that the further addition of sample will yield no additional lead in the extractant. Report the results of these analyses to the Department in the final laboratory report. EPA Method 1320 is modified by substituting soft water (see attachment 1 - soft water standard) as an extraction fluid instead of sulfuric and nitric acid. The extraction fluid used for the first extraction will be reintroduced as the extraction fluid for the second and all subsequent extractions. No additional reagent water, other than that initially introduced prior to the first extraction, may be added before an extraction. After an extraction, discard the solid material remaining in the test vessel. Add a new sample of waste (100 gm. minimum) between each extraction. No pH adjustment should be performed during this procedure. The extractant should be filtered through a 0.45 µm filter prior to analysis. *Threshold Which Shows that the Substance Possesses an Insignificant Threat: Total Lead in the Final Extraction < 83µg/l.*

2 **Determination of maximum solubility in sea water**

A minimum of four representative samples of as-generated waste must be composited and subjected to multiple extractions pursuant to a modified EPA Method 1320. Extractions must be continued only until analysis reveals that the further addition of sample will yield no additional lead in the extractant. Report the results of these analyses to the Department in the final laboratory report. EPA Method 1320 is modified by substituting simulated ocean water, prepared pursuant to ASTM Standard D 1141 as the extraction fluid instead of sulfuric and nitric acid. The extraction fluid used for the first extraction will be reintroduced as the extraction fluid for the second and all subsequent extractions. No additional simulated ocean water, other than that initially introduced prior to the first extraction, may be added before an extraction. After an extraction, discard the solid material remaining in the test vessel. Add a new sample of waste (100 gm minimum) between each extraction. No pH adjustment should be performed during this procedure. The extractant should be filtered through a 0.45µm filter prior to analysis. *Threshold Which Shows that the Substance Possesses an Insignificant Threat: Total Lead in the Final Extraction <140µg/l.*

Estimation of the dissolving of lead from the leaching action of acidic leachate and the movement of the lead from the disposal area.

3 **Estimation of the movement of lead to an aquifer**

A minimum of four representative samples of as-generated waste must be subjected to analysis by the Toxicity Characteristic Leaching Procedure (TCLP), EPA Method 1311. *Threshold Which Shows that the Substances Possesses an Insignificant Threat: 80% upper confidence level of the mean of all analyzed samples < 1.5 mg/l of lead.*

Section 66260.200(f), Title 22, California Code of Regulations (22 CCR), does not reference specific test procedures for an applicant to use for the reclassification of an identified hazardous waste. Thus, the procedures contained herein are not required to be performed, but help an applicant to identify procedures which the Department will allow to indicate that the waste possesses an insignificant threat to human health and safety, livestock, and wildlife.

Regulatory Guidance for Reclassification

Attachment 1 - Soft Water Standard

Soft water is prepared by adding reagent-grade chemicals to glass-distilled and/or deionized water as shown in the following table:

Salts Required (mg/l)					Water Quality	
$NaHCO_3$	$CaSO_4$ $2H_2O$	$MgSO_4$	KCl	pH	Hardness mg $CaCo_3$/l	Alkalinity mg $CaCO_3$/l
48	30	30	2.0	7.2 - 7.6	10 - 13	10 - 13

Determine that the distilled and/or deionized water contains less than the indicated constituents:

Conductivity	1 µg/l
Total organic carbon or	1 mg/l
chemical oxygen demand	2 mg/l
Boron, fluoride	100 µg/l each
Un-ionized ammonia	20 µg/l
Aluminum, arsenic chromium, cobalt, copper, iron, lead, nickel, zinc	1 µg/l each
Total residual chlorine	3 µg/l
Cadmium, mercury, silver	100 µg/l each
Total organophosphorous pesticides	50 ng/l*
Total organochlorine pesticides plus polychlorinated biphenyls	50 ng/l*

Carbon-filtered deionized water is usually acceptable. Determine conductivity of distilled and/or deionized water for each batch of reconstituted water. Check other constituents periodically.

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*Note: No individual pesticide should exceed the allowable concentration limits outlined in the USEPA National Water Quality Guidelines as set in accordance with the federal Pollution Control Act 92-500 as amended in 1972.

STREAMBORN

510.528.4234
Fax 528.2613

Ronald Pilorin
California Environmental Protection Agency
Department of Toxic Substances Control
Human and Ecological Risk Division
PO Box 806
Sacramento CA 95812-0806

19 February 1999

Project No. P224

Response to your Request for Additional Information
Petition (Application) for Reclassification of Lead-Contaminated Soil
Waste Evaluation Unit File #F171
901 Jefferson Street
Oakland CA

Dear Mr. Pilorin:

We previously submitted a petition (application) for reclassification of lead-contaminated soil at the subject property (Figure 1). The petition was dated 26 June 1998. In response to the petition, you requested additional information. A copy of your letter, dated 24 November 1998, is attached.

In December 1998 and January 1999, pursuant to your request for additional information, additional samples were collected and additional laboratory analyses were conducted. The chain-of-custody forms and laboratory data sheets for the "new" samples are attached. The updated data set is summarized in Tables 1, 2, and 3, and Figures 2a and 2b.

The information requested in your 24 November 1998 letter is shown below in italics. Our response follows.

1) *Figure 2 of the submitted information package is an aerial photo basemap of the subject site. The site in the photo basemap is shown as being divided into two parcels labeled as Area A (outlined in red) and Area B (outlined in blue). Please provide the Department with the justification and/or rationale as to why the contaminated soils in Areas A & B were not considered as separate wastes. Information which may be part of Streamborn's justification and/or rationale would include, but not be limited to, a more detailed description of the background and/or historical aspects of the site and its assessment; statistical analysis of the analytical data collected from both areas and any population comparisons from those analyses; and other types of information and/or analytical data which would justify managing the contaminated soils from the above designated areas as one single wastestream.*

   Two areas (A and B) were delineated on Figure 2 **solely** as a geometric expedient for calculating the quantity of lead-contaminated soil. In Area A, the lead contamination extends to a depth of approximately 5 feet and in Area B, the lead contamination extends to a depth of approximately 3.5 feet. It is our experience that a variation in the depth of contamination of 1.5 feet (from 3.5 feet to 5 feet) is not unusual and is not indicative of different contaminant

Mail: [illegible]

Office: [illegible]

populations. Stated another way, given similar/identical soil types and similar/identical sources of contamination, we would expect to see the depth of contamination vary, with a variation of 1.5 feet considered normal.

The geotechnical (taxonomic) classification of the lead-contaminated soil in Area A is identical to that in Area B. Both classify as: Silty Sand (SM), dark brown, medium-dense, moist, with a fine sand texture. For both areas, no organic vapors were detected with the field meter and no chemical staining or chemical odors were observed.

Both areas have identical development and occupancy history. Both were part of an automotive service station from 1946 to 1953. Both have been part of a paved parking lot since 1953.

The lead-contaminated soil in Areas A and B exhibit the following statistical parameters (statistical calculations are attached):

Parameter	Area A	Area B
Total Lead – Range (mg/kg)	300 to 440	290 to 490
Total Lead – Mean (mg/kg)	360	350
Total Lead – Variance (mg/kg)	3,900	5,600
Total Lead – 80% Confidence Interval for the Population Mean	307 to 409	310 to 392
WET-Soluble Lead – Range (mg/L)	26 to 30	10 to 35
WET-Soluble Lead – Mean (mg/L)	28	21
WET-Soluble Lead – Variance (mg/L)	8	84
WET-Soluble Lead – 80% Confidence Interval for the Population Mean	22 to 34	15 to 27

These statistical parameters indicate that Areas A and B are from a common contaminant population.

In summary, we believe the physical and chemical characteristics of the lead-contaminated soil are similar/identical in both areas. The waste soil will be generated (excavated) as one process and should be considered one wastestream.

2) *The use of composite samples for purposes of waste characterization is not recommended by the Department and is not consistent with the guidelines outlined in chapter 9 of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, U.S. Environmental Protection Agency (SW-846). Unlike discrete samples, the information gained from the use of composite samples for waste characterization purposes is lost and generates only a single estimate of the chemical constituent present. In allowing the use of composite samples, Streamborn should statistically determine whether enough composite samples were collected by using Equation 8 of Table 9-1 referenced in SW-846 to justify the use of the composite samples and their respective analytical data. In addition, the statistical calculations should be included in the information submitted back to the Department for review.*

It is our understanding that SW-846 requires, first and foremost, the collection of representative samples. The lead-contaminated soil is not a waste as it currently exists (in the ground). The lead-contaminated soil will become a waste upon excavation; in other words, the waste will be generated upon excavation. The lead-contaminated soil will be excavated using a bucket excavator or hoe excavator, both of which will excavate the soil over an approximate 2-foot vertical interval (each time a bucket full of soil is removed). Furthermore, the act of excavation will serve to mix the soil over this approximate 2-foot vertical interval so that the waste soil, as generated, will become a composite of the vertical interval. We have collected vertically-composited samples over the following two intervals: 0.75- to 3.5-feet and 3.5- to 5-feet. We believe these samples are representative because of the fact that they have been vertically composited.

