GEOMATRIX

UNDERGROUND STORAGE TANK REMOVAL REPORT

American President Lines Terminal
1395 Middle Harbor Road
Oakland, California 94607

Prepared for

Port of Oakland
530 Water Street
Oakland, California

Prepared by

Geomatrix Consultants, Inc.
100 Pine Street, 10th Floor
San Francisco, California 94111

June 1992
Project No. 2026

Geomatrix Consultants

PORT OF OAKLAND

July 7, 1992

Mr. Dennis Byrne
Alameda County Health Agency
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, CA 94621

Subject: Underground Storage Tank Removal Report for American President Lines (APL), 1395 Middle Harbor Road, Oakland

Dear Mr. Byrne:

Enclosed, you will find one copy of the Underground Storage Tanks Removal Report for American President Lines Terminal, 1395 Middle Harbor Road, Oakland CA 94607. The following four tanks were removed from this site on 7 January 1992: one 10,000 gallon fiberglass diesel, one 5,000 gallon steel diesel, one 1,000 gallon fiberglass gasoline, and one 550 gallon steel waste oil.

During excavation, it was found that the 550 gallon steel tank had been leaking for an unknown period of time. In addition, the 1,000 gallon gasoline tank was punctured during excavation. Side wall and groundwater sampling indicated that the area around the tanks were contaminated with gasoline, diesel, waste oil, and solvents.

Subsequent to the tank removal, additional soil was excavated to attempt to remove as much contamination as possible under the constraints of the site. During the subsequent excavation it became apparent that there was no appreciable decrease in the level of contamination with the additional soils removal. After confirming with you by phone, the Port filled the excavation with clean fill.

Stockpiled soils were determined to contain elevated levels of gasoline, diesel, oil, and solvents. The Port applied to the Bay Area Air Quality Management District (BAAQMD) for a permit to aerate the stockpiled soils to remove the chlorinated solvents prior to moving the soils to the Port's bioremediation area. The BAAQMD approved the procedure, and the soils were aerated until the chlorinated solvents were no longer detected. The soils are now stockpiled at the Port bioremedation site near Langley Street and Doolittle Drive..

The Port has requested that Geomatrix Consultants, Inc. prepare a work plan to investigate the impacts from the former underground

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storage tanks at this site. We will send you a copy of the work plan for your approval as soon as it is available. Please contact Mr. Jon Amdur of my staff at (510) 272-1184 if you have any questions.

Sincerely,

Neil Werner

Neil Werner
Environmental Compliance Supervisor

enclosure

cc: Richard Hyatt (RWQCB)
Jon Amdur
Dave Adams
Robert Cathey
Elizabeth Wells (Geomatrix)
Sally Gooden (Geomatrix)

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UNDERGROUND STORAGE TANK REMOVAL REPORT
American President Lines Terminal
1395 Middle Harbor Road
Oakland, California

1.0 INTRODUCTION

This report describes tank removal activities conducted 6 January through 4 March 1992 at the American President Lines (APL) Terminal at the Port of Oakland in Oakland, California (Figures 1 and 2). Removal and disposal procedures for four underground storage tanks, soil sampling, laboratory analytical results, conclusions, and recommendations are presented in this report. This report is being submitted to the Port of Oakland by Geomatrix Consultants, Inc. (Geomatrix).

We understand that the four tanks at the site had been used for storage of diesel (one 10,000-gallon capacity fiberglass, and one 5,000-gallon capacity steel), gasoline (one 1,000-gallon capacity fiberglass), and waste oil (one 550-gallon capacity steel). It is not known when the four tanks were installed. The four tanks were used until their removal in early 1992.

2.0 TANK REMOVAL ACTIVITIES

The Port of Oakland retained Tank Protect Engineering (Tank Protect) of Union City, California to remove the underground storage tanks, excavate soil as required, and backfill and resurface the excavation. The tanks were removed under the Alameda County Department of Environmental Health (ACDEH) Underground Tank Closure Plan, approved and stamped by Dennis Byrne of ACDEH on 11 November 1991. A copy of the plan is included in Appendix A. A Geomatrix representative was on site to observe tank removal activities, collect soil samples from the tank excavation, and observe backfilling. Dennis Byrne was on site to observe tank removal and soil sampling. A representative of the Oakland Fire Department (OFD), Steve Hallert, was on site to observe tank removal activities on 7 January 1992. Because tank removal activities were conducted over several

9. ~~[redacted]~~

240 gal
5
550

~~[redacted]~~

days, the OFD representative indicated in the field that the ACDEH could approve tank removal activities on behalf of the OFD.

2.1 SITE PREPARATION

We understand that an underground utility check was conducted by Tank Protect before beginning tank removal activities. The four underground storage tanks were beneath a twelve-inch thick, rebar-reinforced concrete slab. Tank Protect removed the concrete slab using a Kato HD-700 excavator on 6 and 7 January 1992. Approximately 50 cubic yards of concrete was disposed of off site by Tank Protect at Landfill Management in Hayward, California.

For access purposes, a chain link fence on the north side of the excavation was removed by Tank Protect during field activities. Temporary fencing was used during excavation activities to restrict access to the work area, and the permanent fence was replaced upon completion of field activities.

2.2 TANK STABILIZATION AND DISPOSAL OF TANK CONTENTS

Before removing the tanks, each tank was rendered inert by pumping the remaining fluid from the tank and placing dry ice in the tank. On 6 January 1992, the site occupant, APL, pumped approximately 4,000 gallons of diesel from the 10,000-gallon capacity diesel tank into one of their fuel storage trucks to be used as fuel in their vehicles on site. Because APL could not remove all of the tank contents, Tank Protect pumped an additional 240 gallons of diesel into 55-gallon drums; the diesel subsequently was transferred from the drums into a truck by Alviso Independent Oil (Alviso) for recycling at their facility in Alviso, California. On 7 January 1992, APL pumped 2,000 gallons of diesel from the 5,000-gallon capacity tank into one of their trucks for reuse. Tank Protect pumped an additional 5 gallons of diesel from the tank into a 55-gallon drum that was subsequently collected by Alviso for recycling. The 1,000-gallon gasoline tank contained no liquid at the time of removal. On 7 and 8 January 1992, Tank Protect pumped approximately 550 gallons of liquid consisting of water and petroleum product, from the waste oil tank into 55-

gallon drums. Alviso subsequently transferred the liquid from the drums into a truck for transport to their recycling facility.

On 7 and 8 January 1992, Tank Protect inserted dry ice into each of the tanks to remove organic vapors and oxygen from the tank. Approximately 250 pounds of dry ice were inserted into the 10,000-gallon capacity diesel tank, 300 pounds of dry ice were inserted into the 5,000-gallon capacity diesel tank, 100 pounds of dry ice were inserted into the 1,000-gallon capacity gasoline tank, and 30 pounds of dry ice were inserted into the waste oil tank.

Explosivity and oxygen content were measured in the tanks following inserting. Explosivity meter readings taken in the tanks before removal indicated that organic vapor concentrations were below the Lower Explosive Limit (LEL) of 20 percent. A summary of the explosivity and oxygen content is presented below. The ACDEH representative approved removal of the tanks based on these readings.

Tank	Explosivity Meter Reading (%)	Oxygen Content (%)
10,000 gallon	0	10
5,000 gallon	1	3
1,000 gallon	10	15
550 gallon	0	0

2.3 TANK EXCAVATION AND FIELD OBSERVATIONS

Observations were made by a Geomatrix representative during removal of the tanks regarding the condition of each tank and the occurrence of petroleum product in the soil and groundwater. The former tank locations and excavation boundary are shown on Figure 3. Soil excavated during tank removal activities was segregated based on the location from which it was removed in the tank excavation and stockpiled on plastic sheeting on site. The stockpiled soil was sampled and subsequently covered with plastic sheeting.

Following inerting, the tanks were removed from the excavation and observed by the ACDEH inspector and Geomatrix personnel for holes. The top of the 10,000-gallon diesel tank was exposed at 2.5 feet below ground surface. The tank was 8 feet in diameter and 30 feet in length and contained no visible holes. The top of 5,000-gallon diesel tank was exposed at 3 feet below ground surface. The tank was 8 feet in diameter and 14 feet long and contained no visible holes. During tank removal activities, Tank Protect punctured the 1,000-gallon gasoline tank. The top of the tank was exposed at 3 feet below ground surface. The gasoline tank was 4 feet in diameter and 10.5 feet long and contained no visible holes, except for the puncture created during removal activities. The top of the waste oil tank was exposed at 6 feet below ground surface. When the tank was exposed, it appeared that the waste oil tank had been overfilled in the past, based on staining observed on the tank and in the soil around the tank. The waste oil tank was 4 feet in diameter and 6.5 feet long. Two holes were observed in the tank: a one-inch-long gash on the side of the tank and a three-quarter-inch diameter hole in the top of the tank.

Following removal, excess gravel and loose straps were removed from the tanks. The 1,000-gallon gasoline tank was wrapped in plastic and secured with tape. The tanks were transported off site by a licensed hazardous waste transportation company (Erickson, Inc.), to their receiving facility in Richmond, California. Tank Protect also removed the fuel island, pumps, and appurtenant piping. Copies of the Uniform Hazardous Waste Manifests are included in Appendix A.

Fill surrounding the tanks was composed of a sandy material. Field measurements of volatile organic compounds (VOCs) made using a photoionization detector (PID) during soil removal, and visual inspection and odors, indicated that fill surrounding the tanks contained VOCs and petroleum product. Groundwater accumulated in the tank excavation at a depth of approximately 4 to 6 feet below ground surface. Groundwater within the excavation had visible petroleum product, approximately one-half inch in thickness, floating on the surface.

GW pumped from pit

2,600 gal 1/10/92 — 2000 aliso / — 600 ? "

10,000 gal 3/3/92 - Evergreen Env. Services Newark, CA ↓

10,000 gal 3/4/92

2.4 GROUNDWATER SAMPLING

A total of approximately 2,600 gallons of liquid, consisting of water and petroleum product was pumped from the tank excavation on 10 January 1992. Tank Protect pumped approximately 600 gallons of liquid into 55-gallon drums. Alviso, retained by Tank Protect, pumped approximately 2,000 gallons of liquid from the tank excavation and transported it off site for recycling. Tank Protect reportedly arranged for the liquid in the drums to be transferred into a truck and transported off site for recycling. Tank Protect also placed sorbent pads on the surface of the groundwater in the excavation to absorb petroleum product.

At the request of the Port of Oakland, Geomatrix collected two grab groundwater samples after the groundwater was pumped from the excavation and allowed to recharge for chemical analysis for volatile organic compounds (VOCs). One sample was collected from the west end of the excavation near the large diesel tank (WDA-1). The second sample was collected from a drum containing groundwater and petroleum product pumped from the east end of the excavation near the waste oil tank (WWO-1). The samples were collected in 40-milliliter (ml) volatile organic analysis vials to minimize headspace. The samples were stored in an ice-cooled chest until delivered to a state-certified analytical laboratory under Geomatrix chain-of-custody procedures. The grab groundwater samples were analyzed by GTEL Environmental Laboratories, Inc. (GTEL), of Concord, California, a state-certified analytical laboratory selected by the Port. Copies of the chain-of-custody record and analytical laboratory report are included in Appendix B. Analytical methods and results are discussed in Section 3.0 of this report.

2.5 TRENCHING AND SOIL SAMPLING

On 14 January 1992, one trench was advanced to the north and one to the south of the excavation (Figure 3) to assess the lateral extent of petroleum-affected soil in the vicinity of the waste oil tank. The trench locations were selected in the end of the excavation where the waste oil tank was located because holes were observed in the tank when it was

The trenches extended laterally approximately 15 feet in each direction (Figure 3). The trenches were advanced to a maximum depth of approximately seven feet below ground surface, where groundwater was observed to be entering the trenches. The stratigraphy observed in the trenches was 1 to 2 feet of fill material underlain by 1 to 3 feet of gray clay, which in turn is underlain by a greenish sand. Based on observations in the trenches, this lower sand is 1 to 2 feet in thickness and is underlain by dark gray clay. Samples of the upper clay and sand layers were collected at five-foot intervals away from the tank excavation. The soil samples were collected in clean, thin-walled brass tubes from the bucket of the backhoe. The sample tubes were sealed at the ends with aluminum foil, plastic end caps, and duct tape, and placed in an ice-cooled chest. Based on observations made in the field, including lithology and possible staining of the soil, six samples (T1-5-4, T1-10-5, T2-5-6, T2-5-5, T2-10-7, and T2-13-5) were delivered under Geomatrix chain-of-custody procedures to GTEL for chemical analysis. A copy of the chain-of-custody record is included as part of the analytical laboratory report in Appendix B. Analytical methods and results are discussed in Section 3.0 of this report.

2.6 EXCAVATION SOIL SAMPLING

Seven soil samples were collected from the excavation sidewalls (APL-1 through APL-7) on 15 January 1992 (Figure 3). The sidewall samples were collected from immediately above the groundwater table at depths of four to six feet below ground surface. The soil from APL-1 was fill, APL-5 was a clay and APL-7 was a sand. All the other samples were collected in an aggregate base. The soil samples were collected directly from the bucket of the excavator or backhoe by driving a clean, thin-walled brass tube into the soil. The samples were sealed at each end with aluminum foil, plastic end caps, and duct tape. The soil samples were labeled and stored in an ice-cooled container until delivery under Geomatrix chain-of-custody procedure to GTEL. Copies of the chain-of-custody records and analytical laboratory reports are included as part of the analytical laboratory report in Appendix B. The analytical methods and results are discussed in Section 3.0 of this report.

2.7 ADDITIONAL SOIL EXCAVATION

On 3 February 1992, additional soil was excavated at the west end of the excavation to remove petroleum-affected soil in the direction of the APL Terminal building. Additional soil excavation was not conducted to the south, near samples APL-3 and APL-7, due to space limitations and the presence of a large concrete slab, or to the north, near sample APL-2, due to the requirements of APL and the Port of Oakland regarding maintaining the security fence. Geomatrix personnel were on site to observe the excavation and screen soil for petroleum hydrocarbons using thin-layer chromatography (TLC). As the excavation advanced to the west, results of the TLC indicated the concentrations of petroleum hydrocarbons in the soil were greater than 1,000 milligrams per kilogram (mg/kg); soil removal was discontinued approximately 5 to 10 feet beyond the initial excavation due to the proximity of the APL Terminal building. Two soil samples (APL2-1 and APL2-2) were collected from the excavation walls in the area of additional soil removal for chemical analysis to document the concentration of petroleum hydrocarbons left in place at the site (Figure 3). The soil samples were collected in clean, thin-walled brass tubes from the bucket of the backhoe. The samples were stored in an ice-cooled chest and delivered under Geomatrix chain-of-custody procedures to BC Analytical (BCA) of Emeryville, California, a state-certified analytical laboratory. A copy of the chain-of-custody record is included as part of the analytical laboratory report in Appendix B. Analytical methods and results are discussed in Section 3.0 of this report.

2.8 STOCKPILE SOIL SAMPLING

The stockpiled soil was sampled for chemical analysis. The soil samples were collected by removing the top half- to one-foot of soil from the pile and driving a clean, thin-walled brass tube into the soil. The samples were sealed at each end with aluminum foil, plastic end caps, and duct tape. Four samples were collected for every 50 cubic yards of stockpiled soil and were then composited into one sample by the analytical laboratory before analysis. The soil samples were labeled and stored in an ice-cooled container until delivery under Geomatrix chain-of-custody procedure to GTEL. A copy of the chain-of-

custody records as part of the analytical laboratory report is included in Appendix B. The analytical methods and results are discussed in Section 3.0 of this report.

2.9 EXCAVATION BACKFILLING

At the request of the Port of Oakland, Geomatrix observed backfilling activities at the site. Backfilling and compaction operations were performed by Tank Protect. As a result of rain, the excavation filled with water before backfilling activities began. To remove the excess water and allow proper placement of the backfill, approximately 10,000 gallons of liquid was pumped from the excavation by Evergreen Environmental Services (Evergreen) of Newark, California on 3 March 1992. Imported pea gravel was placed in the excavation to a depth of 18-inches below the existing pavement and was compacted using a sheepsfoot attachment on the excavator. On 4 March 1992, Evergreen pumped an additional 10,000 gallons of liquid from the excavation to bring the water level to 6 inches below the top of the pea gravel. Filter fabric was placed on top of the pea gravel, and a one-foot thick layer of aggregate base was placed and compacted on top of the filter fabric. Tank Protect paved the excavation area with a six-inch layer of asphalt-concrete matching the existing grade on 31 March 1992. We understand that the piping associated with the waste-oil tank line in the APL Terminal building was cut and grout sealed by Tank Protect on 24 April 1992.

3.0 ANALYTICAL METHODS AND RESULTS

A summary of analytical methods and results for soil and groundwater samples collected during field activities is presented in the following sections. Chemical analyses were performed by GTEL. Copies of the laboratory analytical reports are included in Appendix B.

3.1 GRAB GROUNDWATER SAMPLES

At the request of the Port of Oakland, grab groundwater samples were analyzed by U.S. Environmental Protection Agency (EPA) Method 8240 for VOCs for characterization for disposal. Analytical results of the grab groundwater samples are summarized in Table 1.

