INTERIM REPORT
SITE CHARACTERIZATION
EIGHTH AVENUE AREA
NINTH AVENUE TERMINAL
PORT OF OAKLAND, CALIFORNIA
SCI 133.005

#3335
KOT

VOLUME I OF II

TEXT

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December 23, 1996

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PRIVILEGED AND CONFIDENTIAL

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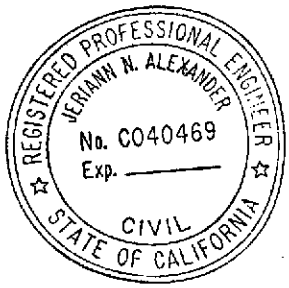

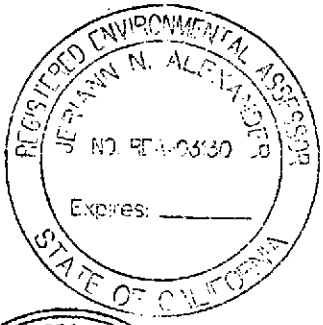

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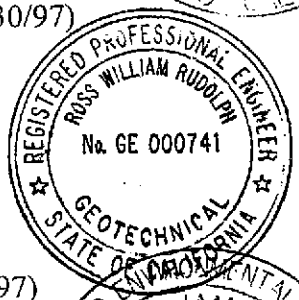

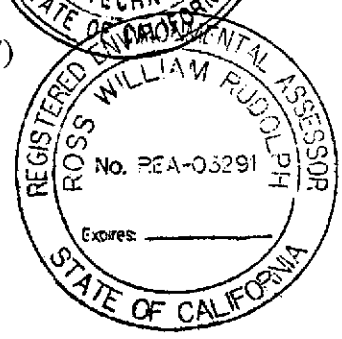

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I EXECUTIVE SUMMARY

In 1992, the United States Coast Guard traced the source of an estuary hydrocarbon release to an active, above ground storage tank system at the Keep-on-Trucking (KOT) Facility located at 370-8th Avenue, within the Ninth Avenue Terminal. Subsequent investigations at the facility were limited to areas immediately adjacent to the purported point of release. Preliminary site research suggested the likely potential for preferential migration pathways exist for the KOT spill. It is also suggested that other sources of contamination do exist within the study area.

Pursuant to presentation and discussion of the data to Alameda County, a characterization study was implemented. Petroleum hydrocarbon impacted soils and groundwater were identified throughout the Ninth Avenue Terminal. Other potentially hazardous chemicals were also identified. Several underground tanks and a variety of tenants have also been present at the site. In addition, numerous underground utilities were identified in the area. Further site characterization is necessary to better define the 1992 source area impacts and impacts from other site potential sources.

II INTRODUCTION

This is an interim report for a Site Characterization study conducted by Subsurface Consultants, Inc. (SCI) at the KOT facilities and within the Eighth Avenue area of the Port of Oakland's (PORT) Ninth Avenue Terminal. Eighth Avenue extends through the western portion of the Ninth Avenue Terminal. The terminal is bordered by the Embarcadero, Interstate 880 and Southern Pacific Railroad tracks to the north, Clinton Basin to the west, the Inner Harbor Channel to the south and Brooklyn Basin to the east. The general location of the Ninth Avenue Terminal is shown on the Vicinity Map, Plate 1.

The study described herein was performed in general accordance with a work plan prepared by SCI entitled "Work Plan for Further Site Characterization, Keep-On-Trucking Diesel Release and Eighth Avenue Area" dated June 4, 1996. The primary purpose of the study was to evaluate the extent of petroleum hydrocarbon impacts resulting from the 1992 diesel releases at the Keep-On-Trucking facility located at 370-Eighth Avenue, at the Ninth Avenue Terminal. Secondarily, potential impacts from other possible source areas, apparent from a review of historical data, were also evaluated.