The analysis of vertically-composited samples may understate the standard deviation (and accordingly the 90% upper confidence limit) if multiple strata are present. At each of our boring locations, we continuously sampled and classified the soil with depth; we did not find evidence of stratification.

Using Equation 8 of Table 9-1 of SW-846 (along with the regulatory thresholds of 1,000 mg/kg total lead, 5 mg/L WET-soluble lead, and 5 mg/L TCLP-soluble lead), we calculate that approximately 1 sample for total lead, approximately 1 sample for WET-soluble lead, and approximately 1 sample for TCLP-soluble lead are needed (calculations are attached) (note that a relatively low number of samples are needed to statistically satisfy the criteria because the sample mean is dramatically different from the regulatory threshold when compared with the sample variance). We collected and analyzed significantly more samples than the requisite.

In January 1999, despite the aforementioned, we collected and analyzed additional grab samples.

3) *There were no aquatic bioassays performed for acute toxicity pursuant to 22 CCR section 66261.24(a)(6). Streamborn should subject no less than four (4) representative samples to a certified laboratory for analyses using the acute aquatic bioassay in accordance with the requirements of 22 CCR section 66260.200(m)(5) and 22 CCR section 66261.24(a)(6).*

Four representative samples (with total lead concentrations greater than 300 mg/kg, WET-soluble lead concentrations greater than 18 mg/L, and TCLP-soluble lead concentrations less than 1.8 mg/L) were employed for acute aquatic bioassays using fathead minnows. The 96-hour survival rate for all samples was 100% (Table 3). The bioassay summary report is attached.

4) *Table 2 of the submitted information package lacks analytical testing results for soluble lead as measured by the Waste Extraction Test (WET) on at least five (5) samples where the results of the total lead analyses is reported as greater than 50 milligrams per kilogram (mg/kg). In this particular case, these total lead results clearly warrants further testing for WET-soluble lead. Therefore, Streamborn should analyze the remainder of the samples for WET-soluble lead, perform statistical analyses consistent with SW-846 on the new set of results including, but not limited to, the mean, 80% upper confidence level (UCL), etc. Based on the results of the statistical analysis of the new data set, Streamborn may be required to collect additional samples for analytical testing.*

The five samples referenced in you comment have been disposed of by the laboratory and are no longer available for WET testing.

In December 1998 and January 1999, we collected additional soil samples and analyzed them for total lead (Table 1). For four of these samples, the concentrations of total lead exceeded 50 mg/kg and each of the four samples were analyzed for soluble lead using both WET and TCLP extractions (Table 2). Including samples collected in 1997, a total of 7 soil samples were analyzed for WET-soluble and TCLP-soluble lead. With the additional analytical results, we recalculated the statistics (Table 2) including the requisite number of samples (calculations attached). We conclude that sufficient samples were collected.

5) *Streamborn should submit to the Department all statistical calculations so they may be validated and included as part of the official file. All calculations must be consistent with the procedures and guidelines outlined in SW-846 including, but not limited to, the mean, 80% UCL, variance, the calculation showing that the appropriate number of samples (N) were taken, any transformation calculations, and other statistical calculations as warranted.*

   The statistical calculations are attached and are consistent with the procedures and guidelines outlined in SW-846.

6) *It appears that background information submitted in the application does not mention what the likely management and/or disposal options are for the contaminated soil. Although the decision to grant a reclassification is based on compelling evidence that the waste possesses mitigating physical and/or chemical characteristics, the Department may also review information on the management of the waste to ensure that there will not be any adverse impacts to the environment and/or public health.*

   After reclassification, the lead-contaminated soil will be excavated and transported to an appropriately-permitted Class 2 landfill for disposal.

If there are any questions or comments, or if you need additional information, please contact us.

Sincerely,

STREAMBORN

Kenneth B. Alexander, RG, CH
Certified Hydrogeologist

Douglas W. Lovell, PE
Geoenvironmental Engineer

Attachments

cc: Douglas N. Salter/Summit Realty Interests, Denver CO
Wayne D. Jordan/Berkeley CA

Table 1 (Page 1 of 2)

Analytical Results for Shallow Soil Samples
901 Jefferson Street, Oakland CA

Location	Depth (feet)	Sample Date	Sample Identification	Sample Type	OVM Screening (ppm v/v)	Odor and Staining	Field pH	Field Haz Cat Tests	TPH-Kerosene (mg/kg)	TPH-Diesel (mg/kg)	TPH-Motor Oil (mg/kg)	TPH-Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Other VOCs (mg/kg)	Total Lead (mg/kg)	Other Analyses (mg/L)
SH-1 and SH-2	0.75 to 3.5	16 Nov 97	SH1/SH2(0.75-3.5)	Composite	<5	none	NM	none	<1	4.9	<50	NM	NM	NM	NM	NM	NM	66	none
SH-3	0.75 to 3.5	16 Nov 97	SH3(0.75-3.5)	Composite	<5	none	NM	none	<1	2.8	<50	NM	NM	NM	NM	NM	NM	<5	none
	1.25 to 1.75	16 Nov 97	SH3(1.25-1.75)	Grab	<5	none	NM	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	none
SH-4	1.25 to 1.75	16 Nov 97	SH4(1.25-1.75)	Grab	<5	none	NM	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	none
SH-4 and SH-5	0.75 to 3.5	16 Nov 97	SH4/SH5(0.75-3.5)	Composite	<5	none	NM	none	<1	<1	<50	NM	NM	NM	NM	NM	NM	<5	none
SH-5	1.25 to 1.75	16 Nov 97	SH5(1.25-1.75)	Grab	<5	none	NM	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	none
SH-6	1.25 to 1.75	16 Nov 97	SH6(1.25-1.75)	Grab	<5	none	NM	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	none
	3 to 3.5	14 Jan 99	SH6(3-3.5)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	330	WET = 18 TCLP = 1.3
	3.5 to 5	10 Dec 97	SH6(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	47	none
SH-6 and SH-7	0.75 to 3.5	16 Nov 97	SH6/SH7(0.75-3.5)	Composite	<5	none	7.1	NF, NC Perm-Neg KI-Neg	<4	23	250	NM	NM	NM	NM	NM	NM	490	WET = 10 TCLP <1.0
SH-6, SH-7, SH-10, and SH-14	0.75 to 3.5	18 Mar 98	SH6, 7, 10, 14 (0.75-3.5)	Composite	<5	none	7.0	NF, NC Perm-Neg KI-Neg	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TCLP <0.5 FW EP Tox <0.065 SW EP Tox <0.05
				Replicate	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TCLP = 0.62
				Replicate	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TCLP <0.5
				Replicate	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	TCLP <0.5
SH-7	1.25 to 1.75	16 Nov 97	SH7(1.25-1.75)	Grab (liner)	<5	none	NM	none	NM	NM	NM	<1	<0.005	<0.005	<0.005	<0.005	<0.005 to <0.05	NM	none
	2.5 to 3	14 Jan 99	SH7(2.5-3)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	6.6	none
	3.5 to 5	10 Dec 97	SH7(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	none
SH-8 and SH-9	0.75 to 3 5	16 Nov 97	SH8/SH9(0.75-3.5)	Composite	<5	none	NM	none	<1	2.3	<50	NM	NM	NM	NM	NM	NM	9.6	none
SH-10	0.75 to 3.5	10 Dec 97	SH10(0.75-3.5)	Composite	<5	none	6.8	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	440	none
	2.5 to 3	14 Jan 99	SH10(2 5-3)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	320	WET = 26 TCLP = 1.4
	3.5 to 5	10 Dec 97	SH10(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	370	none
	4.5 to 5	14 Jan 99	SH10(4.5-5)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	300	WET = 30 TCLP = 1.8
SH-11	0.75 to 3.5	10 Dec 97	SH11(0.75-3.5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	300	none
	2.5 to 3	14 Jan 99	SH11(2.5-3)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	32	none
	3.5 to 5	10 Dec 97	SH11(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	6.0	none
SH-12	0.75 to 3.5	10 Dec 97	SH12(0.75-3.5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	290	WET = 18 TCLP <0.5
	2.5 to 3	14 Jan 99	SH12(2.5-3)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	320	WET = 35 TCLP = 1.0
	3.5 to 5	10 Dec 97	SH12(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	9.9	none
SH-13	0.75 to 3.5	10 Dec 97	SH13(0.75-3.5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	none
	3.5 to 5	10 Dec 97	SH13(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	none
SH-14	0.75 to 3.5	10 Dec 97	SH14(0.75-3.5)	Composite	<5	none	7.0	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	420	none
	3.5 to 5	10 Dec 97	SH14(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.9	none
SH-15	0.75 to 3.5	10 Dec 97	SH15(0.75-3.5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	130	WET = 20 TCLP = 0.66
				Reanalysis	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	310	WET = 22
	2.5 to 3	14 Jan 99	SH15(2.5-3)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	18	none
	3.5 to 5	10 Dec 97	SH15(3.5-5)	Composite	<5	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.1	none