The results indicate the grab groundwater sample collected from the drum (WWO-1) contains VOCs, including vinyl chloride, 1,2-dichloroethene (1,2-DCE), trichloroethene (TCE), methylene chloride, benzene, toluene, ethylbenzene, xylenes, acetone, and tetrachloroethene (PCE) at concentrations of 50 to 3900 micrograms per liter (μg/l). Most of these VOCs also were reported at concentrations up to 300 μg/l in the grab groundwater sample collected from the west end of the excavation (WDA-1). Chemical concentrations of the grab groundwater sample collected from the 55-gallon drum are generally higher than for the sample collected from the excavation; the higher results likely are caused by the presence of free-phase hydrocarbons in the drums; the fluid in the drums was collected to remove the free product from the excavation.

In summary, groundwater beneath the site appears to have been affected by petroleum hydrocarbons and halogenated organic compounds.

3.2 EXCAVATION SOIL SAMPLES

Based on discussions with the ACDEH representative in the field, soil samples were analyzed in accordance with the recommendations in the California Regional Water Quality Control Boards's "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites," August 1990. Soil samples collected from near the two diesel tanks were analyzed for total petroleum hydrocarbons as diesel (TPHd), total petroleum hydrocarbons as gasoline (TPHg), and benzene, toluene, ethylbenzene and xylenes (BTEX); the soil sample collected from near the gasoline tank was analyzed for TPHg, and BTEX; and the soil samples collected adjacent to the waste-oil tank were analyzed for TPHg, TPHd, BTEX, oil and grease, VOCs, and total cadmium (Cd), chromium (Cr), lead (Pb), zinc (Zn), and nickel (Ni). The soil sampling locations are shown on Figure 3 and the analytical methods used for each sample are listed in Table 2.

The analytical results for excavation soil samples are summarized in Table 3. Soil represented by samples APL-4 and APL-6 was subsequently removed during the additional soil excavation (Figure 3). Results indicated that TPHd in the excavation samples either

were not reported above the laboratory detection limit of 10 milligrams per kilogram (mg/kg; samples APL-1 and APL-5) or were detected at concentrations ranging from 1,000 to 11,000 mg/kg (samples APL-2, APL-3, APL-4, APL-6, APL-7, APL2-1, and APL2-2). TLC performed in the field indicated the concentrations of petroleum hydrocarbons in the soil were greater than 1,000 milligrams per kilogram (mg/kg). These results were confirmed by the analytical results of soil samples APL2-1 and APL2-2, that were reported to contain 5,000 mg/kg TPHd each.

TPHg was either not reported above the laboratory detected limit of 1 mg/kg (APL-1 and APL-5) or was detected at concentrations ranging from 140 to 500 mg/kg (APL-2, APL-3, APL-4, APL-6, and APL-7). BTEX was detected at maximum concentrations of 0.6, 12, 11, and 61 mg/kg, respectively, in the excavation soil samples. Of the three soil samples analyzed for halogenated VOCs, only APL-2 was reported to contain 1,2-dichloroethene at a concentration of 1.1 mg/kg. The two samples analyzed for oil and grease, APL-5 and APL-6, contained 11 and 1200 mg/kg, respectively. Samples APL-5 and APL-6 also were analyzed for Cd, Cr, Pb, Ni, and Zn. Analytical results for these metals are within expected background concentrations for soil.

In summary, the results of the excavation soil samples indicate the primary petroleum hydrocarbon detected in soil is TPHd. Soil samples collected from the north, south, and west walls of the excavation contain TPHd at 2100 to 11,000 mg/kg. Low concentrations of TPHg and BTEX also were reported.

3.3 TRENCH SOIL SAMPLES

The soil samples collected from the trenches were analyzed for the compounds associated with sampling in the vicinity of the waste oil tank, including TPHd; TPHg; oil & grease; BTEX; and total Cd, Cr, Pb, Ni, and Zn (Table 2). Selected samples (T1-5-4 and T2-5-6) from the trenches also were analyzed for halogenated VOCs by EPA Method 8010. The soil samples contained no TPHd above the laboratory detection limit of 10 mg/kg. TPHg was detected only in two of the six soil samples (T2-5-6 and T2-10-7) at concentrations of

35 and 5 mg/kg, respectively. Oil and grease was reported in five of the six soil samples at concentrations ranging from 10 to 180 mg/kg. BTEX were detected in three of the soil samples at maximum concentrations of 0.15, 1.2, 0.45, and 2.5 mg/kg, respectively. Metals concentrations reported for the six trench soil samples are within expected background concentrations. No halogenated VOCs were detected in the two samples analyzed by EPA Method 8010.

In summary, the results of the trench sampling program indicate that soil at the east end of the excavation contains relatively low concentrations of petroleum hydrocarbons.

3.4 STOCKPILE SOIL SAMPLES

Soil samples collected from the stockpiled material were analyzed for TPHg, TPHd, and VOCs. Soil samples collected from soil that was excavated from the vicinity of the waste oil tank, designated SWO(1-4) and SWO(5-8), also were analyzed for oil and grease, and total Cd, Cr, Pb, Ni, and Zn. At the request of the Port of Oakland for characterization for bioremediation, soil samples collected from soil that was excavated from the vicinity of the diesel and gasoline tanks, designated SDA(1-4), SDA(5-8), and SDA2(1-4), and soil samples SWO (9-12) also were analyzed for semivolatile organic compounds, and total metals specified by the California Code of Regulations, Title 22. At the request of the Port of Oakland, one soil sample also was collected for an aquatic toxicity test to confirm that the soil is not a hazardous waste and for characterization for bioremediation. The analytical methods used for each of the composited stockpile samples are listed in Table 2.

The analytical results of the composited stockpile samples are summarized in Table 4. TPHg was either not reported above the laboratory detection limit of 10 or was detected at concentrations ranging from 43 to 610 mg/kg. TPHd was reported at concentrations between 300 and 2600 mg/kg. Oil and grease was detected at concentrations ranging from 1000 to 2400 mg/kg. Semivolatile compounds detected in the four soil samples analyzed include naphthalene, 2-methylnaphthalene, dibenzofuran, fluorene, phenanthrene, fluoranthene, pyrene, bis(2-ethylhexyl)phthalate, benzo(k)fluoranthene, benzo(a)pyrene,

indeno(1,2,3-c,d)pyrene, and benzo(g,h,i)perylene at concentrations ranging from 0.34 to 5.4 mg/kg. VOCs, including primarily TCE, BTEX, and PCE, were detected in the stockpiled soil samples at concentrations up to 32 mg/kg (Table 4). Metals concentrations detected in the composited soil samples are within expected background concentrations. The results of the aquatic toxicity test indicated 100 percent survival of the fish. Based on these results and Title 22 (of the California Code of Regulations) criteria, the stockpile soil does not constitute a hazardous waste.

In summary, analytical results indicate the stockpiled soil contains petroleum hydrocarbons, including TPHd, TPHg, and oil and grease, at concentrations up to 2,600 mg/kg. Semi-volatile and halogenated volatile organic compounds also were detected in the soil samples from the stockpiled soil. Results of the aquatic toxicity test indicate that the soil is not a hazardous waste.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results of excavation sidewall samples and field screening using TLC indicate that soil in the vicinity of the former underground diesel storage tank in the central and western portions of the excavation contains elevated concentrations of petroleum hydrocarbons. Soil containing total petroleum hydrocarbons at concentrations greater than 1000 mg/kg at the north, south, and west ends of the excavation could not be removed due to the location of the security fence, concrete slab, and the proximity of the building to the tank excavation and was left in place. Analytical results of the excavation and trench samples indicate that affected soil in the vicinity of the former underground storage tanks at the eastern end of the excavation was removed and soil above the water table, left in place, has not been significantly impacted by petroleum hydrocarbons. The analytical results of the grab groundwater samples collected from the excavation indicate the presence of volatile organic compounds in groundwater at the site.

Based on the results presented in this report, we recommend that a work plan be developed to evaluate the impacts from the former underground tanks at the APL terminal.

The analytical results of the composited soil samples indicate that the stockpiled material contains elevated concentrations of petroleum hydrocarbons and VOCs. At the request of the Port of Oakland, Geomatrix applied for a permit to aerate the stockpiled soil from the Bay Area Air Quality Management District (BAAQMD). The BAAQMD approved aeration of the stockpiled soil in a 10 February 1992 letter to Geomatrix. A copy of this letter is included in Appendix A. We understand that the analytical results performed for bioremediation characterization indicate that the soil will meet the Port of Oakland requirements for bioremediation at their on-site remediation pad after aeration of the chlorinated hydrocarbons. Therefore, once aeration is complete, we recommend the soil be bioremediated to reduce the concentrations of TPH in the soil to acceptable levels for disposal at an off-site Class III facility or used as fill in the Port area.

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TABLE 1
SUMMARY OF EPA METHOD 8240 ANALYTICAL RESULTS[1]
GRAB GROUNDWATER SAMPLES
American President Lines Terminal
Oakland, California

concentrations in micrograms per liter (µg/l)

Analyte Detected[2]	WDA-1	WWO-1
Vinyl Chloride	300	130
Methylene Chloride	18	3900
Acetone	ND[3]	1300
1,1-DCA	ND	84
1,2-DCE	79	160
1,1,1-TCA	ND	90
TCE	15	2100
Benzene	41	1400
PCE	6.2	940
Toluene	71	2300
Ethylbenzene	32	320
Xylenes	180	1600
Trichlorofluoromethane	ND	50

[1] Samples collected by Geomatrix Consultants, Inc., and analyses performed by GTEL Environmental Laboratories, Inc. of Concord, California, using EPA Method 8240.

[2] DCA - dichloroethane
DCE - dichloroethene
TCA - trichlorothane
TCE - trichlorothene
PCE - tetrachloroethene

[3] ND - indicates analyte not detected.

WDA-1 groundwater collected from the west end of the tank pit excavation after pump and recharge.

WWO-1 groundwater sample collected from purged water from tank pit near waste oil UST.

TABLE 2

ANALYTICAL METHODS FOR EXCAVATION, TRENCH, AND STOCKPILE SOIL SAMPLES[1]

American President Lines Terminal
Oakland, California

Sample Identification	TPH as gasoline	TPH as diesel	Oil & Grease	BTEX	EPA Method 8240	EPA Method 8010	EPA Method 8270	Cd, Cr, Pb, Ni, Zn	Title 22 Metals
Excavation Soil Samples									
APL-1	X	X		X					
APL-2	X	X			X				
APL-3	X	X		X					
APL-4	X	X		X					
APL-5	X	X	X		X			X	
APL-6	X	X	X		X			X	
APL-7	X	X		X					
APL2-1		X		X					
APL2-2		X		X					
Trench Soil Samples									
T1-5-4	X	X	X	X		X		X	
T1-10-5	X	X	X	X				X	
T2-5-6	X	X	X	X		X		X	
T2-5-5	X	X	X	X				X	
T2-10-7	X	X	X	X				X	
T2-13-5	X	X	X	X				X	

TABLE 2

ANALYTICAL METHODS FOR EXCAVATION, TRENCH, AND STOCKPILE SOIL SAMPLES[1]

Sample Identification	TPH as gasoline	TPH as diesel	Oil & Grease	BTEX	EPA Method 8240	EPA Method 8010	EPA Method 8270	Cd, Cr, Pb, Ni, Zn	Title 22 Metals
Composited Stockpile Soil Samples									
SWO (1-4)	X	X	X		X			X	
SWO (5-8)	X	X	X		X			X	
SWO (9-12)	X	X	X		X		X		X
SDA (1-4)	X	X			X		X		X
SDA (5-8)	X	X			X		X		X
SDA2 (1-4)	X	X			X		X		X

[1] Total petroleum hydrocarbons (TPH) as gasoline by modified EPA Method 8015; TPH as diesel by EPA Method 8015; oil and grease by Standard Method 5520C; benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020; cadmium (Ca), chromium (Cr), lead (Pb), nickel (Ni), and zinc (Zn) by EPA Method 6010; Title 22 metals by EPA Methods 6010 and 7471.

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TABLE 3
SUMMARY OF ANALYTICAL RESULTS[1]
EXCAVATION AND TRENCH SOIL SAMPLES
American President Lines Terminal
Oakland, California

concentrations in milligrams per kilogram (mg/kg)

	TPHg	TPHd	Benzene	Toluene	Ethyl benzene	Xylenes	EPA Method 8240	Oil & Grease	EPA Method 8010	Cd	Cr	Pb	Ni	Zn
Excavation														
APL-1	<1	<10	<0.005	0.005	<0.005	<0.015	NA[2]	NA	NA	NA	NA	NA	NA	NA
APL-2	500	2100	0.47	11	9.8	39	1.1[3]	NA	NA	NA	NA	NA	NA	NA
APL-3	290	3200	0.59	2	2.3	15	NA	NA	NA	NA	NA	NA	NA	NA
APL-4[4]	170	1800	0.13	0.65	1.5	8	NA	NA	NA	NA	NA	NA	NA	NA
APL-5	<1	<10	<0.005	<0.005	<0.005	<0.005	ND[5]	11	NA	<1	48	49	51	81
APL-6[4]	140	1000	<0.3	0.76	0.87	4.3	ND[5]	1200	NA	<1	9	<5	12	22
APL-7	210	11,000	0.17	1.62	4.7	20.4	NA	NA	NA	NA	NA	NA	NA	NA
APL2-1	NA	5000	<0.5	3.3	3.2	21	NA	NA	NA	NA	NA	NA	NA	NA
APL2-2	NA	5000	0.7	12	11	61	NA	NA	NA	NA	NA	NA	NA	NA
Trenches														
T1-5-4	<1	<10	<0.005	<0.005	<0.005	<0.015	NA	10	ND	<1	47	25	40	61
T1-10-5	<1	<10	<0.005	<0.005	<0.005	<0.015	NA	56	NA	<1	42	10	31	66
T2-5-6	35	<10	0.15	1.2	0.45	2.5	NA	180	ND	<1	19	<5	17	49
T2-5-5	<1	<10	<0.005	<0.005	<0.005	<0.015	NA	33	NA	<1	47	52	42	81
T2-10-7	5	<10	<0.005	<0.005	<0.005	0.02	NA	<5	NA	<1	26	<5	14	14
T2-13-5	<1	<10	0.006	0.008	<0.005	<0.015	NA	40	NA	<1	40	76	42	83

1 Analyses performed by GTEL Environmental Laboratories, Inc. of Concord, California with the exception of APL2-1 and APL2-2. Analyses were performed on these two samples by BC Analytical of Emeryville, California. Refer to Table 2 of this report for methods used.
2 Soil sample not analyzed by the test method or for the analyte indicated.
3 Sample APL-2 contains 1.1 milligram per kilogram 1,2-dichloroethene.
4 Soil samples APL-4 and APL-6 excavated during additional soil removal activities.
5 No analytes for the test method reported above laboratory detection limits.

TABLE 4
SUMMARY OF ANALYTICAL RESULTS[1]
STOCKPILE SOIL SAMPLES
American President Lines Terminal
Oakland, California

concentrations in milligrams per kilogram (mg/kg)

Analyte[2]	SWO (1-4)	SWO (5-8)	SWO (9-12)	SDA (1-4)	SDA (5-8)	SDA2 (1-4)
TPH-gasoline	180	210	43	<10	270	610
TPH-diesel	650	570	300	1100	490	2600
Total Oil & Grease	2100	2400	1000	NA[3]	NA	NA
EPA Method 8270						
Naphthalene	NA	NA	1.1	1.8	2.9	4
2-Methylnaphthalene	NA	NA	1.7	5.4	4.1	6
Dibenzofuran	NA	NA	<0.3	0.43	<0.3	<3
Fluorene	NA	NA	<0.3	0.64	<0.3	<3
Phenanthrene	NA	NA	1.2	1.8	1.2	<5
Fluoranthene	NA	NA	1.3	0.7	0.34	<3
Pyrene	NA	NA	0.81	1.3	0.99	<3
Bis(2-ethylhexyl) phthalate	NA	NA	<0.3	0.65	0.99	<5
Benzo(k)fluoranthene	NA	NA	0.55	<0.3	<0.3	<8
Benzo(a)pyrene	NA	NA	0.36	<0.3	<0.3	<3
Indeno(1,2,3-c,d)pyrene	NA	NA	0.76	0.83	<0.3	<5
Benzo(g,h,i)perylene	NA	NA	0.92	0.89	0.66	<3
EPA Method 8240						
Methylene chloride	0.1	0.22	<.027	<0.006	0.075	<4
Acetone	0.172	0.25	<5.4	<0.1	<0.56	<20
1,1-Dichloroethane	0.022	0.043	<0.27	<0.006	<0.028	<0.8
1,2-Dichloroethene, total	0.058	0.078	<0.27	0.021	0.035	<0.8
1,1,1-Trichloroethane	0.065	0.12	<0.27	<0.006	0.1	<0.8
Trichloroethene	11	16	1.8	1.3	6.7	<0.8
Benzene	1.6	2.1	<0.27	0.07	0.75	<0.8
Tetrachloroethene	5.9	9.4	1.0	0.11	7.1	<0.8
Toluene	11	13	2.5	0.89	8	2.2
Ethylbenzene	4.2	4.2	1.7	0.51	0.83	1.7
Xylenes, total	25	26	10	4.5	32	12
Trichlorofluoromethane	0.061	0.12	<0.27	<0.006	<0.028	<0.8

TABLE 4
SUMMARY OF ANALYTICAL RESULTS[1]

concentrations in milligrams per kilogram (mg/kg)