III SITE DESCRIPTION AND HISTORY

A. Site Description

The Ninth Avenue Terminal area is a flat, irregularly-shaped parcel encompassing approximately 30 acres as shown on the Site Plan, Plate 2. The area is currently owned by the PORT. However, the majority of the area is leased to tenants. Tenants presently occupy the following buildings.

Keep-on-Trucking Maintenance Shop	H-107
Keep-on-Trucking Warehouse	H-229
Keep-on-Trucking Offices	H-228
National Furniture Liquidators	H-232
Lakeside Recycling	H-314
Harbor Forklift	H-318
Liquid Carbonic	

Rail spurs extend partially through the area along Seventh Avenue and in between the structures occupied by National Furniture Liquidators and Lakeside Recycling.

Concrete wharfs extend along the south and east sides of the terminal. Ninth and Tenth Avenues are predominately improved (i.e. paved). The majority of Seventh and Eighth Avenues are unimproved.

Storm water runoff is collected by numerous catch basins on-site and conveyed via below grade storm drains, along Eighth Avenue, to the Inner Harbor and the Clinton Basin. Storm water runoff from a segment of the Embarcadero is also conveyed to the Eighth Avenue storm drain system. Sanitary sewer improvements consist of laterals extending from buildings to a main

sewer line below Eighth Avenue. The sanitary sewer mainline flows toward the Embarcadero. Other subsurface utilities in the area include, but are not necessarily limited to, the following: gas, electric, water and fire alarm.

B. Site Development and Use History

According to an Official Historical Atlas Map of Alameda County by Thompson & West dated 1878, the terminal area originally consisted of tidal flats and marshlands, completely unconnected to the mainland. By 1911 the terminal area was almost completely filled in to its current boundaries. The 1911 Sanborn Fire Insurance Map shows that Clinton Basin was formerly called Sessions Basin. Concrete marginal wharfs previously existed along the Inner Harbor Channel to the south and along the east terminal boundary as early as 1950. Several configurations of timber wharfs have existed along the Clinton Basin side of the terminal. Numerous structures existed throughout the terminal area since 1911, as shown on Plate 2. Most of these structures have since been demolished.

Numerous tenants with various and diverse businesses have occupied buildings and areas at the terminal. Significant uses initially identified with the potential to environmentally impact the Ninth Avenue Terminal Area are listed below. They are also shown on Plate 2.

Site Ref. Area	Business/Use	Circa	Potential Environmental Concerns
A/K	Pacific Lumber Co.	1910	Oil House, Well, Gasoline Engine
	H-227 Yard Area	1960	UST, Gasoline
B	Cleaning Compound Mfg. Polish Factory	1950	Heavy Metals
C	Liquid Fertilizer Mfg.	1950	Fertilizers/Pesticides, Petroleum Hydrocarbons
D	Vic Adelsons's Drayage	1950	2 USTs w/Pumps
	Silk-screen Printing	1950	Unknown Concrete Vault, Petroleum Hydrocarbons, PNAs
	Diesel Fuel Injector Repair	1950	Petroleum Hydrocarbon/Solvent Use
	Fertilizer Bagging	1960	Fertilizers, Heavy Metals
D,F,G,H,M	Keep on Trucking	1970 to ongoing	2 ASTs, 1 UST, Truck Repair Shop, Petroleum Hydrocarbon/Solvent Use
E,H	United Packing Corp.	1930	Repair Shop, Boiler Room
	Rexford Pre-Pakt Co./ Safeway	1950	Repair Shop, Boiler Room, UST-Oil Tanks
	CD Erickson	1960	2 ASTs, UST
	Western Tube & Conduit Midland Ross Corp.	1980	Plating Activities, Heavy Metals, Waste Oil, Acids
G	Fiberglass Forming	1960	Solvent Use
I,J	American Bitumuls	1940	ASTs - Heavy Oils and Waste Oils
	Port Petroleum	1950	ASTs - Heavy Oils and Waste Oils
L	Storm Drain Lines/ Outfalls	NA	Infiltration/Exfiltration
N	Bay City Fuel Co.	1950	Oil House, ASTs, Gas/Oil Storage
	East Bay Oil Co.	1960	Oil House, ASTs and UST, Gas/Oil Storage
O	Repair Garage	1950	UST
P	Chemical, Pipe & Fittings Warehouses	1950	Misc. Chemicals, Heavy Metals