Table 1 (Page 2 of 2)

Analytical Results for Shallow Soil Samples
901 Jefferson Street, Oakland CA

Location	Depth (feet)	Sample Date	Sample Identification	Sample Type	OVM Screening (ppm v/v)	Odor and Staining	Field pH	Field Haz Cat Tests	TPH-Kerosene (mg/kg)	TPH-Diesel (mg/kg)	TPH-Motor Oil (mg/kg)	TPH-Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Other VOCs (mg/kg)	Total Lead (mg/kg)	Other Analyses (mg/L)
SH-16	3 5 to 4	24 Dec 98	SH16(3.5-4)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	none
SH-17	4.5 to 5	24 Dec 98	SH17(4.5-5)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	9.9	none
SH-18	1.5 to 2	24 Dec 98	SH18(1.5-2)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	26	none
SH-19	2 to 2.5	24 Dec 98	SH19(2-2.5)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	5.6	none
SH-20	3 to 3.5	24 Dec 98	SH20(3-3.5)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	28	none
SH-21	2.5 to 3	24 Dec 98	SH21(2.5-3)	Grab	NM	none	NM	none	NM	NM	NM	NM	NM	NM	NM	NM	NM	<5	none

General Notes

(a) < indicates concentration below laboratory method reporting limit (shaded cells).

(b) Soil samples collected by Streamborn (Berkeley CA). Samples analyzed by Chromalab (Pleasanton CA).

(c) TPH = total petroleum hydrocarbons. Other VOCs = Volatile Organic Compounds of interest by EPA Method 8240. NM = Not measured.

(d) OVM = Organic Vapor Meter manufactured by Thermo Environmental Instruments, Model 580B, equipped with 10.2 eV photoionization detector, calibrated to 100 ppm v/v isobutylene.

(e) WET = California Waste Extraction Test. TCLP = Toxicity Characteristic Leaching Procedure test.

(f) Field pH measured on a slurry that was prepared using equal weights of soil and distilled water. The pH probe was immersed directly into the slurry.

(g) Field Haz Cat results: NF = nonflammable. NC = noncombustible. Perm-Neg = negative reaction to potassium permanganate test. KI-Neg = negative reaction to potassium iodine/acid test.

(h) FW EP Tox = Extraction Procedure Toxicity test modified for sequential extraction using fresh water. SW EP Tox = Extraction Procedure Toxicity test modified for sequential extraction using sea water

Table 2

Lead Analytical Results for Lead-Contaminated Soil
901 Jefferson Street, Oakland CA

								Fresh Water EP Toxicity-Soluble Lead (mg/L)		Sea Water EP Toxicity-Soluble Lead (mg/L)	
Location	Depth (feet)	Sample Date	Sample Identification	Sample Type	Total Lead (mg/kg)	WET-Soluble Lead (mg/L)	TCLP-Soluble Lead (mg/L)	Extraction 1	Extraction 2	Extraction 1	Extraction 2
SH-6	3 to 3.5	14 Jan 99	SH6(3-3.5)	Grab	330	18	1.3				
SH-6 and SH-7	0.75 to 3.5	16 Nov 97	SH6/SH7(0.75-3.5)	Composite	490	10	<1.0				
SH-6, SH-7, SH-10, and SH-14	0.75 to 3.5	18 Mar 98	SH6, 7, 10, 14 (0.75-3.5)	Composite			<0.5	0.065	<0.05	<0.05	<0.05
				Replicate			0.62				
				Replicate			<0.5				
				Replicate			<0.5				
SH-10	0.75 to 3.5	10 Dec 97	SH10(0.75-3.5)	Composite	440						
	2.5 to 3	14 Jan 99	SH10(2.5-3)	Grab	320	26	1.4				
	3.5 to 5	10 Dec 97	SH10(3.5-5)	Composite	370						
	4.5 to 5	14 Jan 99	SH10(4.5-5)	Grab	300	30	1.8				
SH-11	0.75 to 3.5	10 Dec 97	SH11(0.75-3.5)	Composite	300						
SH-12	0.75 to 3.5	10 Dec 97	SH12(0.75-3.5)	Composite	290	18	<0.5				
	2.5 to 3	14 Jan 99	SH12(2.5-3)	Grab	320	35	1.0				
SH-14	0.75 to 3.5	10 Dec 97	SH14(0.75-3.5)	Composite	420						
SH-15	0.75 to 3.5	10 Dec 97	SH15(0.75-3.5)	Composite	310	22	0.66				
				Maximum	490	35	1.8	0.065		<0.05	
				Minimum	290	10	<0.5	<0.05		<0.05	
				Sample Mean	350	23	0.99				
				Sample Variance	4,500	70	0.30				
				80% Upper Confidence Limit for the Population Mean (20% probability of exceedance)	370	26	1.2				
				90% Upper Confidence Limit for the Population Mean (10% probability of exceedance)	380	28	1.3				

General Notes

(a) < indicates concentration below laboratory method reporting limit (shaded cells).

(b) Soil samples collected by Streamborn (Berkeley CA). Samples analyzed by Chromalab (Pleasanton CA).

(c) WET = California Waste Extraction. TCLP = Toxicity Characteristic Leaching Procedure test.

(d) Statistical parameters reported to two significant digits.

(e) For statistical analysis, measurements below the reporting limit assumed equal to one-half the reporting limit.

(f) Upper confidence limits for the mean were calculated using the Student's t statistic (which assumes normally-distributed data).

Table 3

Acute Aquatic Bioassay Testing Results
901 Jefferson Street, Oakland CA

Sample Location	Depth (feet)	Sample Date	Total Lead (mg/kg)	Concentration of Soil Sample in Water (mg/L)	Run No.	96-Hour Survival Rate of *P. promelas* (fathead minnow) (% survival)
SH6	3 to 3.5	14 Jan 99	330	250	1	100
					2	100
				750	1	100
					2	100
SH10	2.5 to 3	14 Jan 99	320	250	1	100
					2	100
				750	1	100
					2	100
SH10	4.5 to 5	14 Jan 99	300	250	1	100
					2	100
				750	1	100
					2	100
SH12	2.5 to 3	14 Jan 99	320	250	1	100
					2	100
				750	1	100
					2	100
Control	NA	NA	NA	NA	1	100
					2	100