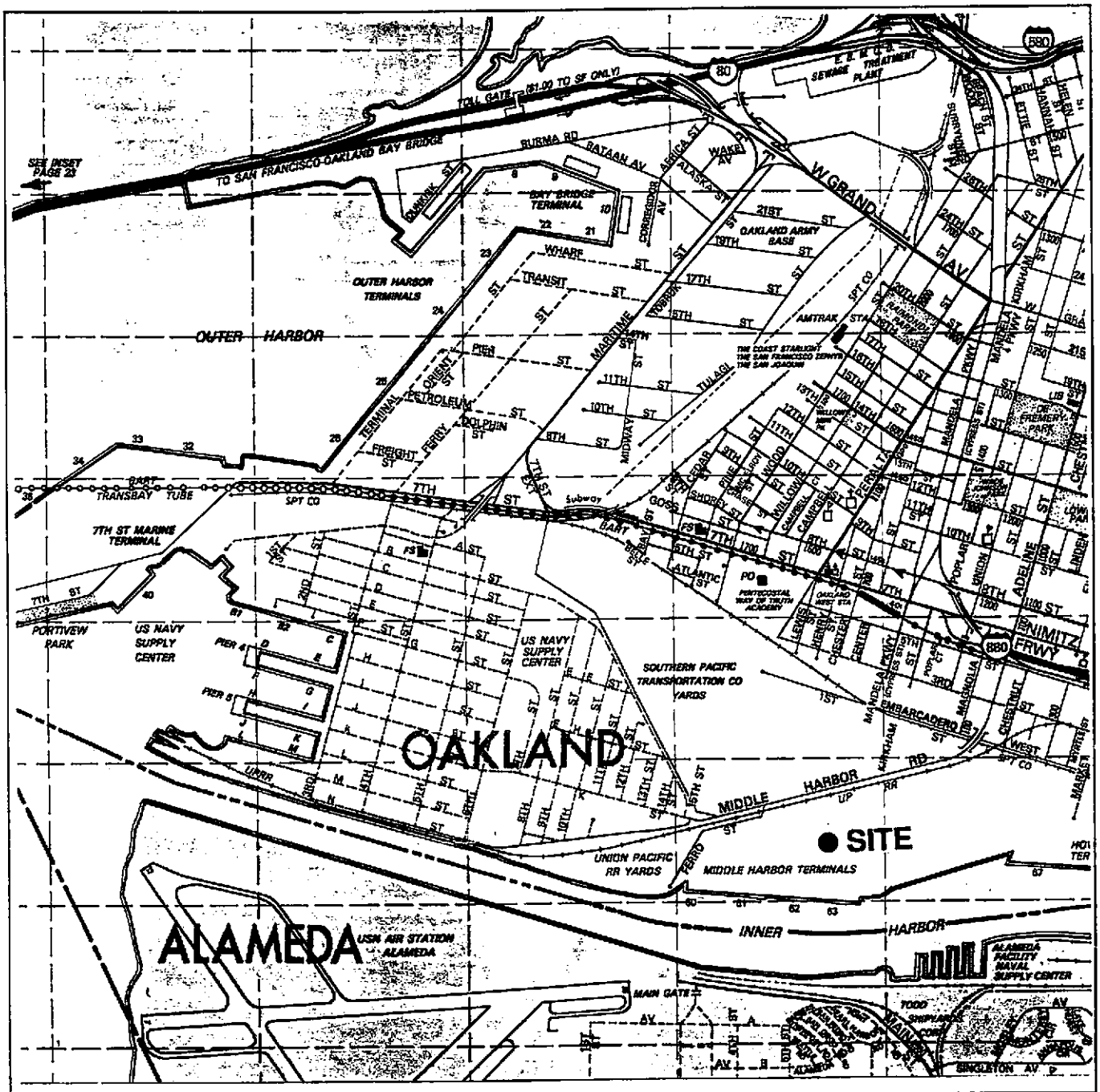
Analyte[2]	SWO (1-4)	SWO (5-8)	SWO (9-12)	SDA (1-4)	SDA (5-8)	SDA2 (1-4)
Title 22 Metals						
Antimony	NA	NA	<5	<5	<5	<4
Arsenic	NA	NA	7	<5	<5	0.8
Barium	NA	NA	87	55	46	71
Beryllium	NA	NA	<1	<1	<1	0.3
Cadmium	<1	<1	<1	<1	<1	5
Chromium (total)	27	27	26	21	24	13
Cobalt	NA	NA	6	5	5	6
Copper	NA	NA	16	13	14	9
Lead	12	17	5	9	19	8
Mercury	NA	NA	0.09	NA	NA	0.05
Molybdenum	NA	NA	<1	<1	<1	<4
Nickel	28	32	29	25	28	14
Selenium	NA	NA	<5	<5	<5	<0.4
Silver	NA	NA	<2.5	<2.5	<2.5	<1
Thallium	NA	NA	18	<10	<10	<4
Vanadium	NA	NA	24	20	19	19
Zinc	93	110	42	41	190	29

Notes:

[1] Soil samples were collected by Geomatrix Consultants, Inc. and were composited by the analytical laboratory before analysis. Analyses performed on SWO (1-4), SWO (5-8), SWO (9-12), SDA (1-4), and SDA (5-8) by GTEL Laboratories, Inc. of Concord, California. Analyses on SDA2 (1-4) performed by BC Analytical of Emeryville, California. Refer to Table 2 of this report for methods used.

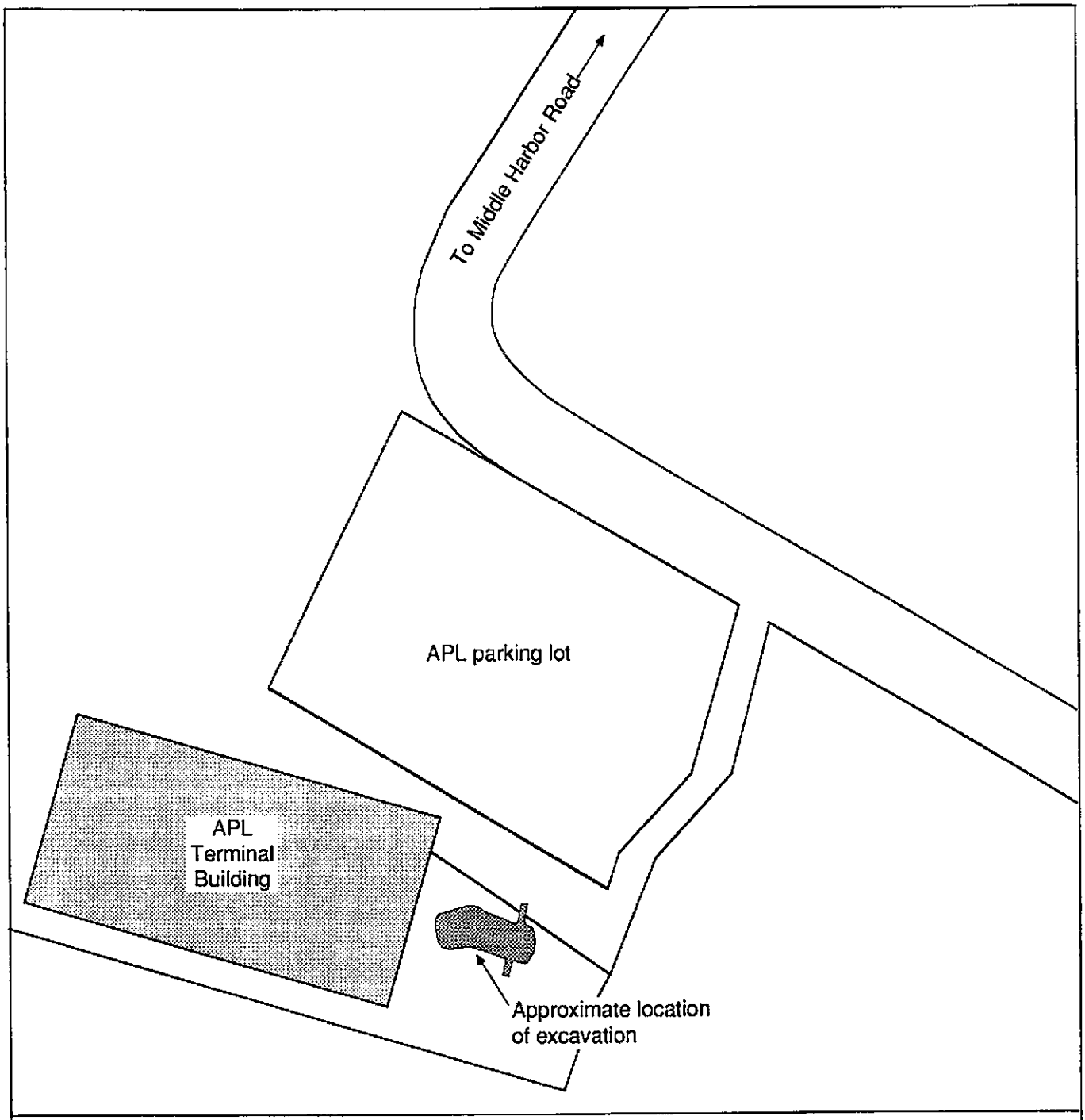
[2] TPH - total petroleum hydrocarbons.

[3] NA - indicates not analyzed for this compound.



Reference: Thomas Brothers Maps
Alameda County
1990

GEOMATRIX	SITE LOCATION MAP American President Lines Terminal 1395 Middle Harbor Road Oakland, California	Figure 1 Project No. 2026



0 100 Feet

Based on figure provided by the Port of Oakland

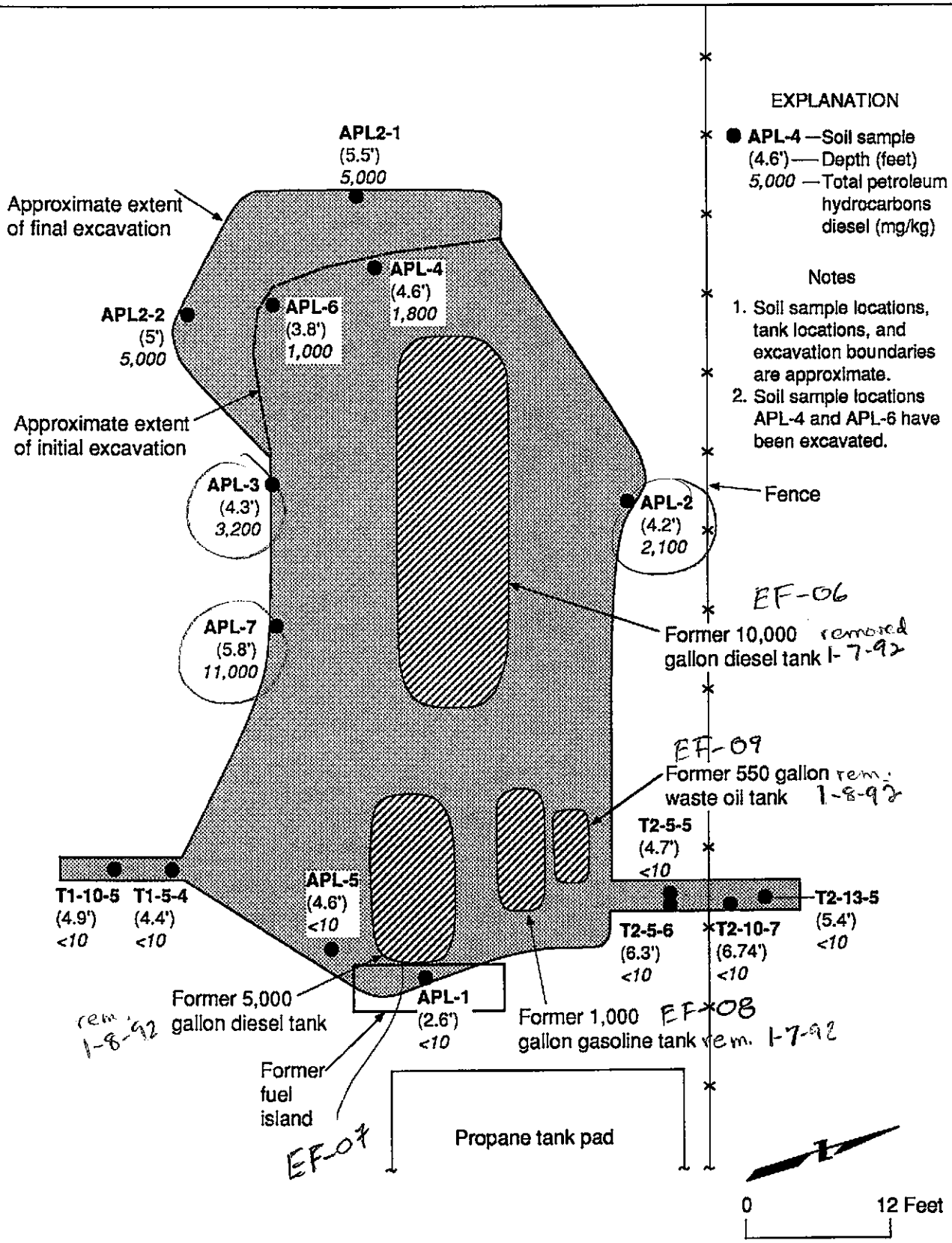
GEOMATRIX

SITE PLAN
American President Lines Terminal
1395 Middle Harbor Road
Oakland, California

Figure
2

Project No.
2026

APL Terminal Building



GEOMATRIX

EXCAVATION, TANK, AND SOIL SAMPLE LOCATIONS AND CONCENTRATIONS OF TOTAL PETROLEUM HYDROCARBONS AS DIESEL
American President Lines Terminal
1395 Middle Harbor Road
Oakland, California

Figure 3

Project No. 2026

GEOMATRIX

APPENDIX A

UNDERGROUND STORAGE TANK CLOSUSRE PLAN, UNIFORM HAZARDOUS WASTE MANIFESTS, AND SOIL AERATION PERMIT

Project Specialist (print) Damir Byrne

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621
PHONE NO. 415/271-4320

11/18/91 GA

ACCEPTED

DEPARTMENT OF ENVIRONMENTAL HEALTH
470 - 27th Street, Third Floor
Oakland CA 94612
Telephone: (415) 874-7237

These plans have been reviewed and found to be acceptable and essentially meet the requirements of State and local health laws. Changes to your plans indicated by this Department are to assure compliance with State and local laws. The project proposed herein is now cleared for issuance of any required building permits for construction.

One copy of these accepted plans must be on the job site and available to all contractors and craftsmen involved with the removal.

Approved by Tank and Piping

UNDERGROUND TANK CLOSURE PLAN
*** * * Complete according to attached instructions * * ***

1. Business Name Port of Oakland

   Business Owner Board of Port Commissioners of the City of Oakland

2. Site Address 1395 Middle Harbor Terminal (EF06, EF07, EF08, EF09)

   City Oakland, CA Zip 94607 Phone

3. Mailing Address 530 Water Street, P.O. Box 2064, Environmental Dept.

   City Oakland, CA Zip 94604-2064 Phone (510) 272-1184

4. Land Owner Port of Oakland

   Address 530 Water Street City, State Oakland, CA Zip 94604-2064

5. Generator name under which tank will be manifested

   Port of Oakland

   EPA I.D. No. under which tank will be manifested CAC000627912

rev 12/90

6. Contractor Tank Protect Engineering of Northern California

Address 2821 Whipple Road

City Union City, CA 94587-1233 Phone (510) 429-8088

License Type A ID# 575837

7. Consultant Geomatrix Consultants

Address 100 Swan Way, Suite 100

City Oakland, CA Phone (510) 957-9557

8. Contact Person for Investigation

Name Jon Amdur Title Asst. Env. Scientist

Phone (510) 272-1184

9. Number of tanks being closed under this plan 4

Length of piping being removed under this plan 50

Total number of tanks at facility 4

10. State Registered Hazardous Waste Transporters/Facilities (see instructions).

** Underground tanks are hazardous waste and must be handled ** as hazardous waste

a) Product/Residual Sludge/Rinsate Transporter

Name Excel Trans. EPA I.D. No. CAD981982663

Hauler License No. 2283 License Exp. Date 12/31/91

Address 290 West Channel Road

City Benicia State CA Zip 94510

b) Product/Residual Sludge/Rinsate Disposal Site

Name Enviro. Safe Services EPA I.D. No. IDD073114654

Address P.O. Box 417

City Boise State Idaho Zip 83701-0417

c) Tank and Piping Transporter

Name Erickson, Inc. EPA I.D. No. CAD009466392

Hauler License No. 0019 License Exp. Date 5/92

Address 255 Parr Blvd,

City Richmond State CA Zip 94801

d) Tank and Piping Disposal Site

Name Erickson, Inc. EPA I.D. No. CAD009466392

Address 255 Parr Blvd.

City Richmond State CA Zip 94801

11. Experienced Sample Collector

Name Phil Tringale

Company Geomatrix Consultants

Address 100 Swan Way, Suite 100

City Oakland State CA Zip 94111 Phone (510) 957-9557

12. Laboratory

Name GTEL Environmental Laboratories

Address 4080 Pike Lane

City Concord State CA Zip 94520

State Certification No. 1194

13. Have tanks or pipes leaked in the past? Yes [ ] No [ ]

If yes, describe. No leaks documented.

14. Describe methods to be used for rendering tank inert

Use 15 lbs. of dry ice per each 1,000 gallon capacity for each tank.

Verify with on-site LEL meter.

Before tanks are pumped out and inerted, all associated piping must be flushed out into the tanks. All accessible associated piping must then be removed. Inaccessible piping must be plugged.