C. Documented Environmental Impacts

Review of regulatory agency files, PORT files, and interviews with past PORT employees indicate there were documented releases of petroleum hydrocarbons within the Ninth Avenue Terminal area. In addition, there was a regulated closure of a former plating business which operated in H232. A summary of our findings, to date, regarding these issues is presented below.

1. 1973 Oil Spill

On January 18, 1973, "oil" was released from an above ground storage tank (AST) situated in the area of the former Port Petroleum leasehold. Reportedly, during decommissioning of Port Petroleum's bulk fuel handling facility, a valve on an AST was opened. The AST still contained an oil product. Reportedly, about 125,000 gallons flowed through a break in a concrete containment dike and overland into a catch basin. Evidence of the release was observed within the estuary. Records of the ensuing cleanup are not comprehensive. However, it appears that oil at the groundsurface was collected and the area was regraded.

2. Midland Ross Corporation Site Closure

In 1987, the Midland Ross Corporation closed a plating business which was located within Building H-232 at 845 Embarcadero. Reportedly, plating waste water was treated and discharged to the sanitary sewer. Chemicals stored in above ground tanks, as shown on a site plan dated 1983 in the Alameda County file, included ferrous sulfate, chrome rinse, chromate acid, copper cyanide, caustic cyanide, sulfuric acid, electro clean, caustic soda, zinc cyanide, and chlorine. Chemicals listed as previously stored on-site in sumps, as reported to Alameda County

in 1985, included sulfuric and nitric acids, sodium hydroxide, sodium hypochlorite, sodium metabisulfite, ferrous sulfate, cyanide salts, zinc, hexavalent and trivalent chrome, and waste oil. A closure report prepared by Cummings Environmental indicated that additional compounds were removed from the site in 1987, including chromate acid, electro cleaner, Poly Chem solvents, methyl metharcrylate, and unknown solvents. A complete copy of the closure report, with analytical test reports and manifests, was not available for review.

3. 1992 Estuary Releases

On October 21 and 27, 1992 the United States Coast Guard (Coast Guard) was notified that diesel fuel was observed within Clinton Basin. The Coast Guard immediately instigated various tasks to mitigate impacts to the basin and estuary, as well as to identify the source. On November 2, 1992 the Coast Guard was notified of another, yet more significant, diesel release to the estuary near Clinton Basin. Due to tides, wind and currents, the diesel spread to the north and central basin marinas. The Coast Guard stepped up their investigation when diesel fuel was identified within the main storm drain line, extending along Eighth Avenue. The PORT retained Uribe & Associates (Uribe) to investigate the source of the diesel and Riedel Environmental Services to immediately remediate the diesel product. Uribes study included the following:

- Conducting a utility survey
- Dye tracer testing of the Eighth Avenue storm drain
- Drilling and sampling test borings
- Observing conditions in several storm drain manholes in the area

- Observing conditions within several test pits excavated adjacent to storm drain lines
- Rodding and cleaning some storm drain lines
- Obtaining water samples from some of the manholes
- Analytically testing numerous soil, groundwater and grab water samples for petroleum hydrocarbons and metals.