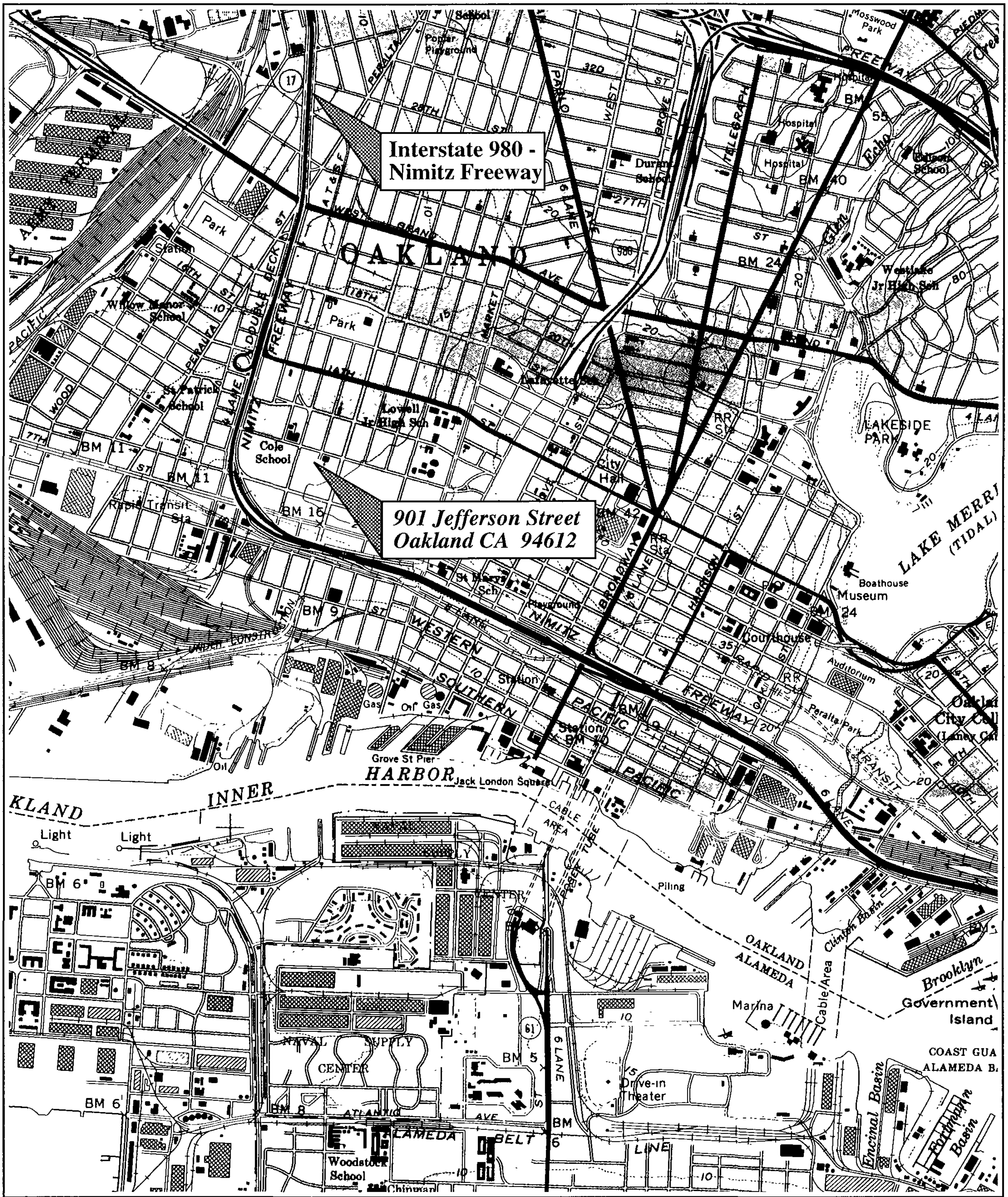
General Notes

(a) Soil samples collected by Streamborn (Berkeley CA).

(b) Bioassay testing by MEC Analytical Systems, Inc. (Tiburon CA).

(c) Control = Laboratory-prepared soft water (deionized water and Evian™ spring water).

(d) NA = Not applicable.



0 0.5 1.0

Approximate Scale in Miles

0 5,000

Approximate Scale in Feet

N

Basemap: U.S. Geological Survey, 7.5 Minute Quadrangle, Oakland West CA, 1959 (Photorevised 1980)

Figure 1

Location Map

901 Jefferson Street
Oakland CA

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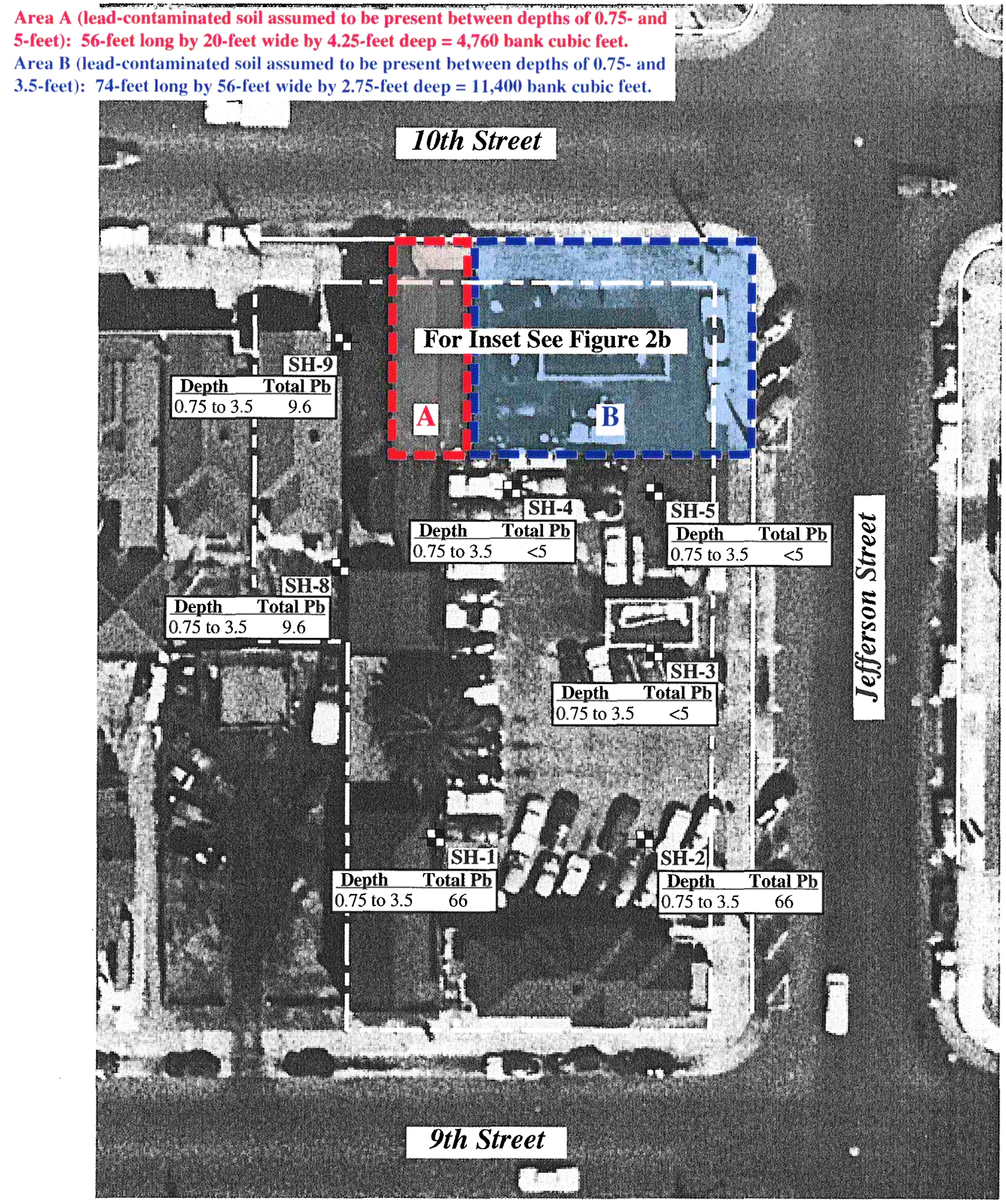


Area A (lead-contaminated soil assumed to be present between depths of 0.75- and 5-feet): 56-feet long by 20-feet wide by 4.25-feet deep = 4,760 bank cubic feet.

Area B (lead-contaminated soil assumed to be present between depths of 0.75- and 3.5-feet): 74-feet long by 56-feet wide by 2.75-feet deep = 11,400 bank cubic feet.

Notes

(1) Total Pb = Total lead. Units are mg/kg.

(2) Depth measured in feet below ground surface.

Aerial photo basemap obtained from Pacific Aerial Surveys, Oakland CA. Flown 14 April 1950.