The Bay Area Air Quality Management District (771-6000), along with local Fire and Building Departments, must also be contacted for tank removal permits. Fire departments typically require the use of explosion proof combustible gas meters to verify tank inertness. It is the contractor's responsibility to bring a working combustible gas meter on site to verify tank inertness.

15. Tank History and Sampling Information

Tank		Material to be sampled (tank contents, soil, groundwater, etc.)	Location and Depth of Samples
Capacity	Use History (see instructions)		
1,000 gallon	Gasoline	Soil	One sample at each end of the tank pit, max. of 2 ft. below the tank pit.
10,000 gallon	Diesel	Soil	" "
5,000 gallon	Diesel	Soil	" "
550 gallon	Waste Oil	Soil	One sample at fill or pump end of the tank.
	Piping	Soil	One sample every 20 lineal feet, or under swing joint dispenser.
	Groundwater to be sampled	if encountered.	

One soil sample must be collected for every 20 feet of piping that is removed. A ground water sample must be collected should any ground water be present in the excavation.

Excavated/Stockpiled Soil	
Stockpiled Soil Volume (Estimated)	Sampling Plan One sample for every 20 cubic yards maximum or 1 sample every 50 cubic yards minimum.

Stockpiled soil must be placed on bermed plastic and must be completely covered by plastic sheeting.

16. Chemical methods and associated detection limits to be used for analyzing samples

The Tri-Regional Board recommended minimum verification analyses and practical quantitation reporting limits should be followed. See attached Table 2.

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Method Number	Method Detection Limit
Gasoline			
TPHG	EPA 5030	GCFID	1ppm
BTEX	EPA 5030	8020/8240	.005ppm
Diesel			
TPHD	EPA 3550	GCFID	1ppm
BTEX	EPA 5030	8020/8240	.005ppm
Waste Oil			
TPHG	EPA 5030	GCFID	1ppm
TPHD	EPA 3550	GCFID	1ppm
BTEX	EPA 5030	8020/8240	.005ppm
O & G	EPA SM 5520 E & F (Gravimetric)		
CL CH	EPA 5030		
METALS	AA Cd, Cr, Ni, Zn, Pb	8010/8240	
PCB, PCP PNA creosote		8270	
If groundwater	encountered: TPHG 5030/GCFID TPHD 3510/GCFID BTEX 5030/602 or 624		

17. Submit Site Health and Safety Plan (See Instructions)

18. Submit Worker's Compensation Certificate copy

Name of Insurer STATE COMPENSATION INSURANCE FUND

19. Submit Plot Plan (See Instructions)

20. Enclose Deposit (See Instructions)

21. Report any leaks or contamination to this office within 5 days of discovery. The report shall be made on an Underground Storage Tank Unauthorized Leak/Contamination Site Report form. (see Instructions)

22. Submit a closure report to this office within 60 days of the tank removal. This report must contain all the information listed in item 22 of the instructions.

I declare that to the best of my knowledge and belief the statements and information provided above are correct and true.

I understand that information in addition to that provided above may be needed in order to obtain an approval from the Department of Environmental Health and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I understand that all work performed during this project will be done in compliance with all applicable OSHA (Occupational Safety and Health Administration) requirements concerning personnel health and safety. I understand that site and worker safety are solely the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Once I have received my stamped, accepted closure plan, I will contact the project Hazardous Materials Specialist at least three working days in advance of site work to schedule the required inspections.

Signature of Contractor

Name (please type) JAFAR FARHOOMAND

Signature Jafar Farhoomand

Date 11/12/91

Signature of Site Owner or Operator

Name (please type) DAVID McANENY PORT OF OAKLAND

Signature David J. McAneny

Date 11-13-91

rev 12/90

Excavation Permit Granted _____ No. _____

CITY OF OAKLAND

Tank Permit

Permit to Excavate and Install, Repair, or Remove Inflammable Liquid Tanks. No. 0516

Oakland, California, November 19, 19 91

PERMISSION IS HEREBY GRANTED TO ~~Install~~ remove ~~same~~ Gasoline tank and excavate commencing _____ feet back property line

on the south side of Middle Harbor Road Street Avenue feet of _____ Street Avenue

House No. 1395 Middle Harbor Road Street Avenue Present Storage _____

Owner Port of Oakland Address 530 Water Street Phone 272-1184

Applicant Tank Protect Engineering Address 2821 Whipple Rd. Union City 94587 Phone 429-8088

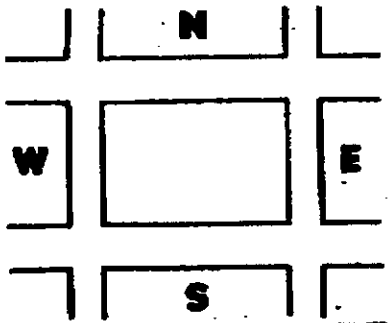
Dimensions of street (sidewalk) surface to be disturbed _____ X _____ Number of Tanks 1 Capacity 10,000 Gallons, each
1 5,000
1 1,000
1 500

Remarks: _____

This Permit is granted in accordance with existing City Ordinances.
Owner hereby agrees to remove tanks on discontinuance of use or when notified by the City Authorities.
When installing, removing or repairing tanks, no open flame to be on or near premises.

Approved _____ Fire Marshal

Approved _____ Drainage Division Engineering Dept.



EXCAVATING PERMIT

Issued in accordance with Ord. No. 278 C.M.S. Sec. 6-2.04

_____ square feet of digging or removal granted.

The receipt of $ _____ special deposit is hereby acknowledged.

GENERAL DEPOSIT.

BUREAU OF PERMITS AND LICENSES.

CERTIFICATE OF TANK AND EQUIPMENT INSPECTION

Inspected and passed on _____ 19 _____

By _____ Fire Marshal

Inspection Fee Paid . . . . . $ 200.00 ck#2269 rec# 658512

Received by V. Arnold
TANK INSPECTIONS BUREAU

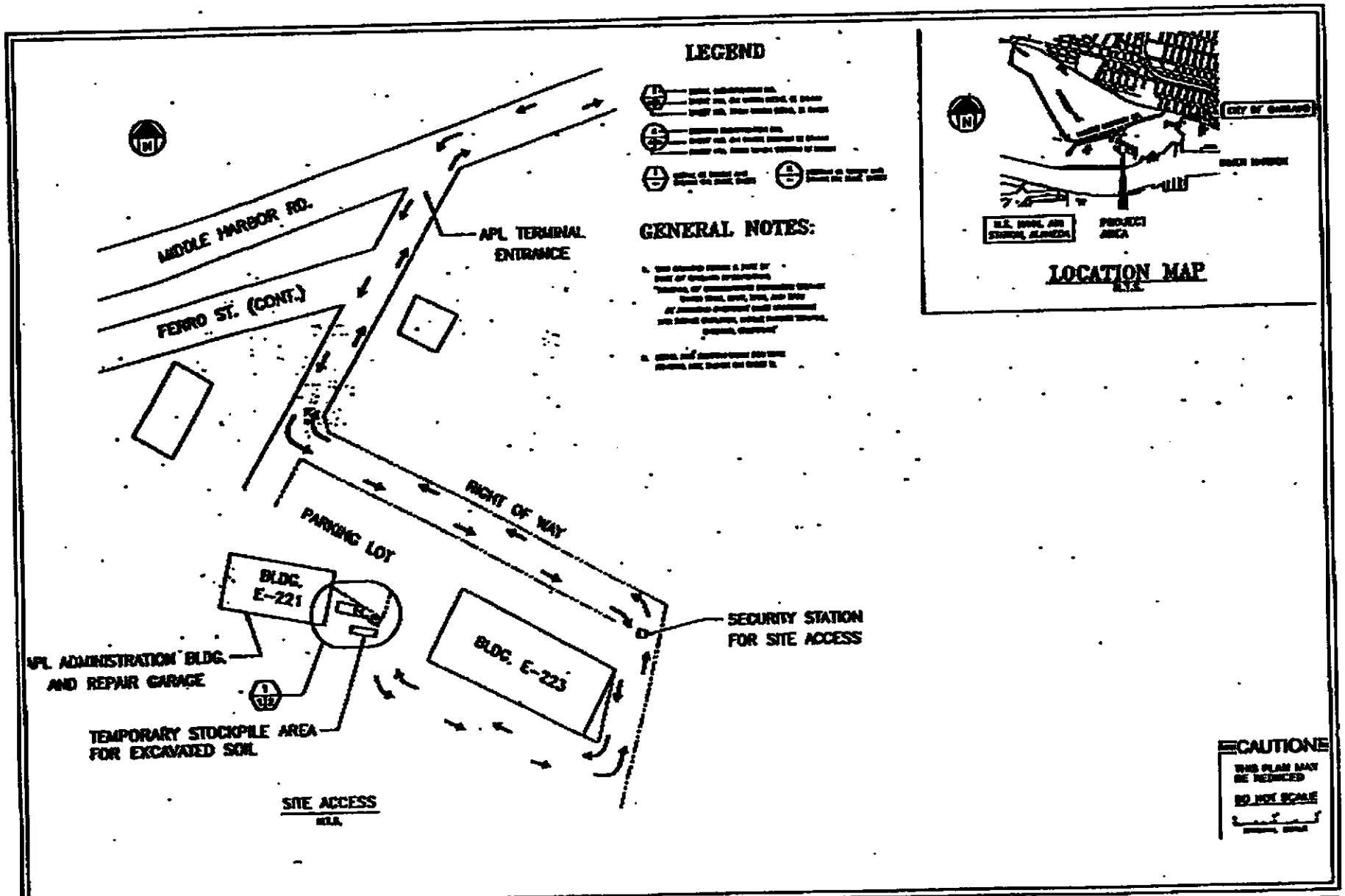
NOTICE

Before Covering Tanks, Above Certificate Must Be Signed.

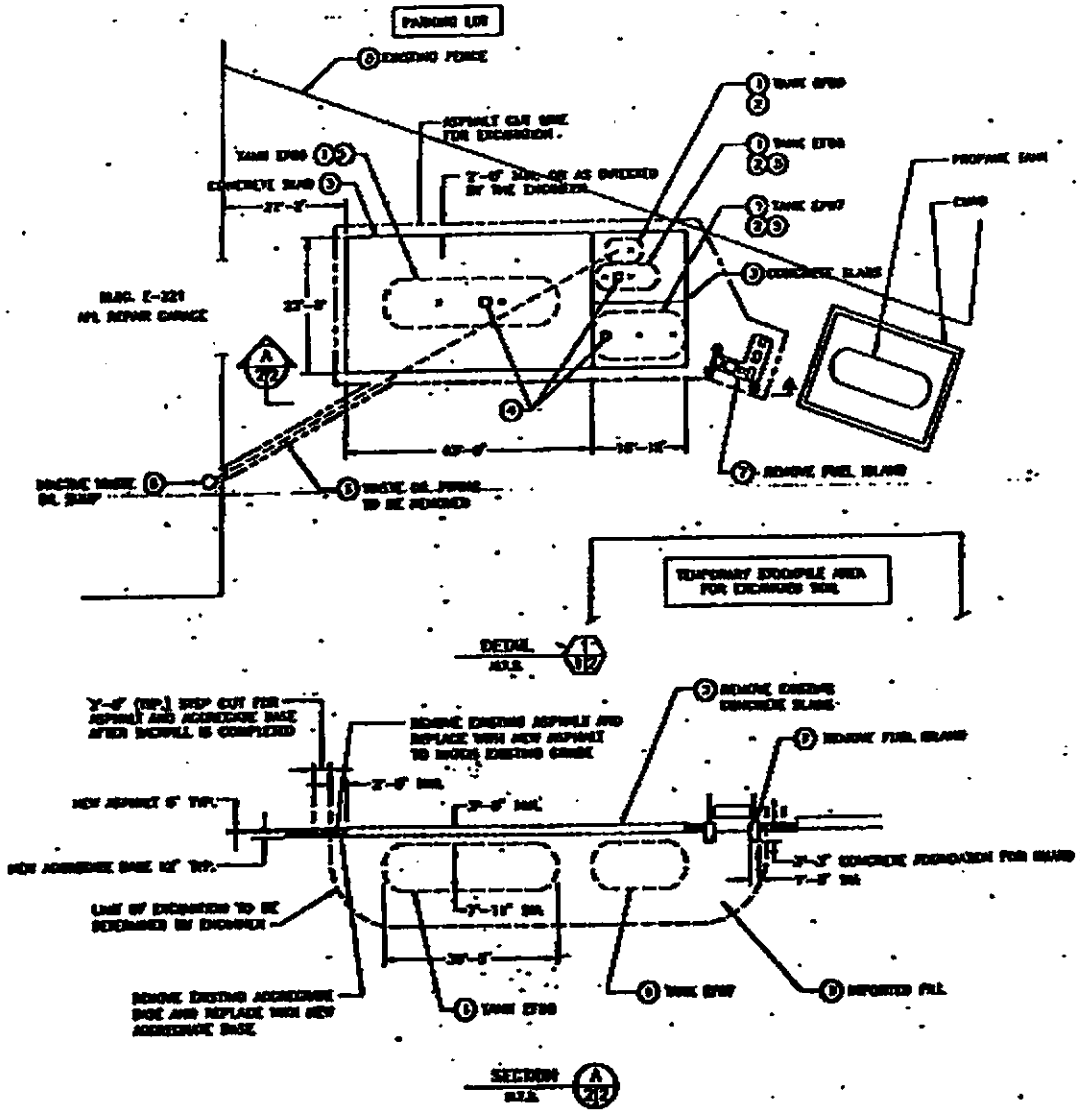
When ready for inspection notify Fire Prevention Bureau, 273-3851

THIS PERMIT MUST BE LEFT ON THE WORK AS AUTHORITY THEREFOR.

[illegible] (6-67)



TANK PROTECT ENGINEERING 2821 WHIPPLE ROAD UNION CITY, CA 94587	PLOT PLAN 1395 MIDDLE HARBOR TERMINAL OAKLAND, CA 94607	SUBMITTAL 3



NOTES:

TANK PROTECT ENGINEERING
2821 WHIPPLE ROAD
UNION CITY, CA 94587

PLOT PLAN
1395 MIDDLE HARBOR TERMINAL
OAKLAND, CA 94607

SUBMITTAL

3

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91) #77428
Please print or type. Form designed for use on elite (12-pitch typewriter).

See Instructions on Back of Page 6 and Front of Page 7.

Department of Health Services
Toxic Substances Control Division
Sacramento, California

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

GENERATOR

1. Generator's US EPA ID No.: CAC000627912967796 (Manifest Document No.)
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: PORT OF OAKLAND P.O. BOX 2064 ENVIRONMENTAL DEPT. OAKLAND CALIF 94604-2064
4. Generator's Phone: 510 272-1184

A. State Manifest Document Number: 90796796
B. State Generator's ID

5. Transporter 1 Company Name: Erickson Trucking Inc.
6. US EPA ID Number: CAD009466392
C. State Transporter's ID: 20166
D. Transporter's Phone: 510 235-1393

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
Erickson, Inc.
255 Parr Blvd.
Richmond, Ca. 94801

10. US EPA ID Number: CAD009466392
G. State Facility's ID
H. Facility's Phone: (510) 235-1393

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Empty Storage Tank NON-RCRA Hazardous Waste Solid.	001	TP	03000	P	State 512; EPA/Other NONE
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above
Qty: ONE Empty Storage Tank (s) #7907
Tank (s) have been inerted with 15 lbs. Dry Ice per 1000 Gal. Capacity.

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
Keep away from sources of ignition. Always wear hardhats when working around U.S.T.'s 24 Hr. Contact Name PORT OF OAKLAND Phone (510) 272-1184

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: David T. McAleny | Signature: [signature] | Month Day Year: 6 16 92

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Steve Fleming | Signature: Steve Fleming | Month Day Year: 6 16 92

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

DHS 8022 A
EPA 8700—22
(Rev. 6-89) Previous editions are obsolete.

Do Not Write Below This Line

YELLOW: GENERATOR RETAINS

...0039 (Expires 9-30-91)
...m designed for use on elite (12-pitch typewriter).

Toxic Substances Control Division
Sacramento, California

...RM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. / Manifest Document No.
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Port of Oakland

4. Generator's Phone

A. State Manifest Document Number 88119621
B. State Generator's ID

5. Transporter 1 Company Name: Erickson Trucking, Inc.
6. US EPA ID Number: CAD009466392
C. State Transporter's ID 205169
D. Transporter's Phone (415) 235-1393

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Erickson, Inc.
255 Parr Blvd.
Richmond, CA 94801

10. US EPA ID Number: CAD009466392
G. State Facility's ID
H. Facility's Phone (415) 235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste empty storage tank Non-RCRA Hazardous Waste Solid	002	TP	17000	P	State 512; EPA/Other None
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above
2 empty storage tank # 7709-7710 iced with 15 lbs dry ice per 1000 gal cap

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
KEEP away from sources of ignition. Always wear hardhats when working around U.S.T.'s
24 hr contact port of oakland (510) 272-1171

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Jon Bantfield | Signature | Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Robert A. Bennett | Signature | Month Day Year 12 1992

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

GENERATOR / TRANSPORTER / FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1-88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete

Do Not Write Below This Line

Blue: GENERATOR SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 400 Sacramento CA 95812-0400

...(Form designed for use on elite (12 pitch) typewriter) 11120 and Front of Page 7 ... Department California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC000627912
Manifest Document No. 96784
2. Page 1 of 1
Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address: PORT OF OAKLAND P.O. BOX 2064 Attn. ENVIRONMENTAL DEPT. OAKLAND, CALIFORNIA 94604-2064

4. Generator's Phone (510) 272-1184

A. State Manifest Document Number: 90796784

B. State Generator's ID

5. Transporter 1 Company Name: ERICKSON TRUCKING, INC.
6. US EPA ID Number: CAD009466392

C. State Transporter's ID: 205169
D. Transporter's Phone: (510) 235-1393

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
Erickson, Inc.
255 Parr Blvd.
~~Richmond, Ca. 94801~~

10. US EPA ID Number: CAD009466392

G. State Facility's ID: CAD009466392
H. Facility's Phone: (510) 235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Empty Storage Tank ~~NON-RCRA Hazardous Waste Solid.~~	001	TP	00400	P	State 512; EPA/Other NONE
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above:
Qty. One Empty Storage Tank (s) #7909, ____, ____ ____. ____. Tank (s) have been inerted with 15 lbs. Dry Ice per 1000 Gal. Capacity.