Figure 2a

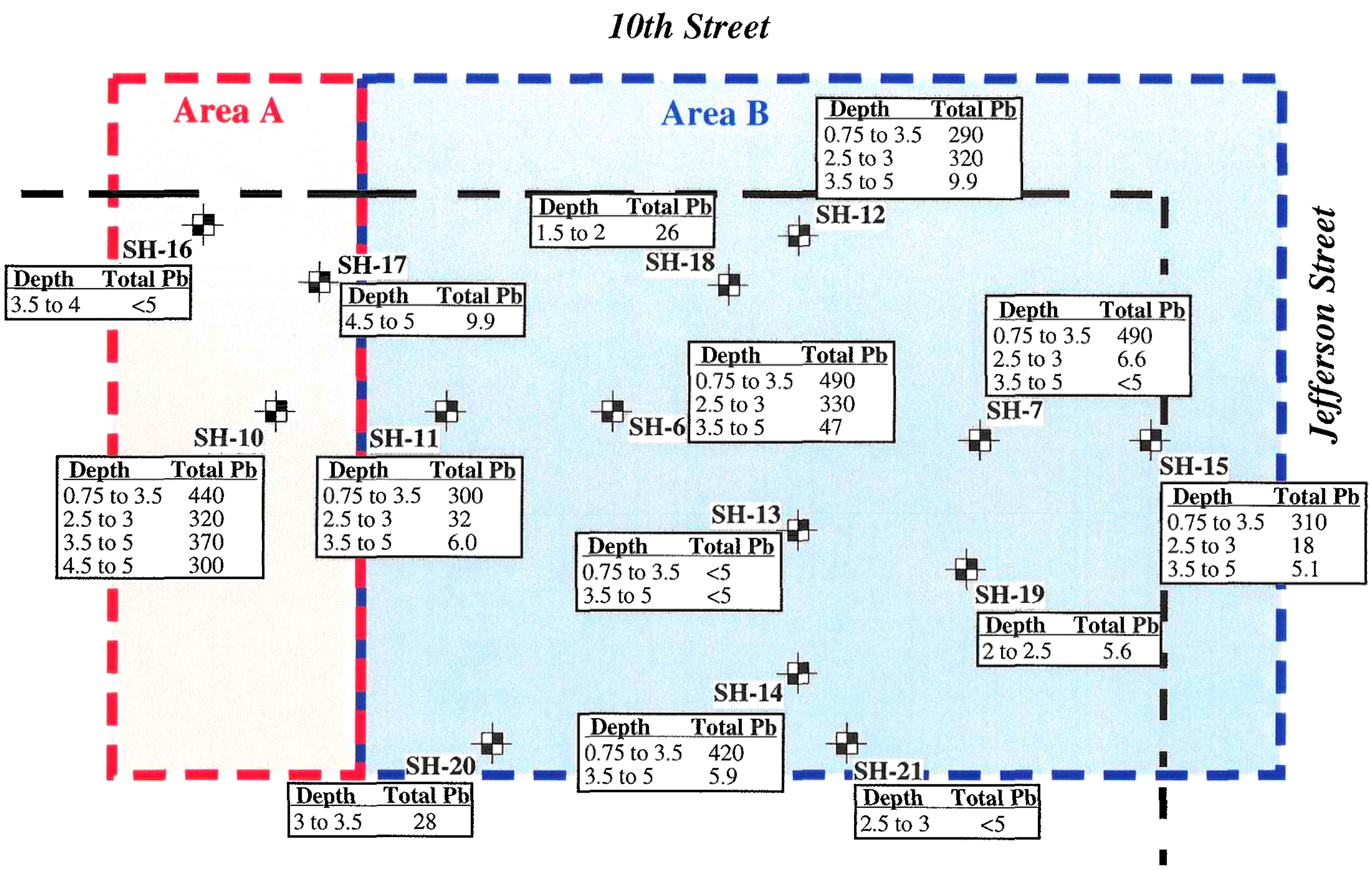
Boring Locations and Estimated Area of Lead-Contaminated Soil

901 Jefferson Street
Oakland CA

STREAMBORN

Area A (lead-contaminated soil assumed to be present between depths of 0.75- and 5-feet): 56-feet long by 20-feet wide by 4.25-feet deep = 4,760 bank cubic feet

Area B (lead-contaminated soil assumed to be present between depths of 0.75- and 3.5-feet): 74-feet long by 56-feet wide by 2.75-feet deep = 11,400 bank cubic feet



Legend

✚ Boring

- - - Property Line

Notes

(1) Total Pb = Total lead. Units are mg/kg.

(2) Depth measured in feet below ground surface.

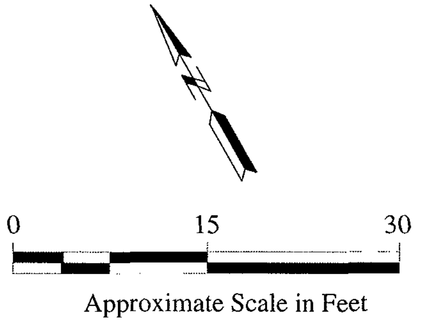


Figure 2b

Boring Locations and Estimated Area of Lead-Contaminated Soil (inset)

901 Jefferson Street
Oakland CA

STREAMBORN

ATTACHMENT 1

Request for Additional Information

Department of Toxic Substances Control

Jesse R. Huff, Director
400 P Street, 4th Floor, P.O. Box 806
Sacramento, California 95812-0806

Pete Wilson
Governor

Peter M. Rooney
Secretary for
Environmental
Protection

November 24, 1998

Mr. Kenneth B. Alexander
Streamborn
P. O. Box 8330
Berkeley, California 94707-8330

REQUEST FOR ADDITIONAL INFORMATION FOR RECLASSIFICATION OF LEAD-CONTAMINATED SOIL LOCATED AT 901 JEFFERSON STREET, OAKLAND, CALIFORNIA - WASTE EVALUATION UNIT FILE #F171 (WEU File #F171)

Dear Mr. Alexander:

The Human and Ecological Risk Division, Department of Toxic Substances Control (Department) has completed its review of a waste classification application dated June 26, 1998. The waste classification application was submitted to the Department by Streamborn on behalf of Summit Realty Interests (Summit) of Silverthorne, Colorado, pursuant to Section 66260.200(f), Title 22, California Code of Regulations (22 CCR) for reclassification of lead-contaminated soils located at 901 Jefferson Street in Oakland, California

Based on the review of the information/analytical data submitted, the Department is unable to complete its review of the aforementioned reclassification application at this time due to the lack or deficiency of information. Therefore, Streamborn should provide the following information and/or clarification to the Department to assist in completing its review:

1) Figure 2 of the submitted information package is an aerial photo basemap of the subject site. The site in the photo basemap is shown as being divided into two parcels labeled as Area A (outlined in red) and Area B (outlined in blue). Please provide the Department with the justification and/or rationale as to why the contaminated soils in Areas A & B were not considered as separate wastes. Information which may be part of Streamborn's justification and/or rationale would include, but not be limited to, a more detailed description of the background and/or historical aspects of the site and its assessment; statistical analysis of the analytical data collected from both areas and any population comparisons from those

analyses; and other types of information and/or analytical data which would justify managing the contaminated soils from the above designated areas as one single wastestream.

2) The use of composite samples for purposes of waste characterization is not recommended by the Department and is not consistent with the guidelines outlined in chapter 9 of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, U. S. Environmental Protection Agency (SW-846). Unlike discrete samples, the information gained from the use of composite samples for waste characterization purposes is lost and generates only a single estimate of the chemical constituent present. In allowing the use of composite samples, Streamborn should statistically determine whether enough composite samples were collected by using Equation 8 of Table 9-1 referenced in SW-846 to justify the use of the composite samples and their respective analytical data. In addition, the statistical calculations should be included in the information submitted back to the Department for review.

3) There were no aquatic bioassays performed for acute toxicity pursuant to 22 CCR section 66261.24(a)(6). Streamborn should subject no less than four (4) representative samples to a certified laboratory for analyses using the acute aquatic bioassay in accordance with the requirements of 22 CCR section 66260.200(m)(5) and 22 CCR section 66261.24(a)(6).

4) Table 2 of the submitted information package lacks analytical testing results for soluble lead as measured by the Waste Extraction Test (WET) on at least five (5) samples where the results of the total lead analyses is reported as greater than 50 milligrams per kilogram (mg/kg). In this particular case, these total lead results clearly warrants further testing for WET-soluble lead. Therefore, Streamborn should analyze the remainder of the samples for WET-soluble lead, perform statistical analyses consistent with SW-846 on the new set of results including, but not limited to, the mean, 80% upper confidence level (UCL), etc. Based on the results of the statistical analysis of the new set of data, Streamborn may be required to collect additional samples for analytical testing.

5) Streamborn should submit to the Department all statistical calculations so they may be validated and included as part of the official file. All calculations must be consistent with the procedures and guidelines outlined in SW-846 including, but not limited to, the mean, 80% UCL, variance, the calculation showing that the appropriate number of samples (N) were taken, any transformation calculations, and other statistical calculations as warranted.

6) It appears that background information submitted in the application does not mention what the likely management and/or disposal options are for the contaminated soil. Although the decision to grant a reclassification is based on compelling evidence that the waste possesses mitigating physical and/or chemical characteristics, the Department may also review information on the management of the waste to ensure that there will not be any adverse impacts to the environment and/or public health.

Once the above requested information and/or clarification is received, the Department will continue to evaluate your petition for reclassification. However, this does not preclude the Department from requesting further additional analytical/information for purposes of clarification nor from conducting a site visit to perform confirmation sampling should the Department deem it necessary to do so.

22 CCR section 66260.200(f) provides clarification as to the status of a waste classification request when the Department is awaiting additional information and/or clarification. According to this section, failure to respond to the Department's request for additional information within 90 days from the date of this letter will result in disapproval of your waste classification request based on insufficient information. You may request a 90 day extension in writing within which the requested information shall be submitted. In the event the Department disapproves your request due to a failure on your part to provide additional information, pursuant to 22 CCR section 66260.200(f), you may:

Feb 24

1) Resubmit your waste classification request to the Department and remit the appropriate waste classification fees, or;
2) Self-classify your waste pursuant to 22 CCR section 66260.200(c).

Should you have any questions regarding this letter, you may contact me at the above letterhead address or directly as (916) 322-9160.