K. Handling Codes for Wastes Listed Above: a. b. c. d.

15. Special Handling Instructions and Additional Information:
Keep away from sources of ignition. Always wear hardhats when working around U.S.T.'s 24 Hr. Contact Name PORT OF OAKLAND & Phone (510) 272-1184

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: JON BUNIFIELD — Signature: [signature] — Month Day Year: 01 07 92

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Rodney G Prewett — Signature: [signature] — Month Day Year: 01 07 92

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

GENERATOR / TRANSPORTER / FACILITY

DHS 8022 A
EPA 8700-22
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nia—Health and Welfare Agency

See Instructions on back of page 6.

Department of Health Services
Toxic Substances Control Program
Sacramento, California

or type. *Form designed for use on elite (12-pitch typewriter).*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAC000627912
Manifest Document No.: 53891
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: PORT OF OAKLAND - ENVIRON. DEPT. P.O. BOX 2064 OAKLAND, CA. 94604
4. Generator's Phone (510) 272 1184

A. State Manifest Document Number: 91553891
B. State Generator's ID

5. Transporter 1 Company Name: ALVISO INDEPENDENT OIL
6. US EPA ID Number: CAD981069534 0
C. State Transporter's ID: 204776
D. Transporter's Phone: (408) 262-2715

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: ALVISO INDEPENDENT OIL 5002 ARCHER ALVISO, CALIF. 95002
10. US EPA ID Number: CAL000048571
G. State Facility's ID: CAL000048571
H. Facility's Phone: (408) 262-2715

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. WASTE OIL N.O.S COMBUSTIBLE LIQUID NA 1270	001	TT	2000	G	State 221; EPA/Other
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above
1.1 USED OIL
1.2 WATER

K. Handling Codes for Wastes Listed Above
a. 01
b.
c.
d.

15. Special Handling Instructions and Additional Information
GLOVES
** In Case of Emergency Call - 510 272 1184

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
DAVID J. McANENY	[signature]	01 10 92

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
H MOORE	H Moore	4 1 1 9

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month Day Year

GENERATOR / TRANSPORTER / FACILITY

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

DO NOT WRITE BELOW THIS LINE.

DHS 8022A (12/90)

Blue: GENERATOR SENDS THIS COPY TO DHS WITHIN 30 DAYS.

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *Form designed for use on elite (12-pitch typewriter).*

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAC002827782	Manifest Document No. 00004	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
CITY OF OAKLAND
530 WATER ST. OAKLAND, CALIF.

4. Generator's Phone 510 272-1471

A. State Manifest Document Number: 91053403

B. State Generator's ID:

5. Transporter 1 Company Name: ALVISO INDEPENDENT OIL
6. US EPA ID Number: CAD980695340
C. State Transporter's ID: 20-1774
D. Transporter's Phone: (408) 262-2715

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
ALVISO INDEPENDENT OIL
5002 ARCHER
ALVISO, CALIF. 95002
10. US EPA ID Number: CAL000048571
G. State Facility's ID: CAL000048571
H. Facility's Phone: (408) 262-2715

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE OIL N.O.S COMBUSTIBLE LIQUID NA 1270 OIL-WATER MIX	001	TT	00440	G	State 221 / EPA/Other
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
1.1 USED OIL
1.2 WATER

K. Handling Codes for Wastes Listed Above
a. 01
b.
c.
d.

15. Special Handling Instructions and Additional Information
GLOVES

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Printed/Typed Name	Signature	Month	Day	Year
JON DONIFELD				

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ERIK EVANS				

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
ERIK EVANS				

Do Not Write Below This Line

HS 8022 A
PA 8720—22
Rev. 6-89) Previous editions are obsolete.

Yellow: TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

RECEIVED

GENERATOR
TRANSPORTER
FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

Health and Welfare Agency

See Instructions on back of page 6.

Department of Health Serv
Toxic Substances Control Prog
Sacramento, Calif

ype. *Form designed for use on elite (12-pitch typewriter).*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. C A C 0 0 0 6 2 7 9 1 2

Manifest Document No. 0 0 0 0 4

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: 9150835

3. Generator's Name and Mailing Address
PORT OF OAKLAND
1395 Middle Harbor Terminal, Oakland, CA. 94607

4. Generators Phone (510) 272-1993

B. State Generator's ID

5. Transporter 1 Company Name
H & H Ship Service Company

6. US EPA ID Number C A D 0 0 4 7 7 1 1 6 8

C. State Transporter's ID: 300950

D. Transporter's Phone: (415) 543-4835

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
H & H Ship Service Company
220 China Basin Street
San Francisco, CA 94107

10. US EPA ID Number C A D 0 0 4 7 7 1 1 6 8

G. State Facility's ID: C A D 0 0 4 7 7 1 1 6 8

H. Facility's Phone: (415) 543-4835

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. OIL AND WATER NON-RCRA HAZARDOUS WASTE LIQUID	0 0 1	T T	0 3 0 0 0	G	State 134,135 EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
FUEL, OIL AND WATER

PROFILE #A1606

K. Handling Codes for Wastes Listed Above
a. 01 b.
c. d.

15. Special Handling Instructions and Additional Information
JOB #10211
24 Hr. Emergency Contact: H & H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classifie packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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GENERATOR

Printed/Typed Name: DAVID J MCANENY

Signature

Month Day Y: 0 3 10 4 9

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: ESTEBAN M. PENALVER

Signature

Month Day Y: 0 3 10 4 9

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Y

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name

Signature

Month Day Y

DO NOT WRITE BELOW THIS LINE.

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

9150835 /

DHS 8022A (12/90)
EPA 8700-22

Blue: GENERATOR SENDS THIS COPY TO DHS WITHIN 30 D
To: P.O. Box 400, Sacramento, CA 95812-0400

...th and Welfare Agency

See Instructions on back of page 6.

Department of Health Services
Toxic Substances Control Program
Sacramento, California

Form designed for use on elite (12-pitch typewriter).

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAC000627912
Manifest Document No.: 00003
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: 91508356

3. Generator's Name and Mailing Address:
PORT OF OAKLAND
1395 Middle Harbor Terminal, Oakland, CA. 94607

B. State Generator's ID

4. Generator's Phone (510) 272-1993

5. Transporter 1 Company Name: H & H Ship Service Company
6. US EPA ID Number: CAD004771168
C. State Transporter's ID: 300949
D. Transporter's Phone: (415) 543-4835

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
H & H Ship Service Company
220 China Basin Street
San Francisco, CA 94107

10. US EPA ID Number: CAD004771168
G. State Facility's ID: CAD004771168
H. Facility's Phone: (415) 543-4835

GENERATOR

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. OIL AND WATER NON-RCRA HAZARDOUS WASTE LIQUID	001	TT	04000	G	State 134,135 EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above:
FUEL, OIL AND WATER
PROFILE #A1606

K. Handling Codes for Wastes Listed Above: a. 01 b. c. d.

15. Special Handling Instructions and Additional Information:
JOB #10211
24 Hr. Emergency Contact: H & H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR.

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Printed/Typed Name	Signature	Month	Day	Year
DAVID McAWENY	[signature]	03	04	92

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ROBERT S. HANSEN	[signature]	03	04	92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

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Printed/Typed Name	Signature	Month	Day	Year

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EPA 8700-22

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...nd Welfare Agency

See Instructions on back of page 6.

Department of Health Services
Toxic Substances Control Program
Sacramento, California

Form designed for use on elite (12-pitch typewriter).

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. C|A|C|1|0|0|3|1|2|7|9|1|2 — Manifest Document No. 0|9|6|7|8|1|4 — 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
PORT OF OAKLAND PO BOX 2064 ATTN ENVIRONMENTAL DEPT OAKLAND CALIF, 94604 2064

4. Generator's Phone (510) 272 1184

A. State Manifest Document Number: 91553862

B. State Generator's ID:

5. Transporter 1 Company Name: ALVISO INDEPENDENT OIL

6. US EPA ID Number: C|A|D|9|8|0|6|9|5|3|4|0

C. State Transporter's ID: 204776

D. Transporter's Phone: (408) 262-2715

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address
ALVISO INDEPENDENT OIL
5002 ARCHER
ALVISO, CALIF. 95002

10. US EPA ID Number: C|A|L|0|0|0|0|4|8|5|7|1

G. State Facility's ID: C|A|L|0|0|0|0|4|8|5|7|1

H. Facility's Phone: (408) 262-2715

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. WASTE OIL N.O.S COMBUSTIBLE LIQUID NA 1270	001	TT	20000	G	State 221 / EPA/Other
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
1.1 USED OIL
1.2 WATER

K. Handling Codes for Wastes Listed Above
a. 01 b.
c. d.

15. Special Handling Instructions and Additional Information
GLOVES
** In Case of Emergency Call -

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GENERATOR

Printed/Typed Name: JON BONIFIELD — Signature — Month Day Year: 01 1 92

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: H MOORE — Signature — Month Day Year: 01 10 92

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

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Printed/Typed Name — Signature — Month Day Year

DO NOT WRITE BELOW THIS LINE.

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DHS 8022A (12/90)
EPA 8700-22

Blue: GENERATOR SENDS THIS COPY TO DHS WITHIN 30 DAYS.
To: P.O. Box 400, Sacramento, CA 95812-0400

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

February 10, 1992

Peylina Chu *and* Sally Goodin
Geomatrix
100 Pine Street - 10th Floor
San Francisco, CA 94111

Greetings:

This letter is in response to your letter dated January 29, 1992 for your Project 2026 at the Port of Oakland. We have evaluated the information you have submitted and have determined that this project is exempt from District permit requirements subject to compliance with the following conditions:

1. **No more than 300 cubic yards of soil shall be aerated.**

2. **The aeration operation shall not last more than 60 days.**

3. **The aeration operation shall not cause a public nuisance. If a public nuisance is caused, the soil being aerated shall be covered with a tarp or other covering and a Permit to Operate shall be applied for from the District.**

This exemption applies solely to permits. The equipment must be operated in compliance with any other applicable District regulations, primarily Regulation 8, Rule 40. Note that this exemption is not permanent. Any change in your operation or in District regulations may require you to obtain permits in the future.

Please retain this letter as a record of your exempt status. If you have any questions, please call me at **(415) 749-4735.**

Very truly yours,

John Swanson
Director of Permit Services

JAS:all

GEOMATRIX

APPENDIX B

CHAIN-OF-CUSTODY RECORDS AND ANALYTICAL LABORATORY REPORTS

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-227

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0609.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240[a]

GTEL Sample Number		01	02*		
Client Identification		WDA-1	WWO-1		
Date Sampled		01/10/92	01/10/92		
Date Analyzed		01/10/92	01/10/92		
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Chloromethane	10	<10	<50		
Bromomethane	10	<10	<50		
Vinyl chloride	10	300	130		
Chloroethane	10	<10	<50		
Methylene chloride	5	18	3900		
Acetone	100	<100	1300		
Carbon disulfide	5	<5	<25		
1,1-Dichloroethene	5	<5	<25		
1,1-Dichloroethane	5	<5	84		
1,2-Dichloroethene, total	5	79	160		
Chloroform	5	<5	<25		
1,2-Dichloroethane	5	<5	<25		
2-Butanone	100	<100	<500		
1,1,1-Trichloroethane	5	<5	90		
Carbon tetrachloride	5	<5	<25		
Vinyl acetate	50	<50	<250		
Bromodichloromethane	5	<5	<25		
1,2-Dichloropropane	5	<5	<25		
cis-1,3-Dichloropropene	5	<5	<25		
Trichloroethene	5	15	2100		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Sample introduction by EPA Method 5030.
* Sample diluted due to matrix interference.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240[a]

GTEL Sample Number		01	02*		
Client Identification		WDA-1	WWO-1		
Date Sampled		01/10/92	01/10/92		
Date Analyzed		01/10/92	01/10/92		
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Dibromochloromethane	5	<5	<25		
1,1,2-Trichloroethane	5	<5	<25		
Benzene	5	41	1400		
trans-1,3-Dichloropropene	5	<5	<25		
2-Chloroethylvinyl ether	10	<10	<50		
Bromoform	5	<5	<25		
4-Methyl-2-pentanone	50	<50	<250		
2-Hexanone	50	<50	<250		
Tetrachloroethene	5	6.2	940		
1,1,2,2-Tetrachloroethane	5	<5	<25		
Toluene	5	71	2300		
Chlorobenzene	5	<5	<25		
Ethylbenzene	5	32	320		
Styrene	5	<5	<25		
1,2-Dichlorobenzene	5	<5	<25		
1,3-Dichlorobenzene	5	<5	<25		
1,4-Dichlorobenzene	5	<5	<25		
Xylene, total	5	180	1600		
Trichlorofluoromethane	5	<5	50		
Quantitation Limit Multiplier		1	5		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Sample introduction by EPA Method 5030.
* Sample diluted due to matrix interference.

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Chain-of-Custody Record

№ 0609

Date: 1-10-92

Page | of

Project No.: 2026

Samplers (Signatures): Stacy Anich

ANALYSES

Date	Time	Sample Number	EPA Method 6010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/10	1115	WDA-1			X					X	W	Y	3
1/10	1100	WWO-1			X					X	W	Y	3

REMARKS

Additional comments

Rush 48-hr TAT

Please hold samples after analysis

Please return coolers to Geomatrix

Turnaround time: 48-hour

Results to: Elizabeth Wells

Total No. of containers: 6

	Date:		Date:		Date:	
Relinquished by: Stacy Anich	1-10	Relinquished by: Susan House	1/10	Relinquished by:		Method of shipment: Courier
Signature: STACY ANICH	10,92	Signature: Susan House		Signature:		Laboratory comments and Log No.:
Printed name: Geomatrix		Printed name: Susan	1:00	Printed name:		
Company:		Company: Concord Courier		Company:		
Received by: Susan	Time:	Received by: Jamie Davis	Time:	Received by:	Time:	
Signature: Susan House	1230	Signature: Jamie DAVIS		Signature:		
Printed name: Susan House		Printed name: 1-10-92 1:05		Printed name:		
Company: Concord Courier		Company:		Company:		

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA. 94111
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GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-306

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0628.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Halogenated Volatile Organics in Soil

EPA Method 8010[a]

GTEL Sample Number		01	02		
Client Identification		T1-5-4	T2-5-6		
Date Sampled		01/14/92	01/14/92		
Date Extracted		01/15/92	01/15/92		
Date Analyzed		01/16/92	01/16/92		
Analyte	Quantitation Limit, mg/Kg	Concentration[b], mg/Kg			
Chloromethane	0.5	<0.5	<0.5		
Bromomethane	0.5	<0.5	<0.5		
Vinyl chloride	1	<1	<1		
Chloroethane	0.5	<0.5	<0.5		
Methylene chloride	0.5	<0.5	<0.5		
1,1-Dichloroethene	0.2	<0.2	<0.2		
1,1-Dichloroethane	0.5	<0.5	<0.5		
1,2-Dichloroethene	0.5	<0.5	<0.5		
Chloroform	0.5	<0.5	<0.5		
1,2-Dichloroethane	0.5	<0.5	<0.5		
1,1,1-Trichloroethane	0.5	<0.5	<0.5		
Carbon tetrachloride	0.5	<0.5	<0.5		
Bromodichloromethane	0.5	<0.5	<0.5		
1,2-Dichloropropane	0.5	<0.5	<0.5		
cis-1,3-Dichloropropene	0.5	<0.5	<0.5		
Trichloroethene	0.5	<0.5	<0.5		
Dichlorodifluoromethane	0.5	<0.5	<0.5		
Dibromochloromethane	0.5	<0.5	<0.5		
1,1,2-Trichloroethane	0.5	<0.5	<0.5		
trans-1,3-Dichloropropene	0.5	<0.5	<0.5		
2-Chloroethylvinyl ether	1	<1	<1		
Bromoform	0.5	<0.5	<0.5		
Tetrachloroethene	0.5	<0.5	<0.5		
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5		
Chlorobenzene	0.5	<0.5	<0.5		
1,2-Dichlorobenzene	0.5	<0.5	<0.5		
1,3-Dichlorobenzene	0.5	<0.5	<0.5		
1,4-Dichlorobenzene	0.5	<0.5	<0.5		
Trichlorofluoromethane	0.5	<0.5	<0.5		
Quantitation Limit Multiplier		1	1		
Percent solids		74	83		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample prepared by EPA Method 5030 (high-level solvent extraction and purge and trap).
b. Results reported on a wet weight basis.

GTEL ENVIRONMENTAL LABORATORIES, INC.