Sincerely,

Ronald Pilorin
Human and Ecological Risk Division
Science, Pollution Prevention
and Technology Program

cc: See next page

cc: Jeffrey J. Wong, Ph.D., Chief
Human and Ecological Risk Division
Department of Toxic Substances Control
P. O. Box 806
Sacramento, California 95812-0806

James C. Carlisle, DVM, MSc.
Human and Ecological Risk Division
Department of Toxic Substances Control
P. O. Box 806
Sacramento, California 95812-0806

ATTACHMENT 2

Statistical Calculations

Statistical Equations and Definitions
901 Jefferson Street, Oakland CA

Number of Samples: n

Degrees of Freedom (df): $df = n - 1$

Individual concentration: x_i

Mean $(\bar{x})$**:**

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$ (assumes simple random sampling)

Variance (s^2)**:**

$$s^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2$$ (assumes simple random sampling)

Standard Deviation (s)**:**

$$s = \sqrt{s^2}$$

Standard Error $(s_{\bar{x}})$**:**

$$s_{\bar{x}} = \frac{s}{\sqrt{n}}$$

80% Confidence Interval (CI)**:**

$CI = \bar{x} \pm t_{.20} s_{\bar{x}}$ ($t_{.20}$ obtained from tabulated values for the appropriate degrees of freedom)

90% Upper Confidence Limit (UCL):

$UCL = \bar{x} + t_{.20} s_{\bar{x}}$ ($t_{.20}$ obtained from tabulated values for the appropriate degrees of freedom)

Regulatory Threshold (RT): as defined by the appropriate regulatory agency

Appropriate Number of Samples (n):

$$n = \frac{t_{.20}^2 s^2}{(RT - \bar{x})^2}$$ ($t_{.20}$ obtained from tabulated values for the appropriate degrees of freedom)

Note: Statistical equations are consistent with the guidelines outlined in Chapter 9 of *"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,"* SW-846, U.S. Environmental Protection Agency, September 1986.

Statistical Calculations for Lead-Contaminated Soil
Item No. 1 in DTSC's 24 November 1998 Letter
901 Jefferson Street, Oakland CA

AREA A:

Sample ID	Type	Total Lead (mg/kg)	WET Lead (mg/L)
SH10(0.75-3.5)	composite	440	
SH10(2.5-3)	grab	320	26
SH10(3.5-5)	composite	370	
SH10(4.5-5)	grab	300	30
Parameter			
Number of Samples (n)		4	2
Degrees of Freedom (n - 1)		3	1
Range of Values		300 to 440	26 to 30
Sample Mean ($\bar{x}$)		358	28
Sample Variance (s^2)		3,892	8
Standard Error (S_x)		31.2	2.0
t-statistic for 80% Confidence Interval on Mean		1.638	3.078
80% Confidence Interval on Mean (*CI*)		307 to 409	22 to 34

AREA B:

Sample ID	Type	Total Lead (mg/kg)	WET Lead (mg/L)
SH6(3-3.5)	grab	330	18
SH6/SH7(0.75-3.5)	composite	490	10
SH11(0.75-3.5)	composite	300	
SH12(0.75-3.5)	composite	290	18
SH122(2.5-3)	grab	320	35
SH14(0.75-3.5)	composite	420	
SH15(0.75-3.5)	composite	310	22
Parameter			
Number of Samples (n)		7	5
Degrees of Freedom (n - 1)		6	4
Range of Values		290 to 490	10 to 35
Sample Mean ($\bar{x}$)		351	21
Sample Variance (s^2)		5,581	84
Standard Error (S_x)		28.2	4.10
t-statistic for 80% Confidence Interval on Mean		1.440	1.533
80% Confidence Interval on Mean (*CI*)		310 to 392	15 to 27

Statistical Calculations for Lead-Contaminated Soil
Item No. 2 in DTSC's 24 November 1998 Letter
901 Jefferson Street, Oakland CA

Sample ID	Type	Total Lead (mg/kg)	WET Lead (mg/L)	TCLP Lead (mg/L)
SH6/SH7(0.75-3.5)	composite	490	10	<1
SH10(0.75-3.5)	composite	440		
SH10(3.5-5)	composite	370		
SH11(0.75-3.5)	composite	300		
SH12(0.75-3.5)	composite	290	18	<0.5
SH14(0.75-3.5)	composite	420		
SH15(0.75-3.5)	composite	310	22	0.66
Parameter				
Number of Samples (*n*)		7	3	3
Degrees of Freedom (*n* - 1)		6	2	2
Mean ($\bar{x}$)		374	17	0.5
Variance (s^2)		6,095	37	0.04
t-statistic for 80% Confidence Interval		1.440	1.886	1.886
Regulatory Threshold (*RT*)		1,000	5	5
Appropriate No. of Samples (*n*)		0.03	0.98	0.01

General Note

(1) Measurements below the reporting limit assumed to equal one-half the reporting limit.

Statistical Calculations for Lead-Contaminated Soil
Item No. 4 in DTSC's 24 November 1998 Letter
901 Jefferson Street, Oakland CA

Sample ID	Type	Total Lead (mg/kg)	WET Lead (mg/L)	TCLP Lead (mg/L)
SH6(3-3.5)	grab	330	18	1.3
SH6/SH7(0.75-3.5)	composite	490	10	<1
SH10(0.75-3.5)	composite	440		
SH10(2.5-3)	grab	320	26	1.4
SH10(3.5-5)	composite	370		
SH10(4.5-5)	grab	300	30	1.8
SH11(0.75-3.5)	composite	300		
SH12(0.75-3.5)	composite	290	18	<0.5
SH12(2.5-3)	grab	320	35	1.0
SH14(0.75-3.5)	composite	420		
SH15(0.75-3.5)	composite	310	22	0.66
Parameter				
Number of Samples (n)		11	7	7
Degrees of Freedom (n - 1)		10	6	6
Range of Values		290 to 490	10 to 35	<0.5 to 1.8
Sample Mean ($\bar{x}$)		354	23	0.99
Sample Variance (s^2)		4,525	70	0.30
Standard Error (S_x)		20.3	3.16	0.207
t-statistic for 80% UCL on Mean		0.92	0.96	0.96
80% UCL on Mean		373	26.0	1.19
t-statistic for 90% UCL on Mean		1.37	1.44	1.44
90% UCL on Mean		382	27.6	1.29
Regulatory Threshold (RT)		1,000	5	5
Appropriate No. of Samples (n)		0.02	0.46	0.04

General Note

(1) Measurements below the reporting limit assumed to equal one-half the reporting limit.

ATTACHMENT 3

Laboratory Data Sheets and Chain-of-Custody Forms

CHROMALAB, INC.

Environmental Services (SDB)

January 5, 1999 *Submission #:* 9812412

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON LEAD RECLAS *Project#:* P224
Received: December 28, 1998

re: 6 samples for Lead analysis.
Method: *EPA 3050A/7420A*

Matrix: SOIL *Extracted:* December 30, 1998
Sampled: December 24, 1998 *Run#:* 16755 *Analyzed:* December 30, 1998

Spl#	CLIENT SPL ID	LEAD (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
223042	SH18(1.5-2)	26	5.0	N.D.	101	1
223043	SH19(2-2.5)	5.6	5.0	N.D.	101	1
223044	SH20(3-3.5)	28	5.0	N.D.	101	1
223045	SH21(2.5-3)	N.D.	5.0	N.D.	101	1

Matrix: SOIL *Extracted:* December 30, 1998
Sampled: December 24, 1998 *Run#:* 16756 *Analyzed:* December 30, 1998

Spl#	CLIENT SPL ID	LEAD (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
223040	SH16(3.5-4)	N.D.	5.0	N.D.	104	1
223041	SH17(4.5-5)	9.9	5.0	N.D.	104	1

Shafi Barekzai
Analyst

Michael Verona
Operations Manager

9812412 / 300

STREAMBORN **CHAIN-OF-CUSTODY**

43866

Project Name: 901 Jefferson Lead Reclassification	Project Location: Oakland CA	Project Number: P224
Sampler: K. Alexander	Laboratory: Chromalab	Laboratory Number:

SUBM #: 9812412 REP: PM
CLIENT: STREAM
DUE: 01/0~~4~~5/99
REF #:43866

			Matrix			Type		Containers				Turnaround			Analyses						6 bags 4.8	
Sample Designation	Date	Time	Soil	Water	Vapor	Grab	Composite	Quantity	Type	Preservative	Filtration (0.45-µm)	24-Hour	5- Working Days	10-Working Days	Total Lead	TCLP Lead Iron	WET Lead				Sampler Comments	Laboratory Comments
SH16 (3.5-4)	**24-Dec-98**	**9:00**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH17 (4.5-5)	**24-Dec-98**	**9:30**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH18 (1.5-2)	**24-Dec-98**	**10:30**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH19 (2-2.5)	**24-Dec-98**	**11:00**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH20 (3-3.5)	**24-Dec-98**	**12:00**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH21 (2.5-3)	**24-Dec-98**	**12:40**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
																					Do not discard samples. Hold samples for possible further analysis.	