K-2 MMCOT. OPK01 C201306

Chain-of-Custody Record

№ 0628

Date: 1-14-92 Page of

Project No.: 2026

Samplers (Signatures): Stacy Anich

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	OIL + GREASE	TOTAL PET. [illegible]		Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/14	1030	T1-5-4	X	01			X	X	X	X	X		X	S		1
	1110	T1-10-5					X	X	X	X	X		X	S		1
	1345	T2-5-6		02			X	X	X	X	X		X	S		1
	1310	T2-5-5					X	X	X	X	X		X	S		1
	1445	T2-10-7					X	X	X	X	X		X	S		1
↓	1510	T2-13-5					X	X	X	X	X		X			1

REMARKS — Additional comments:

RUSH 48HR TAT

Please hold samples after analysis

Please return [illegible]

Turnaround time: 48-HOURS

Results to: [illegible]

Total No. of containers: 6

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:	Method of shipment: [illegible]
Stacy Anich	1/14 1992					
Signature: STACY ANICH		Signature:		Signature:		Laboratory comments and Log No.:
Printed name: [illegible]		Printed name:		Printed name:		
Company:		Company:		Company:		

Received by:	Time:	Received by:	Time:	Received by:	Time:
Signature: James Percival		Signature:		Lisa Gorski	8:15 1/15
Printed name: JAMES PERCIVAL		Printed name:		Printed name:	
Company: Concord Courier		Company:		Company:	

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(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-307

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/14/92, under chain of custody record 0628.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-307

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Soil

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	04
Client Identification		T1-5-4	T1-10-5	T2-5-6	T2-5-5
Date Sampled		01/14/92	01/14/92	01/14/92	01/14/92
Date Extracted		01/15/92	01/15/92	01/15/92	01/15/92
Date Analyzed		01/16/92	01/16/92	01/16/92	01/16/92
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Benzene	0.005	<0.005	<0.005	0.15	<0.005
Toluene	0.005	<0.005	<0.005	1.2	<0.005
Ethylbenzene	0.005	<0.005	<0.005	0.45	<0.005
Xylene, total	0.015	<0.015	<0.015	2.5	<0.015
BTEX, total	--	--	--	4	--
Gasoline	1	<1	<1	35	<1
Detection Limit Multiplier		1	1	1	1
Percent solids		74	69	83	73

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-307

Table 1 (Continued)

ANALYTICAL RESULTS

Aromatic Volatile Organics and
Total Petroleum Hydrocarbons as Gasoline in Soil

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		05	06		
Client Identification		T2-10-7	T2-13-15		
Date Sampled		01/14/92	01/14/92		
Date Extracted		01/15/92	01/15/92		
Date Analyzed		01/16/92	01/16/92		
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Benzene	0.005	<0.005	0.006		
Toluene	0.005	<0.005	0.008		
Ethylbenzene	0.005	<0.005	<0.005		
Xylene, total	0.015	0.02	<0.015		
BTEX, total	--	0.02	0.014		
Gasoline	1	5	<1		
Detection Limit Multiplier		1	1		
Percent solids		70	82		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-308

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0628.

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Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-308

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Diesel Fuel in Soil

Modified EPA Methods 3550/8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Results reported on a wet weight basis.

GTEL Sample Number		01	02	03	04
Client Identification		T1-5-4	T1-10-5	T2-5-6	T2-5-5
Date Sampled		01/14/92	01/14/92	01/14/92	01/14/92
Date Extracted		01/15/92	01/15/92	01/15/92	01/15/92
Date Analyzed		01/15/92	01/15/92	01/15/92	01/15/92
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Diesel	10	<10	<10	<10	<10
Quantitation Limit Multiplier		1	1	1	1
Percent solids		74	69	83	73

GTEL Sample Number		05	06		
Client Identification		T2-10-7	T2-13-15		
Date Sampled		01/14/92	01/14/92		
Date Extracted		01/15/92	01/15/92		
Date Analyzed		01/15/92	01/15/92		
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Diesel	10	<10	<10		
Quantitation Limit Multiplier		1	1		
Percent solids		70	82		

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Project ID: Not Given
Work Order Number: C2-01-309

January 17, 1992

Elizabeth Wells
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Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P Popek

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-309

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil by Infrared Spectrometry[1]

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)[2]

GTEL Sample Number		01	02	03	04
Client Identification		T1-5-4	T1-10-5	T2-5-6	T2-5-5
Date Sampled		01/14/92	01/14/92	01/14/92	01/14/92
Date Prepared		01/15/92	01/15/92	01/15/92	01/15/92
Date Analyzed		01/15/92	01/15/92	01/15/92	01/15/92
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	10	56	180	33
Quantitation Limit Multiplier		1	1	1	1
Percent solids		74	69	83	73

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-309

Table 1 (Continued)

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil by Infrared Spectrometry[1]

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)[2]

GTEL Sample Number		05	06		
Client Identification		T2-10-7	T2-13-15		
Date Sampled		01/14/92	01/14/92		
Date Prepared		01/15/92	01/15/92		
Date Analyzed		01/15/92	01/15/92		
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	<5	40		
Quantitation Limit Multiplier		1	1		
Percent solids		70	82		

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-310

January 17, 1992

Elizabeth Wells
Geomatrix Corporation
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-310

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	01	02	03	04
				Sample Identification	T1-5-4	T1-10-5	T2-5-6	T2-5-5
				Date Sampled	01/14/92	01/14/92	01/14/92	01/14/92
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result			
Cadmium	mg/Kg	1	EPA 6010	01/16/92	<1	<1	<1	<1
Chromium	mg/Kg	1	EPA 6010	01/16/92	47	42	19	47
Lead, total	mg/Kg	5	EPA 6010	01/16/92	25	10	<5	52
Nickel	mg/Kg	2.5	EPA 6010	01/16/92	40	31	17	42
Zinc	mg/Kg	2.5	EPA 6010	01/16/92	61	66	49	81
Percent solids					74	69	83	73

GTEL ENVIRONMENTAL LABORATORIES, INC.

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-310

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	05	06		
				Sample Identification	T2-10-7	T2-13-5		
				Date Sampled	01/14/92	01/14/92		
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result			
Cadmium	mg/Kg	1	EPA 6010	01/16/92	<1	<1		
Chromium	mg/Kg	1	EPA 6010	01/16/92	26	40		
Lead, total	mg/Kg	5	EPA 6010	01/16/92	<5	76		
Nickel	mg/Kg	2.5	EPA 6010	01/16/92	14	42		
Zinc	mg/Kg	2.5	EPA 6010	01/16/92	14	83		
Percent solids					70	82		

GTEL ENVIRONMENTAL LABORATORIES, INC.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-311

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01*	02	03*	
Client Identification		APL-2	APL-5	APL-6	
Date Sampled		01/15/92	01/15/92	01/15/92	
Date Extracted		01/15/92	01/15/92	01/15/92	
Date Analyzed		01/15/92	01/15/92	01/15/92	
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<520	<11	<590	
Bromomethane	10	<520	<11	<590	
Vinyl chloride	10	<520	<11	<590	
Chloroethane	10	<520	<11	<590	
Methylene chloride	5	<260	<5	<300	
Acetone	100	<5200	<110	<5900	
Carbon disulfide	5	<260	<5	<300	
1,1-Dichloroethene	5	<260	<5	<300	
1,1-Dichloroethane	5	<260	<5	<300	
1,2-Dichloroethene, total	5	1100	<5	<300	
Chloroform	5	<260	<5	<300	
1,2-Dichloroethane	5	<260	<5	<300	
2-Butanone	100	<5200	<110	<5900	
1,1,1-Trichloroethane	5	<260	<5	<300	
Carbon tetrachloride	5	<260	<5	<300	
Vinyl acetate	50	<2600	<53	<3000	
Bromodichloromethane	5	<260	<5	<300	
1,2-Dichloropropane	5	<260	<5	<300	
cis-1,3-Dichloropropene	5	<260	<5	<300	
Trichloroethene	5	<260	<5	<300	
Dibromochloromethane	5	<260	<5	<300	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.
* Samples diluted due to non target matrix interference.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01*	02	03*	
Client Identification		APL-2	APL-5	APL-6	
Date Sampled		01/15/92	01/15/92	01/15/92	
Date Extracted		01/15/92	01/15/92	01/15/92	
Date Analyzed		01/15/92	01/15/92	01/15/92	
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<260	<5	<300	
Benzene	5	470	<5	<300	
trans-1,3-Dichloropropene	5	<260	<5	<300	
2-Chloroethylvinyl ether	10	<520	<11	<590	
Bromoform	5	<260	<5	<300	
4-Methyl-2-pentanone	50	<2600	<53	<3000	
2-Hexanone	50	<2600	<53	<3000	
Tetrachloroethene	5	<200	<5	<300	
1,1,2,2-Tetrachloroethane	5	<260	<5	<300	
Toluene	5	11000	<5	760	
Chlorobenzene	5	<260	<5	<300	
Ethylbenzene	5	9800	<5	870	
Styrene	5	<260	<5	<300	
1,2-Dichlorobenzene	5	<260	<5	<300	
1,3-Dichlorobenzene	5	<260	<5	<300	
1,4-Dichlorobenzene	5	<260	<5	<300	
Xylene, total	5	39000	<5	4300	
Trichlorofluoromethane	5	<260	<5	<300	
Quantitation Limit Multiplier		52	1.05	59	
Percent solids		96	95	85	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.
* Samples diluted due to non target matrix interference.

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(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-312

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-312

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Gasoline in Soil

Modified EPA Method 8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

GTEL Sample Number		01	02	03	04
Client Identification		APL-1	APL-2	APL-3	APL-4
Date Sampled		01/15/92	01/15/92	01/15/92	01/15/92
Date Extracted		01/16/92	01/16/92	01/17/92	01/16/92
Date Analyzed		01/16/92	01/16/92	01/17/92	01/16/92
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	<1	500	290	170
Detection Limit Multiplier		1	1	1	1
Percent solids		90	97	95	93

GTEL Sample Number		05	06	07	
Client Identification		APL-5	APL-6	APL-7	
Date Sampled		01/15/92	01/15/92	01/15/92	
Date Extracted		01/16/92	01/16/92	01/16/92	
Date Analyzed		01/16/92	01/16/92	01/16/92	
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	<1	140	210	
Detection Limit Multiplier		1	1	1	
Percent solids		78	95	86	

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(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-313

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-313

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Diesel Fuel in Soil

Modified EPA Methods 3550/8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Results reported on a wet weight basis.

GTEL Sample Number		01	02	03	04
Client Identification		APL-1	APL-2	APL-3	APL-4
Date Sampled		01/15/92	01/15/92	01/15/92	01/15/92
Date Extracted		01/16/92	01/16/92	01/16/92	01/16/92
Date Analyzed		01/16/92	01/16/92	01/16/92	01/16/92
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Diesel	10	<10	2100	3200	1800
Quantitation Limit Multiplier		1	1	1	1
Percent solids		90	97	95	93

GTEL Sample Number		05	06	07	
Client Identification		APL-5	APL-6	APL-7	
Date Sampled		01/15/92	01/15/92	01/15/92	
Date Extracted		01/16/92	01/16/92	01/16/92	
Date Analyzed		01/16/92	01/16/92	01/16/92	
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Diesel	10	<10	1000	11000	
Quantitation Limit Multiplier		1	1	1	
Percent solids		78	95	86	

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(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-314

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

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Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-314

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics in Soil

EPA Methods 5030 and 8020[a]

GTEL Sample Number		01	02	03	04
Client Identification		APL-1	APL-3	APL-4	APL-7
Date Sampled		01/15/92	01/15/92	01/15/92	01/15/92
Date Extracted		01/16/92	01/16/92	01/16/92	01/16/92
Date Analyzed		01/16/92	01/16/92	01/16/92	01/17/92
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Benzene	0.005	<0.005	0.59	0.13	0.17
Toluene	0.005	0.005	2	0.65	1.62
Ethylbenzene	0.005	<0.005	2.3	1.5	4.7
Xylene, total	0.015	<0.015	15	8	20.4
BTEX, total	--	0.005	20	10	27
Quantitation Limit Multiplier		1	1	1	1
Percent solids		90	95	93	86

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Results reported on a wet weight basis.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-315

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-315

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil by Infrared Spectrometry[1]

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)[2]

GTEL Sample Number		01	02		
Client Identification		APL-5	APL-6		
Date Sampled		01/15/92	01/15/92		
Date Prepared		01/15/92	01/15/92		
Date Analyzed		01/16/92	01/16/92		
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	11	1200		
Quantitation Limit Multiplier		1	1		
Percent solids		95	85		

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-316

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

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Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-316

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	01	02		
				Sample Identification	APL-5	APL-6		
				Date Sampled	01/15/92	01/15/92		
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result			
Cadmium	mg/Kg	1	EPA 6010	01/16/92	<1	<1		
Chromium	mg/Kg	1	EPA 6010	01/16/92	48	9		
Lead, total	mg/Kg	5	EPA 6010	01/16/92	49	<5		
Nickel	mg/Kg	2.5	EPA 6010	01/16/92	51	12		
Zinc	mg/Kg	2.5	EPA 6010	01/16/92	81	22		

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-212

January 15, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0607.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01	02	03	
Client Identification		SW01-4	SDA1-4	SDA5-8	
Date Sampled		01/09/92	01/09/92	01/09/92	
Date Extracted		01/13/92	01/13/92	01/13/92	
Date Analyzed		01/11/92	01/11/92	01/11/92	
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<10	<10	<56	
Bromomethane	10	<10	<10	<56	
Vinyl chloride	10	<10	<10	<56	
Chloroethane	10	<10	<10	<56	
Methylene chloride	5	100	<6	75	
Acetone	100	172	<100	<560	
Carbon disulfide	5	<6	<6	<28	
1,1-Dichloroethene	5	<6	<6	<28	
1,1-Dichloroethane	5	22	<6	<28	
1,2-Dichloroethene, total	5	58	21	35	
Chloroform	5	<6	<6	<28	
1,2-Dichloroethane	5	<6	<6	<28	
2-Butanone	100	<100	<100	<560	
1,1,1-Trichloroethane	5	65	<6	100	
Carbon tetrachloride	5	<6	<6	<28	
Vinyl acetate	50	<60	<60	<280	
Bromodichloromethane	5	<6	<6	<28	
1,2-Dichloropropane	5	<6	<6	<28	
cis-1,3-Dichloropropene	5	<6	<6	<28	
Trichloroethene	5	11000	1300	6700	
Dibromochloromethane	5	<6	<6	<28	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01	02	03	
Client Identification		SW01-4	SDA1-4	SDA5-8	
Date Sampled		01/09/92	01/09/92	01/09/92	
Date Extracted		01/13/92	01/13/92	01/13/92	
Date Analyzed		01/11/92	01/11/92	01/11/92	
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<6	<6	<28	
Benzene	5	1600	70	750	
trans-1,3-Dichloropropene	5	<6	<6	<28	
2-Chloroethylvinyl ether	10	<10	<10	<56	
Bromoform	5	<6	<6	<28	
4-Methyl-2-pentanone	50	<60	<60	<280	
2-Hexanone	50	<60	<60	<280	
Tetrachloroethene	5	5900	110	7100	
1,1,2,2-Tetrachloroethane	5	<6	<6	<28	
Toluene	5	11000	890	8000	
Chlorobenzene	5	<6	<6	<28	
Ethylbenzene	5	4200	510	830	
Styrene	5	<6	<6	<28	
1,2-Dichlorobenzene	5	<6	<6	<28	
1,3-Dichlorobenzene	5	<6	<6	<28	
1,4-Dichlorobenzene	5	<6	<6	<28	
Xylene, total	5	25000	4500	32000	
Trichlorofluoromethane	5	61	<6	<28	
Quantitation Limit Multiplier		1.26	1.11	5.55	
Percent solids		79	90	91	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

C201218

Chain-of-Custody Record

№ 0607

Date: 1-9-92

Page 1 of 1

Project No.: 2026

Samplers (Signatures): Stacy Anich

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	TOTAL Cd, Cr, Pb, Zn, Ni	TDS	TITLE 26 METALS	FISH BIO-ASSAY	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/9	1030	SWO-1 → SWO-4 01			X		X	X	X (crossed out)		X			X	S		4
	1300	SDA-1 → SDA-4 02			X	X	X	X				X		X	S		4
	1330	SDA-5 → SDA-8 03			X	X	X	X				X		X	S		4
↓	16:00	SDA-FB											X	X	S		1

REMARKS — Additional comments: Homogenize samples prior to analysis. Please hold samples after analysis for possible additional analysis.

D-2

Turnaround time: 5-DAY TAT

Results to: ELIZABETH WELLS

Total No. of containers: 13

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:	Method of shipment:
Signature: Stacy Anich	1/9/92	Signature:		Signature:		PICK-UP
Printed name: STACY ANICH		Printed name:		Printed name:		Laboratory comments and Log No.:
Company: Geomatrix		Company:		Company:		

Received by:	Time:	Received by:	Time:	Received by:	Time:
Signature: James Percival		Signature: Jamie Davis		Signature:	
Printed name: JAMES PERCIVAL		Printed name: J. DAVIS		Printed name:	
Company: CONCORD COURIER		Company: GTEL 1-10-92 8:55		Company:	

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA. 94111
(415) 434-9400

Table 1

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil
EPA Method 8270[a]

GTEL Sample Number		01	02		
Client Identification		SDA1-4	SDA5-8		
Date Sampled		01/09/92	01/09/92		
Date Extracted		01/13/92	01/13/92		
Date Analyzed		01/14/92	01/14/92		
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Phenol	300	<300	<300		
bis(2-Chloroethyl)ether	300	<300	<300		
2-Chlorophenol	300	<300	<300		
1,3-Dichlorobenzene	300	<300	<300		
1,4-Dichlorobenzene	300	<300	<300		
Benzyl alcohol	300	<300	<300		
1,2-Dichlorobenzene	300	<300	<300		
2-Methylphenol	300	<300	<300		
bis-(2-Chloroisopropyl)ether	300	<300	<300		
4-Methylphenol	300	<300	<300		
N-Nitroso-di-propylamine	300	<300	<300		
Hexachloroethane	300	<300	<300		
Nitrobenzene	300	<300	<300		
Isophorone	300	<300	<300		
2-Nitrophenol	300	<300	<300		
2,4-Dimethylphenol	300	<300	<300		
Benzoic acid	1500	<1500	<1500		
bis(2-Chloroethoxy)methane	300	<300	<300		
2,4-Dichlorophenol	300	<300	<300		
1,2,4-Trichlorobenzene	300	<300	<300		
Naphthalene	300	1800	2900		
4-Chloroaniline	300	<300	<300		
Hexachlorobutadiene	300	<300	<300		
4-Chloro-3-methylphenol	300	<300	<300		
2-Methylnaphthalene	300	5400	4100		
Hexachlorocyclopentadiene	300	<300	<300		
2,4,6-Trichlorophenol	300	<300	<300		
2,4,5-Trichlorophenol	1500	<1500	<1500		
2-Chloronaphthalene	300	<300	<300		
2-Nitroaniline	1500	<1500	<1500		
Dimethylphthalate	300	<300	<300		
Acenaphthylene	300	<300	<300		
3-Nitroaniline	1500	<1500	<1500		
Acenaphthene	300	<300	<300		
2,4-Dinitrophenol	1500	<1500	<1500		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample extraction by EPA Method 3550. Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil
EPA Method 8270[a]

GTEL Sample Number		01	02		
Client Identification		SDA1-4	SDA5-8		
Date Sampled		01/09/92	01/09/92		
Date Extracted		01/13/92	01/13/92		
Date Analyzed		01/14/92	01/14/92		
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
4-Nitrophenol	1500	<1500	<1500		
Dibenzofuran	300	430	<300		
2,4-Dinitrotoluene	300	<300	<300		
2,6-Dinitrotoluene	300	<300	<300		
Diethylphthalate	300	<300	<300		
4-Chlorophenyl-phenylether	300	<300	<300		
Fluorene	300	640	<300		
4-Nitroaniline	1500	<1500	<1500		
4,6-Dinitro-2-methylphenol	1500	<1500	<1500		
N-Nitrosodiphenylamine	300	<300	<300		
4-Bromophenyl-phenylether	300	<300	<300		
Hexachlorobenzene	300	<300	<300		
Pentachlorophenol	1500	<1500	<1500		
Phenanthrene	300	1800	1200		
Anthracene	300	<300	<300		
Di-n-butylphthalate	300	<300	<300		
Fluoranthene	300	700	340		
Pyrene	300	1300	990		
Butylbenzylphthalate	300	<300	<300		
3,3'-Dichlorobenzidine	600	<600	<600		
Benzo(a)anthracene	300	<300	<300		
bis(2-Ethylhexyl)phthalate	300	650	990		
Chrysene	300	<300	<300		
Di-n-octylphthalate	300	<300	<300		
Benzo(b)fluoranthene	300	<300	<300		
Benzo(k)fluoranthene	300	<300	<300		
Benzidine	600	<600	<600		
Benzo(a)pyrene	300	<300	<300		
Indeno(1,2,3-cd)pyrene	300	830	<300		
Dibenz(a,h)anthracene	300	<300	<300		
Benzo(g,h,i)perylene	300	890	660		
Quantitation Limit Multiplier		1	1		
Percent solids		90	91		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample extraction by EPA Method 3550. Results reported on a dry weight basis.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-214

January 18, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0607.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek/RC
Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-214

Table 1

ANALYTICAL RESULTS

TPH as Gasoline and Diesel in Soil

Method: GC-FID[a]

a. Results reported on a wet weight basis.

GTEL Sample Number		01	02	03	
Client Identification		SW01-4	SDA1-4	SDA5-8	
Date Sampled		01/09/92	01/09/92	01/09/92	
Date Extracted		01/13/92	01/13/92	01/13/92	
Date Analyzed		01/13/92	01/13/92	01/13/92	
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	180	<10	270	
Diesel	10	650	1100	490	
Quantitation Limit Multiplier		1	1	1	
Percent solids		85	90	91	

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(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-215

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0607.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-215

Table 1

ANALYTICAL RESULTS

Total Oil and Grease in Soil by Infrared Spectrometry

EPA 3550[1] (Mod.)/EPA 413.2[2](SM 5520 C[3])

GTEL Sample Number		01			
Client Identification		SWO1-4			
Date Sampled		01/09/92			
Date Prepared		01/14/92			
Date Analyzed		01/14/92			
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total oil and grease	5	2100			
Quantitation Limit Multiplier		1			

1. Test Methods for Evaluating Solid Waste, SW-846.
2. Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Revised March 1983, U.S. Environmental Protection Agency.
3. Standard Methods for the Examination of Water and Wastewater, 17th ed., 1898, American Public Health Association.

GTEL
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(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-216

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0607.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-216

Table 1

ANALYTICAL RESULTS

Total CAM Metals

GTEL Sample Number			01	02		
Client Identification			SDA1-4	SDA5-8		
Date Sampled			01/09/92	01/09/92		
Date Prepared			01/14/92	01/14/92		
Date Analyzed (Method 6010)			01/14/92	01/14/92		
Date Analyzed (Method 7471)			01/17/92	01/17/92		
Analyte	Method[a]	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Antimony	EPA 6010	5	<5	<5		
Arsenic	EPA 6010	5	<5	<5		
Barium	EPA 6010	1	55	46		
Beryllium	EPA 6010	1	<1	<1		
Cadmium	EPA 6010	1	<1	<1		
Chromium, total	EPA 6010	1	21	24		
Cobalt	EPA 6010	1	5	5		
Copper	EPA 6010	2	13	14		
Lead	EPA 6010	5	9	19		
Mercury	EPA 7471	0.05	<0.05	0.07		
Molybdenum	EPA 6010	1	<1	<1		
Nickel	EPA 6010	2.5	25	28		
Selenium	EPA 6010	5	<5	<5		
Silver	EPA 6010	2.5	<2.5	<2.5		
Thallium	EPA 6010	10	<10	<10		
Vanadium	EPA 6010	2	20	19		
Zinc	EPA 6010	2	41	190		
Quantitation Limit Multiplier			1	1		
Percent Solids			87	83		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-262

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0607.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-262

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	01			
				Sample Identification	SWO1-4			
				Date Sampled	01/09/92			
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result			
Cadmium	mg/Kg	1	EPA 6010	01/14/92	<1			
Chromium	mg/Kg	1	EPA 6010	01/14/92	27			
Lead, total	mg/Kg	5	EPA 6010	01/14/92	12			
Nickel	mg/Kg	2.5	EPA 6010	01/14/92	28			
Zinc	mg/Kg	2.5	EPA 6010	01/14/92	93			
Percent solids					87			

GTEL ENVIRONMENTAL LABORATORIES, INC.

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(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-255

January 15, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0608.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01			
Client Identification		SWO5-8			
Date Sampled		01/10/92			
Date Extracted		01/13/92			
Date Analyzed		01/11/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<10			
Bromomethane	10	<10			
Vinyl chloride	10	<10			
Chloroethane	10	<10			
Methylene chloride	5	220			
Acetone	100	250			
Carbon disulfide	5	<6			
1,1-Dichloroethene	5	<6			
1,1-Dichloroethane	5	43			
1,2-Dichloroethene, total	5	78			
Chloroform	5	<6			
1,2-Dichloroethane	5	<6			
2-Butanone	100	<100			
1,1,1-Trichloroethane	5	120			
Carbon tetrachloride	5	<6			
Vinyl acetate	50	<60			
Bromodichloromethane	5	<6			
1,2-Dichloropropane	5	<6			
cis-1,3-Dichloropropene	5	<6			
Trichloroethene	5	16000			
Dibromochloromethane	5	<6			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01			
Client Identification		SWO5-8			
Date Sampled		01/10/92			
Date Extracted		01/13/92			
Date Analyzed		01/11/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<6			
Benzene	5	2100			
trans-1,3-Dichloropropene	5	<6			
2-Chloroethylvinyl ether	10	<10			
Bromoform	5	<6			
4-Methyl-2-pentanone	50	<60			
2-Hexanone	50	<60			
Tetrachloroethene	5	9400			
1,1,2,2-Tetrachloroethane	5	<6			
Toluene	5	13000			
Chlorobenzene	5	<6			
Ethylbenzene	5	4200			
Styrene	5	<6			
1,2-Dichlorobenzene	5	<6			
1,3-Dichlorobenzene	5	<6			
1,4-Dichlorobenzene	5	<6			
Xylene, total	5	26000			
Trichlorofluoromethane	5	120			
Quantitation Limit Multiplier		1.17			
Percent solids		85			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.

C201255

Chain-of-Custody Record

Nº 0608

Date: 1-10-92

Page 1 of 1

Project No.: 2026

Samplers (Signatures): Stacy Anich

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	TOG	TOTAL Cd, Cr, Pb, Zn, Ni	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1/10	930	SWO-5 → SWO-8 (01)			X		X	X		X	X	X	S		4

D-2

REMARKS

Additional comments

Please Homogenize samples prior to analysis

Please hold samples after analysis for possible additional analysis.

Please return cooler to Geomatrix

Turnaround time: 5-DAY TAT

Results to: ELIZABETH WELLS

Total No. of containers: 4

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:	Method of shipment:
Signature: Stacy Anich	1/10 1992	Signature: Susan / Susan House	1/10	Signature:		Courier
Printed name: STACY ANICH		Printed name: Susan	11/45	Printed name:		Laboratory comments and Log No.:
Company: Geomatrix		Company: Concord Courier		Company:		
Received by:	**Time:**	**Received by:**	**Time:**	**Received by:**	**Time:**	
Signature: Susan / Susan House.	1015	Signature: Jamie Davis		Signature		
Printed name: Susana		Printed name: J. DAVIS 1-10-92		Printed name:		
Company: Concord Courier.		Company: 11:45		Company:		

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4080 Pike Lane
Concord, CA 94520
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(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-256

January 15, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0608.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-256

Table 1

ANALYTICAL RESULTS

TPH as Gasoline and Diesel in Soil

Method: GC-FID[a]

a. Results reported on a wet weight basis.

GTEL Sample Number		01			
Client Identification		SWO5-8			
Date Sampled		01/10/92			
Date Extracted		01/13/92			
Date Analyzed		01/13/92			
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	210			
Diesel	10	570			
Quantitation Limit Multiplier		1			
Percent solids		85			

GTEL ENVIRONMENTAL LABORATORIES, INC.

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(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-257

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-257

Table 1

ANALYTICAL RESULTS

Total Oil and Grease in Soil by Infrared Spectrometry

EPA 3550[1] (Mod.)/EPA 413.2[2](SM 5520 C[3])

GTEL Sample Number		01			
Client Identification		SWO5-8			
Date Sampled		01/10/92			
Date Prepared		01/14/92			
Date Analyzed		01/14/92			
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total oil and grease	5	2400			
Quantitation Limit Multiplier		1			

1. Test Methods for Evaluating Solid Waste, SW-846.
2. Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Revised March 1983, U.S. Environmental Protection Agency.
3. Standard Methods for the Examination of Water and Wastewater, 17th ed., 1898, American Public Health Association.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-258

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/10/92, under chain of custody record 0608.

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Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-258

ANALYTICAL RESULTS

Matrix: Soil

				Sample Number	01			
				Sample Identification	SWO5-8			
				Date Sampled	01/10/92			
Test Description	Units	Detection Limit	Method	Date Analyzed	Test Result			
Cadmium	mg/Kg	1	EPA 6010	01/14/92	<1			
Chromium	mg/Kg	1	EPA 6010	01/14/92	27			
Lead, total	mg/Kg	430	EPA 6010	01/14/92	17			
Nickel	mg/Kg	2.5	EPA 6010	01/14/92	32			
Zinc	mg/Kg	2.5	EPA 6010	01/14/92	110			
Percent solids					86			

GTEL ENVIRONMENTAL LABORATORIES, INC.

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(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-317

January 16, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01*			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/15/92			
Date Analyzed		01/15/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Chloromethane	10	<540			
Bromomethane	10	<540			
Vinyl chloride	10	<540			
Chloroethane	10	<540			
Methylene chloride	5	<270			
Acetone	100	<5400			
Carbon disulfide	5	<270			
1,1-Dichloroethene	5	<270			
1,1-Dichloroethane	5	<270			
1,2-Dichloroethene, total	5	<270			
Chloroform	5	<270			
1,2-Dichloroethane	5	<270			
2-Butanone	100	<5400			
1,1,1-Trichloroethane	5	<270			
Carbon tetrachloride	5	<270			
Vinyl acetate	50	<2700			
Bromodichloromethane	5	<270			
1,2-Dichloropropane	5	<270			
cis-1,3-Dichloropropene	5	<270			
Trichloroethene	5	1800			
Dibromochloromethane	5	<270			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.
* Sample diluted due to non target matrix interference.

Table 1 (Continued)

ANALYTICAL RESULTS

Volatile Organics in Soil

EPA Method 8240[a]

GTEL Sample Number		01*			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/15/92			
Date Analyzed		01/15/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
1,1,2-Trichloroethane	5	<270			
Benzene	5	<270			
trans-1,3-Dichloropropene	5	<270			
2-Chloroethylvinyl ether	10	<540			
Bromoform	5	<270			
4-Methyl-2-pentanone	50	<2700			
2-Hexanone	50	<2700			
Tetrachloroethene	5	1000			
1,1,2,2-Tetrachloroethane	5	<270			
Toluene	5	2500			
Chlorobenzene	5	<270			
Ethylbenzene	5	1700			
Styrene	5	<270			
1,2-Dichlorobenzene	5	<270			
1,3-Dichlorobenzene	5	<270			
1,4-Dichlorobenzene	5	<270			
Xylene, total	5	10000			
Trichlorofluoromethane	5	<270			
Quantitation Limit Multiplier		54			
Percent solids		92			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Results reported on a dry weight basis.
* Sample diluted due to non target matrix interference.

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-318

January 17, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

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If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270[a]

GTEL Sample Number		01			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/16/92			
Date Analyzed		01/17/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
Phenol	300	<300			
bis(2-Chloroethyl)ether	300	<300			
2-Chlorophenol	300	<300			
1,3-Dichlorobenzene	300	<300			
1,4-Dichlorobenzene	300	<300			
Benzyl alcohol	300	<300			
1,2-Dichlorobenzene	300	<300			
2-Methylphenol	300	<300			
bis-(2-Chloroisopropyl)ether	300	<300			
4-Methylphenol	300	<300			
N-Nitroso-di-propylamine	300	<300			
Hexachloroethane	300	<300			
Nitrobenzene	300	<300			
Isophorone	300	<300			
2-Nitrophenol	300	<300			
2,4-Dimethylphenol	300	<300			
Benzoic acid	1500	<1500			
bis(2-Chloroethoxy)methane	300	<300			
2,4-Dichlorophenol	300	<300			
1,2,4-Trichlorobenzene	300	<300			
Naphthalene	300	1100			
4-Chloroaniline	300	<300			
Hexachlorobutadiene	300	<300			
4-Chloro-3-methylphenol	300	<300			
2-Methylnaphthalene	300	1700			
Hexachlorocyclopentadiene	300	<300			
2,4,6-Trichlorophenol	300	<300			
2,4,5-Trichlorophenol	1500	<1500			
2-Chloronaphthalene	300	<300			
2-Nitroaniline	1500	<1500			
Dimethylphthalate	300	<300			
Acenaphthylene	300	<300			
3-Nitroaniline	1500	<1500			
Acenaphthene	300	<300			
2,4-Dinitrophenol	1500	<1500			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample extraction by EPA Method 3550. Results reported on a dry weight basis.

Table 1 (Continued)

ANALYTICAL RESULTS

Semi-Volatile Organics in Soil

EPA Method 8270[a]

GTEL Sample Number		01			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/16/92			
Date Analyzed		01/17/92			
Analyte	Quantitation Limit, ug/Kg	Concentration, ug/Kg			
4-Nitrophenol	1500	<1500			
Dibenzofuran	300	<300			
2,4-Dinitrotoluene	300	<300			
2,6-Dinitrotoluene	300	<300			
Diethylphthalate	300	<300			
4-Chlorophenyl-phenylether	300	<300			
Fluorene	300	<300			
4-Nitroaniline	1500	<1500			
4,6-Dinitro-2-methylphenol	1500	<1500			
N-Nitrosodiphenylamine	300	<300			
4-Bromophenyl-phenylether	300	<300			
Hexachlorobenzene	300	<300			
Pentachlorophenol	1500	<1500			
Phenanthrene	300	1200			
Anthracene	300	<300			
Di-n-butylphthalate	300	<300			
Fluoranthene	300	1300			
Pyrene	300	810			
Butylbenzylphthalate	300	<300			
3,3'-Dichlorobenzidine	600	<600			
Benzo(a)anthracene	300	<300			
bis(2-Ethylhexyl)phthalate	300	<300			
Chrysene	300	<300			
Di-n-octylphthalate	300	<300			
Benzo(b)fluoranthene	300	<300			
Benzo(k)fluoranthene	300	550			
Benzidine	600	<600			
Benzo(a)pyrene	300	360			
Indeno(1,2,3-cd)pyrene	300	760			
Dibenz(a,h)anthracene	300	<300			
Benzo(g,h,i)perylene	300	920			
Quantitation Limit Multiplier		1			
Percent solids		89			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample extraction by EPA Method 3550. Results reported on a dry weight basis.