Note: Sampler and laboratory to observe preservative, condition, integrity, etc. of samples and record (under "Comments") any exceptions from standard protocols.

Relinquished By: K.B. Al	Received By:	Date: 12-28-98 Time: 1412
Relinquished By:	Received By:	Date: 12-28-98 Time: 1630

STREAMBORN Mail: PO Box 8330, Berkeley CA 94707-8330 Office: 900 Santa Fe Ave, Albany CA 94706 510/528-4234 Fax: 528-2613

CHROMALAB, INC.

Environmental Services (SDB)

January 25, 1999

Submission #: 9901159
Revised

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON LEAD RECLAS *Project#:* P224
Received: January 14, 1999

re: 7 samples for Lead analysis.
Method: EPA 3050A/7420A

Matrix: SOIL *Extracted:* January 15, 1999
Sampled: January 14, 1999 *Run#:* 16993 *Analyzed:* January 15, 1999

Spl#	**CLIENT SPL ID**	**LEAD (mg/Kg)**	**REPORTING LIMIT (mg/Kg)**	**BLANK RESULT (mg/Kg)**	**BLANK SPIKE (%)**	**DILUTION FACTOR**
225225	SH10(2.5-3.0)	320	5.0	N.D.	104	1
225226	SH10(4.5-5.0)	300	5.0	N.D.	104	1
225227	SH11(2.5-3.0)	32	5.0	N.D.	104	1
225228	SH6(3.0-3.5)	330	5.0	N.D.	104	1
225229	SH7(2.5-3.0)	6.6	5.0	N.D.	104	1
225230	SH15(2.5-3.0)	18	5.0	N.D.	104	1
225231	SH12(2.5-3.0)	320	5.0	N.D.	104	1

Shafi Barekzai
Analyst

Michael Verona
Operations Manager

510-528-2613 PM 01/21

1220 Quarry Lane • Pleasanton, California 94566-4756
(925) 484-1919 • Facsimile (925) 484-1096

M014 0 0C0405 PIERRE 15 31

SUBM #: 9901159 REP: FH
CLIENT: STREAM
DUE: 01/21/99
REF #:44124

9901159/ 225-32

44124

Project Name: 901 Jefferson Lead Reclassification	Project Location: Oakland CA	Project Number: P224
Sampler: K. Alexander	Laboratory: Chromalab	Laboratory Number:

			Matrix			Type		Containers				Turnaround			Analyses						
Sample Designation	Date	Time	Soil	Water	Vapor	Grab	Composite	Quantity	Type	Preservative	Filtration (0.45-µm)	24-Hour	5- Working Days	10-Working Days	Total Lead	TCLP Lead Iron	WET Lead				Sampler Comments	Laboratory Comments
SH10 (2.5-3)	**14-Jan-99**	**8:00**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH10 (4.5-5)	**14-Jan-99**	**8:15**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH11 (2.5-3)	**14-Jan-99**	**8:45**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH6 (3-3.5)	**14-Jan-99**	**9:00**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH7 (2.5-3)	**14-Jan-99**	**9:30**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH15 (2.5-3)	**14-Jan-99**	**9:50**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
SH12 (2.5-3)	**14-Jan-99**	**10:10**	**X**			**X**		**1**	**bag**	**cold**			**X**		**X**							
																					Do not discard samples. Hold samples for possible further analysis.	

Note: Sampler and laboratory to observe preservative, condition, integrity, etc. of samples and record (under "Comments") any exceptions from standard protocols

Relinquished By: K. B. Alx	Received By:	Date: 1·14·99	Time: 1205
Relinquished By:	Received By:	Date: 1/14/99	Time: 1815

STREAMBORN Mail: PO Box 8330, Berkeley CA 94707-8330 Office: 900 Santa Fe Ave, Albany CA 94706 510/528-4234 Fax: 528-2613

4.6°C
soil bags

CHROMALAB, INC.
Environmental Services (SDB)

January 28, 1999 *Submission #:* 9901265

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON LEAD RECLAS *Project#:* P224
Received: January 14, 1999

re: 4 samples for TCLP Lead analysis.
Method: *EPA 3010A/7420A*

Matrix: SOIL *Extracted:* January 28, 1999
Sampled: January 14, 1999 *Run#:* 17160 *Analyzed:* January 28, 1999

Spl#	CLIENT SPL ID	LEAD (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
226237	SH10(2.5-3.0)	1.4	1.0	N.D.	103	1
226239	SH10(4.5-5.0)	1.8	1.0	N.D.	103	1
226241	SH6(3.0-3.5)	1.3	1.0	N.D.	103	1
226243	SH12(2.5-3.0)	1.0	1.0	N.D.	103	1

Christopher Arndt
Analyst

Michael Verona
Operations Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(925) 484-1919 • Facsimile (925) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

January 28, 1999 *Submission #:* 9901265

STREAMBORN

Atten: Keg Alexander

Project: 901 JEFFERSON LEAD RECLAS *Project#:* P224
Received: January 14, 1999

re: 4 samples for STLC Lead analysis.
Method: *CA WET3005A/7420A*

Matrix: SOIL *Extracted:* January 27, 1999
Sampled: January 14, 1999 *Run#:* 17156 *Analyzed:* January 27, 1999

Spl#	CLIENT SPL ID	LEAD (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
226236	SH10(2.5-3.0)	26	1.0	N.D.	96.0	1
226238	SH10(4.5-5.0)	30	1.0	N.D.	96.0	1
226240	SH6(3.0-3.5)	18	1.0	N.D.	96.0	1
226242	SH12(2.5-3.0)	35	1.0	N.D.	96.0	1

Shafi Barekzai
Analyst

Michael Verona
Operations Manager

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

SUBM #: 9901265 REP: PM
CLIENT: STREAM
DUE: 01/28/99
REF #:44264/9901159

w Submission No: 44269

der No:

RUSH

Original Submission Info

Client Name: Streamborn

Project Mgr: K. Alexander

Project Name: 901 Jefferson Road Reclassification

Project No: 7224

PO#:

Date Received: 1/14/99

Submission No: 9901159

Name of Caller: Ken Alexander

Call Date: 1/25/99 Time:

Add on Due Date: 1/28/99 Date Sampled 1/14/99

Comments:

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)	TCLP Pb	STLC Pb		NUMBER OF CONTAINERS
SH 10 (2.5-3.0)	1/14/99		Soil	None																		X	X		1
SH 10 (4.5-5.0)	↓		↓	↓																		X	X		1
SH 6 (3.0-3.5)	↓		↓	↓																		X	X		1
SH 12 (2.5-3.0)	↓		↓	↓																		X	X		1

MFC ANALYTICAL SYSTEMS, INC.

28 January, 1999

Keg Alexander
Streamborn
PO Box 8830
Berkeley, CA 94707-8330

Dear Mr. Alexander:

Thank you for the opportunity to provide environmental services Streamborn. Enclosed please find two copies each "Summary Report for an Acute Bioassay" and a copy of the chain of custody forms for the sample collected 14 January 1999. Your project number is identified as 0018 - 001. Your personal project number is P224.

If you have any questions or comments regarding these reports please call me at (415) 435-1847.

Sincerely,

Mark Burke
Laboratory Manager

Enclosure

2433 Impala Dr., Carlsbad, CA 92008
(619) 931-8081 FAX (619) 931-1580

2300 Contra Costa Blvd., Suite 370, Pleasant Hill, CA 94523
(510) 602-4900 FAX (510) 602-4907

98 Main St., Suite 428, Tiburon, CA 94920
(415) 435-1847 FAX (415) 435-0479

Test Dates: 23 - 27 January 1999

Report Issued by:
MEC Analytical Systems, Inc.
Bioassay Division
98 Main St. #428
Tiburon, CA 94920

Report Issued to:
Streamborn
PO Box 8830
Berkeley, CA 94707-8330

REPORT DATE: 28-Jan-99
PROJECT #: 0018-001

SAMPLE AND BIOASSAY INFORMATION

TEST INFORMATION

Control Water:	Soft water (Deionized water+ Evian™ spring water)
Exposure volume:	10 L
Test chambers:	20 L
Concentrations (mg/L):	250, 750
# Fish/chamber:	10

SPECIES INFORMATION

Species:	*Pimephales promelas*
Common name:	Fathead Minnows
Source:	Rob Thomas Fish Company Anderson, CA
Age of Fish:	Juvenile
Mean weight (gm):	0 19
Standard Mean Length (mm):	24 7

SAMPLE INFORMATION

Sample Type:	Solid
Client Sample ID:	SH10 (2 5-3), SH10 (4 5-5), SH6 (3-3 5), SH12 (2 5-3)
Client Project Number:	P224
Sample Date:	14 January 1999
Sample Received:	22 January 1999
MEC Sample ID #:	T990122 04, T990122 05, T990122 06, T990122 07,

Alkalinity and Hardness

Conc. (mg/L)	Day 0		Day 4	
	Alk.	Hard.	Alk.	Hard.
Control	52	46	52	48
750 SH10 (2.5-3)	56	52	52	48
750 SH10 (4.5-5)	56	48	52	48
750 SH6 (3-3.5)	54	58	48	52
750 SH12 (2.5-3)	54	56	60	60

Results
NOEC (mg/L): 750
LC 50 (mg/L): >750

Water Quality and Fish Counts

Concentration (mg/L)	Rep	Day 0					Day 1					Day 2					Day 3					Day 4					Survival (%)
		Temp	D.O.	pH	Cond	# Alive	Temp	D.O.	pH	Cond	# Alive	Temp	D.O.	pH	Cond	# Alive	Temp	D.O.	pH	Cond	# Alive	Temp	D.O.	pH	Cond	# Alive	
Control	1	19 3	9 0	7.57	85	10	18 9	8 4	7.58	86	10	20 3	7 9	7 56	93	10	20 2	9 0	7.54	95	10	20 2	8 1	7 60	96	10	100
	2	19 2	9 0	7.62	85	10	18 8	8 2	7.61	86	10	19 9	7 9	7 48	91	10	20 0	9 0	7 56	93	10	19 7	8 1	7 62	94	10	100
SH10 (2.5-3)																											
250	1	19.3	9.0	7.65	85	*	18.8	8 5	7.61	86	10	20 1	7 7	7 60	91	10	20.0	9 1	7 57	93	10	19 9	8 0	7 62	93	10	100
	2	19 3	9.0	7.67	85	*	18.7	8 4	7 59	86	10	20 0	7.7	7 60	92	10	20 0	9 0	7 58	93	10	19 9	7 9	7 61	93	10	100
750	1	19 2	9.0	7 65	85	10	18 6	8 3	7.59	86	10	19 9	7 7	7 60	92	10	19 9	8 7	7.58	93	10	19 8	7 9	7 61	94	10	100
	2	19.1	9 0	7 64	85	10	18 4	8.3	7 59	85	10	19 2	7 7	7 61	90	10	19 3	8 6	7 65	92	10	19 1	7 8	7 63	92	10	100
SH10 (4.5-5)																											
250	1	19 1	9 0	7 64	85	*	18 2	8 5	7.55	84	10	18 5	8.1	7 60	89	10	18 6	8 9	7 61	92	10	18 6	8 3	7 66	94	10	100
	2	19 2	9 0	7.65	86	*	18 6	8 5	7 59	87	10	19 9	7 9	7 63	91	10	19 9	89 0	7 63	94	10	19 7	8 3	7 67	95	10	100
750	1	19.9	8.9	7 62	87	10	18.0	8 4	7 59	86	10	19 3	7 9	7 63	91	10	19 3	8 9	7 63	92	10	19 2	7 9	7 66	93	10	100
	2	21.0	8 6	7.71	89	10	18 3	8.4	7 61	86	10	19 9	8 0	7 62	91	10	19 7	8 9	7 63	92	10	19 6	8 0	7 65	93	10	100
SH6 (3-3.5)																											
250	1	21 8	8 6	7.69	90	10	18 9	8 0	7 49	87	10	20 1	7 8	7 53	92	10	20 1	8 9	7 58	93	10	20 1	7 9	7 64	94	10	100
	2	21 8	8 5	7 71	91	10	19 0	8 0	7 55	88	10	20 1	7 7	7 57	93	10	20 2	8 8	7 60	95	10	20 0	7 9	7 63	96	10	100
750	1	19 6	8 8	7 68	87	10	18 6	8 1	7 57	88	10	19 5	7 5	7 59	94	10	20 0	8 5	7 61	96	10	19 6	7 7	7 79	97	10	100
	2	19 6	8 9	7 70	87	10	18 5	8 1	7 60	88	10	19 6	7.6	7 52	93	10	20 1	8 4	7 63	96	10	19 4	7 8	7 70	96	10	100
SH12 (2.5-3)																											
250	1	19.6	8.9	7.93	90	10	18 9	8 5	7 70	94	10	20 2	7 8	7 59	102	10	20 2	8 8	7 67	107	10	20 1	7 9	7 64	108	10	100
	2	20 4	8 9	7 93	91	10	18 7	8 3	7 73	93	10	19 9	7 7	7 66	100	10	20 1	8.8	7 71	106	10	19 9	7 9	7 68	108	10	100
750	1	21 1	8 6	8.13	95	10	18 6	8 3	7 88	99	10	19 7	7 7	7 77	109	10	19 9	8 9	7 73	114	10	19 6	7 8	7 72	116	10	100
	2	21 5	8 6	8.17	96	10	18.5	8 3	7 98	98	10	19 7	7.8	7 84	109	10	19 8	9.0	7 81	114	10	19 5	7 8	7 73	116	10	100

Paul R. Krause Ph. D.
Laboratory Director

Mark Burke
Laboratory Manager

Reference Polisini and Miller. 1988 Static Acute Bioassay Procedures for Hazardous Waste Samples
California Department of Fish and Game, Water Pollution Control Laboratory

* Too murky for accurate count

SAMPLE RECEIVING INFORMATION SHEET

MEC Analytical Systems, Inc.
3150 Paradise Drive, Bldg. 36
Tiburon, CA 94920

Client Name: Streamborn	**Requested Analyses:**
Project #: 0018	**Analyst Initials:** **Analysis Date:**

MEC Sample ID	Client Sample ID	Collection Date	Container Type	Sample Quantity	Temp-rature (°C)	pH (pH units)	Dissolved Oxygen (mg/L)	Salinity (ppt)	Total Ammonia (mg/L)	Total Chlorine (mg/L)
T990122.04	SH10(2.5-3)	1/14/99	Ziploc bag	~400mL						
T990122.05	SH10(4.5-5)	↓	↓	↓		N/A				
T990122.06	SH6(3-3.5)	↓	↓	↓				SOLIDS		
T990122.07	SH12(2.5-3)	↓	↓	↓						

Storage Requirements: [✓ 4°C/Dark] Frozen Room Temperature (Circle one)

Storage Location: Cold Room Freezer [✓ HazMat/Locked Storage] (Circle one)

STREAMBORN CHAIN-OF-CUSTODY

Project Name: 901 Jefferson Lead Reclassification	Project Location: Oakland CA	Project Number: P224
Sampler: K. Alexander	Laboratory: MEC Analytical Systems, Inc.	Laboratory Number:

			Matrix			Type		Containers				Turnaround			Analyses							
Sample Designation	Date	Time	Soil	Water	Vapor	Grab	Composite	Quantity	Type	Preservative	Filtration (0.45-µm)	24-Hour	Standard	10-Working Days	Haz Waste Screening						Sampler Comments	Laboratory Comments
SH10 (2.5-3)	14-Jan-99	8:00	X			X		1	bag	cold			X		X							
SH10 (4.5-5)	14-Jan-99	8:15	X			X		1	bag	cold			X		X							
SH6 (3-3.5)	14-Jan-99	9:00	X			X		1	bag	cold			X		X							
SH12 (2.5-3)	14-Jan-99	10:10	X			X		1	bag	cold			X		X							

Note: Sampler and laboratory to observe preservative, condition, integrity, etc. of samples and record (under "Comments") any exceptions from standard protocols.

Relinquished By: K. B. Al	Received By:	Date: 1/22/99	Time: 11:00am
Relinquished By:	Received By:	Date:	Time:

STREAMBORN Mail: PO Box 8330, Berkeley CA 94707-8330 Office: 900 Santa Fe Ave, Albany CA 94706 510/528-4234 Fax: 528-2613

Department of Toxic Substances Control

Edwin F. Lowry, Director
400 P Street, 4th Floor, P.O. Box 806
Sacramento, California 95812-0806

Winston H. Hickox
Secretary for
Environmental
Protection

Gray Davis
Governor

August 23, 1999

Mr. Wayne Jordan
Jordan Real Estate Investments
18 Alvarado St.
Berkeley, CA 94705

Dear Mr. Jordan:

With regard to your application to reclassify your waste ad non-hazardous (WEU file #F-171), the Department is now applying an additional criterion to decisions about reclassifying wastes: total lead must be below 350 ppm (based on the one-tailed 90% upper confidence limit on the mean).

Sincerely,

J. C. Carlisle

James C. Carlisle, DVM
Chief, Waste Evaluation Unit

cc: Kenneth Alexander
Streamborn
Post Office Box 8330
Berkeley, CA 94707