GTEL
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Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-319

January 18, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/15/92, under chain of custody record 0610.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,

GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-319

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Gasoline in Soil

Modified EPA Method 8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. Results reported on a wet weight basis.

GTEL Sample Number		01			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/16/92			
Date Analyzed		01/17/92			
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	43			
Detection Limit Multiplier		1			
Percent solids		89			

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-320

January 17, 1992

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Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-320

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Diesel Fuel in Soil

Modified EPA Methods 3550/8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Results reported on a wet weight basis.

GTEL Sample Number		01			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Extracted		01/16/92			
Date Analyzed		01/16/92			
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Diesel	10	300			
Quantitation Limit Multiplier		1			
Percent solids		89			

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Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-321

January 20, 1992

Elizabeth Wells
Geomatrix Consultants
100 Pine St., 10th Floor
San Francisco, CA 94111

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Sincerely,

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Emma P. Popek

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number: 2026
Project ID: Not Given
Work Order Number: C2-01-321

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil by Infrared Spectrometry[1]

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)[2]

GTEL Sample Number		01			
Client Identification		SWO9-12			
Date Sampled		01/15/92			
Date Prepared		01/17/92			
Date Analyzed		01/20/92			
Analyte	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	1000			
Quantitation Limit Multiplier		1			
Percent solids		92			

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

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Emma P. Popek

Emma P. Popek
Laboratory Director

Client Number: GMC01OPK01
Consultant Project Number 2026
Project ID: Not Given
Work Order Number: C2-01-322

Table 1

ANALYTICAL RESULTS

Total CAM Metals

GTEL Sample Number			01			
Client Identification			SWO9-12			
Date Sampled			01/15/92			
Date Prepared			01/16/92			
Date Analyzed (Method 6010)			01/16/92			
Date Analyzed (Method 7471)			01/17/92			
Analyte	Method[a]	Quantitation Limit, mg/Kg	Concentration, mg/Kg			
Antimony	EPA 6010	5	<5			
Arsenic	EPA 6010	5	7			
Barium	EPA 6010	1	87			
Beryllium	EPA 6010	1	<1			
Cadmium	EPA 6010	1	<1			
Chromium, total	EPA 6010	1	26			
Cobalt	EPA 6010	1	6			
Copper	EPA 6010	2	16			
Lead	EPA 6010	5	5			
Mercury	EPA 7471	0.05	0.09			
Molybdenum	EPA 6010	1	<1			
Nickel	EPA 6010	2.5	29			
Selenium	EPA 6010	5	<5			
Silver	EPA 6010	2.5	<2.5			
Thallium	EPA 6010	10	18			
Vanadium	EPA 6010	2	24			
Zinc	EPA 6010	2	42			
Quantitation Limit Multiplier			1			
Percent Solids			86			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986.

K-2

C201 5 1 T

Chain-of-Custody Record

№ 0610

Date: 1-15-92

Page 1 of 1

Project No.: 2026

Samplers (Signatures): Stacy Anich

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	5520 F Oil & Grease	Total Pb, Ni, Cr, Cd, Zn	Title 22 Metals	Cooled	Soil (S) or water (W)	Acidified	Number of containers
1-15	845	APL-1					X	X	X				X	S		1
	915	APL-2			X		X	X					X	S		1
	950	APL-3					X	X	X				X	S		1
	1000	APL-4					X	X	X				X	S		1
	1015	APL-5			X		X	X		X	X		X	S		1
	1045	APL-6			X		X	X		X	X		X	S		1
	1050	APL-7					X	X	X				X	S		1
	1110	SWD-9 → SWD-12 01			X	X	X	X		X		X	X	S		4 5

Additional comments

Please hold samples after analysis

Total Oil + Grease should be done by method 5520 (with Silica Gell)

48-hr TAT TOL APL-1 THROUGH APL-7

please composite & homogenize prior to analysis. 5 DAY TAT

Turnaround time: SEE REMARKS

Results to: ELIZABETH WELLS

Total No. of containers: 11

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:	Method of shipment:
Stacy Anich	1-15	Susan House				Courier
Signature: STACY ANICH	1992	Signature: Susan House		Signature:		Laboratory comments and Log No.:
Printed name: Stacy Anich		Printed name: Susan House		Printed name:		
Company:		Company: Concord Courier		Company:		
Received by:	**Time:**	**Received by:**	**Time:**	**Received by:**	**Time:**	
Susan House				Signature: D. Sauer 1/15	1:15	
Signature: Susan House	1130	Signature:		Printed name:		
Printed name: Susan House		Printed name:		Company:		
Company: Concord Courier		Company:				

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100 Pine St. 10th Floor
San Francisco, CA. 94111
(415) 434-9400

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LOG NO: E92-02-021

Received: 03 FEB 92

Mailed: FEB 19 1992

Elizabeth Wells
atrix Consultants
0 Pine Street, 10th Floor
n Francisco, California 94111

Purchase Order: 201476

CC: Mr. Jon Amdur, Port of Oakland

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
APL2-1	03 FEB 92
APL2-2	03 FEB 92
SDA2-1, 2-4	03 FEB 92

		02-021-1	02-021-2	02-021-3
A Metals by ICAP				
g	kg	---	---	<1
g/	kg	---	---	71
,	mg/kg	---	---	0.3
	/kg	---	---	5
g	kg	---	---	6
	mg/kg	---	---	13
g	kg	---	---	9
	mg/kg	---	---	<4
g/	kg	---	---	14
k		---	---	8
	g/kg	---	---	<4
	mg/kg	---	---	<4
	mg/kg	---	---	19
k		---	---	29
g	kg	---	---	0.8
g/	kg	---	---	0.05
	/kg	---	---	<0.4
d	Digestion, Date	---	---	02.04.92
d	Digestion, Date	---	---	02.04.92

Street
94608

510/428-2300
Fax: 510/547-3643

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Analytical Report

LOG NO: E92-02-021

Received: 03 FEB 92

Ms. Elizabeth Wells
Geomatrix Consultants
100 Pine Street, 10th Floor
San Francisco, California 94111
CC: Mr. Jon Amdur, Port of Oakland

Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
B/N,A Ext. Priority Pollutants			
Date Analyzed	---	---	02.11.92
Date Extracted	---	---	02.05.92
Dilution Factor, Times	---	---	25
1,2,4-Trichlorobenzene, mg/kg	---	---	<5
1,2-Dichlorobenzene, mg/kg	---	---	<5
1,2-Diphenylhydrazine, mg/kg	---	---	<5
1,3-Dichlorobenzene, mg/kg	---	---	<3
1,4-Dichlorobenzene, mg/kg	---	---	<3
2,4,5-Trichlorophenol, mg/kg	---	---	<5
2,4,6-Trichlorophenol, mg/kg	---	---	<3
2,4-Dichlorophenol, mg/kg	---	---	<3
2,4-Dimethylphenol, mg/kg	---	---	<5
2,4-Dinitrophenol, mg/kg	---	---	<8
2,4-Dinitrotoluene, mg/kg	---	---	<8
2,6-Dinitrotoluene, mg/kg	---	---	<3
2-Chloronaphthalene, mg/kg	---	---	<3
2-Chlorophenol, mg/kg	---	---	<5
2-Methyl-4,6-dinitrophenol, mg/kg	---	---	<3
2-Methylnaphthalene, mg/kg	---	---	6
2-Methylphenol (o-Cresol), mg/kg	---	---	<3
2-Nitroaniline, mg/kg	---	---	<8
2-Nitrophenol, mg/kg	---	---	<3
3,3'-Dichlorobenzidine, mg/kg	---	---	<13
3-Nitroaniline, mg/kg	---	---	<8
4-Bromophenylphenylether, mg/kg	---	---	<5

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
4-Chloro-3-methylphenol, mg/kg	---	---	<5
4-Chloroaniline, mg/kg	---	---	<8
4-Chlorophenylphenylether, mg/kg	---	---	<5
4-Methylphenol (p-Cresol), mg/kg	---	---	<5
4-Nitroaniline, mg/kg	---	---	<8
4-Nitrophenol, mg/kg	---	---	<30
Acenaphthene, mg/kg	---	---	<5
Acenaphthylene, mg/kg	---	---	<3
Aniline, mg/kg	---	---	<10
Anthracene, mg/kg	---	---	<5
Benzidine, mg/kg	---	---	<50
Benzo(a)anthracene, mg/kg	---	---	<3
Benzo(a)pyrene, mg/kg	---	---	<3
Benzo(b)fluoranthene, mg/kg	---	---	<8
Benzo(g,h,i)perylene, mg/kg	---	---	<3
Benzo(k)fluoranthene, mg/kg	---	---	<8
Benzyl alcohol, mg/kg	---	---	<5
Benzoic acid, mg/kg	---	---	<8
Butylbenzylphthalate, mg/kg	---	---	<3
Chrysene, mg/kg	---	---	<3
Di-n-octylphthalate, mg/kg	---	---	<5
Dibenzo(a,h)anthracene, mg/kg	---	---	<3
Dibenzofuran, mg/kg	---	---	<3
Dibutylphthalate, mg/kg	---	---	<3
Diethylphthalate, mg/kg	---	---	<3
Dimethylphthalate, mg/kg	---	---	<3

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Emeryville, CA 94608

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Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
Fluoranthene, mg/kg	---	---	<3
Fluorene, mg/kg	---	---	<3
Hexachlorobenzene, mg/kg	---	---	<5
Hexachlorobutadiene, mg/kg	---	---	<5
Hexachlorocyclopentadiene, mg/kg	---	---	<20
Hexachloroethane, mg/kg	---	---	<3
Indeno(1,2,3-c,d)pyrene, mg/kg	---	---	<5
Isophorone, mg/kg	---	---	<3
N-Nitrosodimethylamine, mg/kg	---	---	<8
N-Nitrosodiphenylamine, mg/kg	---	---	<8
N-Nitrosodi-n-propylamine, mg/kg	---	---	<3
Nitrobenzene, mg/kg	---	---	<5
Naphthalene, mg/kg	---	---	4
Phenanthrene, mg/kg	---	---	<5
Phenol, mg/kg	---	---	<5
Pentachlorophenol, mg/kg	---	---	<8
Pyrene, mg/kg	---	---	<3
Bis(2-chloroethoxy)methane, mg/kg	---	---	<3
Bis(2-chloroethyl)ether, mg/kg	---	---	<3
Bis(2-chloroisopropyl)ether, mg/kg	---	---	<3
Bis(2-ethylhexyl)phthalate, mg/kg	---	---	<5
Other B/N,A Ext. Priority Pollutants	---	---	---
Semi-Quantified Results **			
C7-C35 Hydrocarbon Matrix, mg/kg	---	---	10000

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Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.			
Diesel Hydrocarbons 3550/8015			
Date Analyzed	02.07.92	02.07.92	02.04.92
Date Extracted	02.04.92	02.04.92	02.07.92
Dilution Factor, Times	1000	1000	500
C10 to C22 (as diesel), mg/kg	5000	5000	2600
Approximate Character, .	DIESEL	DIESEL	DIESEL
Aromatic Hydrocarbons			
Date Analyzed	02.07.92	02.07.92	---
Dilution Factor, Times	1000	1000	---
Benzene, mg/kg	<0.5	0.7	---
Ethylbenzene, mg/kg	3.2	11	---
Toluene, mg/kg	3.3	12	---
Total Xylene Isomers, mg/kg	21	61	---
TPH - Volatile Hydrocarbons			
Date Analyzed	---	---	02.07.92
Dilution Factor, Times	---	---	1000
C6 to C14 (as gasoline), mg/kg	---	---	610
Approximate Character, .	---	---	UNKNOWN

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
Volatile Organics (EPA 8240)			
Date Analyzed	---	---	02.10.92
Time Analyzed	---	---	21:50
Analyst ID, No.	---	---	7835
Detection Limit, mg/kg	---	---	0.8
Dilution Factor, Times	---	---	4
Instrument ID, No.	---	---	517-04
1,1,1-Trichloroethane, mg/kg	---	---	<0.8
1,1,2,2-Tetrachloroethane, mg/kg	---	---	<0.8
1,1,2-Trichloroethane, mg/kg	---	---	<0.8
1,1-Dichloroethane, mg/kg	---	---	<0.8
1,1-Dichloroethene, mg/kg	---	---	<0.8
1,2-Dichloroethane, mg/kg	---	---	<0.8
1,2-Dichlorobenzene, mg/kg	---	---	<0.8
1,2-Dichloroethene (Total), mg/kg	---	---	<0.8
1,2-Dichloropropane, mg/kg	---	---	<0.8
1,3-Dichlorobenzene, mg/kg	---	---	<0.8
1,4-Dichlorobenzene, mg/kg	---	---	<0.8
2-Chloroethylvinylether, mg/kg	---	---	<0.8
2-Hexanone, mg/kg	---	---	<8
4-Methyl-2-Pentanone, mg/kg	---	---	<8
Acetone, mg/kg	---	---	<20
Acrolein, mg/kg	---	---	<4
Acrylonitrile, mg/kg	---	---	<8
Bromodichloromethane, mg/kg	---	---	<0.8
Bromomethane, mg/kg	---	---	<0.8

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
Benzene, mg/kg	---	---	<0.8
Bromoform, mg/kg	---	---	<0.8
Chlorobenzene, mg/kg	---	---	<0.8
Carbon Tetrachloride, mg/kg	---	---	<0.8
Chloroethane, mg/kg	---	---	<0.8
Chloroform, mg/kg	---	---	<0.8
Chloromethane, mg/kg	---	---	<0.8
Carbon Disulfide, mg/kg	---	---	<0.8
Dibromochloromethane, mg/kg	---	---	<0.8
Ethylbenzene, mg/kg	---	---	1.7
Freon 113, mg/kg	---	---	<0.8
Methyl ethyl ketone, mg/kg	---	---	<8
Methylene chloride, mg/kg	---	---	<4
Styrene, mg/kg	---	---	<0.8
Trichloroethene, mg/kg	---	---	<0.8
Trichlorofluoromethane, mg/kg	---	---	<0.8
Toluene, mg/kg	---	---	2.2
Tetrachloroethene, mg/kg	---	---	<0.8
Vinyl acetate, mg/kg	---	---	<0.8
Vinyl chloride, mg/kg	---	---	<0.8
Total Xylene Isomers, mg/kg	---	---	12
cis-1,2-Dichloroethene, mg/kg	---	---	<0.8
cis-1,3-Dichloropropene, mg/kg	---	---	<0.8
trans-1,2-Dichloroethene, mg/kg	---	---	<0.8
trans-1,3-Dichloropropene, mg/kg	---	---	<0.8

1255 Powell Street
Emeryville, CA 94608

510/428-2300
Fax: 510/547-3643

BCA B C Analytical

Analytical Report

LOG NO: E92-02-021

Received: 03 FEB 92

Ms. Elizabeth Wells
Geomatrix Consultants
100 Pine Street, 10th Floor
San Francisco, California 94111
CC: Mr. Jon Amdur, Port of Oakland

Purchase Order: 201476

Project: 2026 B

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
02-021-1	APL2-1	03 FEB 92
02-021-2	APL2-2	03 FEB 92
02-021-3	SDA2-1, 2-4	03 FEB 92

PARAMETER	02-021-1	02-021-2	02-021-3
Semi-Quantified Results **			
C8-C13 Hydrocarbon Matrix, mg/kg	---	---	1

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

This report includes all data excluding EPA 8270 faxed to Ms. Wells on 2/11/92. The 8270 data was faxed on the following day. Rush surcharge for 8270 analysis was removed. C. Ho

Sim D. Lessley, Ph.D., Laboratory Director

1255 Powell Street
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B C Analytical

9202021

Chain-of-Custody Record

No 0630

Date: 2-3-92

Page 1 of 1

Project No.: 2026 B

Samplers (Signatures): Stacy Hauch, Stephanie Poletka

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX	TITLE 22 METALS	Cooled	Soil (S) or water (W)	Acidified	Number of containers
2/3	1130	APL2-1		X				X			C	S		2
	1330	APL2-2		X				X			C	S		2
↓	1400	SDA2-1 → SDA2-4			X	X	X	X		X	C	S		4

ANALYSES

REMARKS

Additional comments

Please composite & homogenize the SDA 2-1 → SDA2-4 prior to analysis

5-DAY TAT on all samples

Port of Oakland work order #201476

Please Bill Port of Oakland Directly

Results to Geomatrix (Elizabeth Wells)

Turnaround time: 5-DAY

Results to: ELIZABETH WELLS

Total No. of containers: 8

Relinquished by: Signature: Stephanie A. Poletka Printed name: Stephanie A. Poletka Company: Geomatrix	Date: 2/4/92	Relinquished by: Signature: Printed name: Company:	Date:	Relinquished by: Signature: Printed name: Company:	Date:
Received by: BCA Signature: Litvak Printed name: JOANE LITVAK Company: BCA	Time: 0171	Received by: Signature: Printed name: Company:	Time:	Received by: Signature: Printed name: Company:	Time:

Method of shipment: drop off

Laboratory comments and Log No.:

Geomatrix Consultants
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San Francisco, CA 94111
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