Based on the continuing Coast Guard and Uribe studies, the diesel fuel was traced to a single storm drain system at the Ninth Avenue Terminal which runs along Eighth Avenue. The storm drain system reportedly drains the Eighth Avenue area and a portion of the Embarcadero. Following a dye tracer test, the diesel fuel was traced back to an AST operated by Keep-on-Trucking (KOT) in the former building H-213. A leak in a below ground distribution pipe attached to the AST was identified as the source of the diesel fuel release. The source area is as shown on Plates 2 and 7. The Coast Guard issued a Notice of Designation dated January 8, 1993 identifying Mr. Paul Bokanower, as the owner of the source of diesel found in the Oakland Inner Harbor and Keep-On-Trucking as the source of the diesel. The AST system was subsequently dismantled and removed along with locally impacted soil. During decommissioning of the system, an abandoned underground storage tank (UST) was identified in the area of the pipeline leak. This tank was also removed during remedial activities. Further details regarding the 1992 releases and their impacts may be provided by interviewing percipient witnesses and through further review of contemporaneous files and field notes.

Analytical data from soil samples obtained during Uribes studies and subsequent remedial activities are summarized in the attached Tables.

This site is currently regulated by the Alameda County Health Care Services Agency's (ACHCSA) local oversight program. Six wells, MW-1 through MW-6, installed by Uribe and Clayton Environmental Services (Clayton) to assess the extent of groundwater impact. Free floating diesel has been observed on an ongoing basis in two of these wells (MW-4 and MW-6). The extent of the free product plume has not been delineated to date. It appears that the plume in this area is associated with the 1992 AST releases. This plume extends radially away from the AST release area, except where it was directly transported to the estuary, Clinton Basin and other currently unknown areas via preferential flow along and within utility corridors in the vicinity. The approximate radial extent of the plume is shown on Plate 7.

Groundwater monitoring has been ongoing in this area since 1993. Free floating diesel has been recovered from wells MW-4 and MW-6 through bailing and dedicated passive recovery equipment. To date, only 2 gallons of diesel have been recovered as the recovery system does not seem appropriate for the given site conditions. The data from the February 1996 event indicates that concentrations in the wells have not changed significantly since monitoring began in 1993. Monitoring data are summarized in the attached Tables.

4. <u>1994 H-107 Tank Removal</u>

Keep-on-Trucking (KOT) has leased building H-107 since approximately 1982. Currently H-107 is the maintenance facility for KOT. An underground diesel tank was removed from the east side of the building in 1994. Both gasoline and diesel range hydrocarbons were detected in soil and groundwater samples obtained following tank removal. Clayton drilled two soil borings (BH-1 and BH-2) and installed one groundwater monitoring well (MW-7) at the site

in 1995 to evaluate impacts. Based on groundwater monitoring data, the area has been impacted by diesel range petroleum hydrocarbons. Monitoring data is summarized in the attached Tables.

IV FIELD INVESTIGATION

A. Purpose and Scope of Work

The purpose of this study was to preliminarily evaluate potential impacts to the study area resulting from the known KOT pipeline leak, as well as from other identified potential sources. A scope of services was developed to investigate the area in general accordance with the Work Plan. The rationale for the study is outlined herein. The rationale is based on our site history and various site reconnaissances.

Floating diesel has been observed in wells near the KOT pipeline leak which occurred outside former Building H-213. However, the free product plume is currently located upgradient of the release point and along a storm drain line. This suggests that the floating product associated with the diesel release(s) has migrated in unsuspected directions, and that preferential flow may be occurring through utility corridors and/or abandoned storm drain systems resulting in distribution of floating product to other areas of the Ninth Avenue Terminal. Accordingly, soil and groundwater samples were obtained and analyzed to evaluate the extent of impacts.

Numerous active subsurface utilities, such as storm drains and sanitary sewers, exist in the KOT pipeline leak area. Storm drains and sanitary sewers extend throughout the terminal area. Abandoned utility lines associated with the historical use of the terminal also exist.

Subsurface utilities and associated bedding materials may act as potential conduits for contaminant migration to the estuary and basin. Accordingly, a utility survey was performed to identify the location of storm drain and sanitary sewer alignments, and corresponding manholes and storm drain inlets. Soil and groundwater samples were collected from locations adjacent to storm drain and sanitary sewer pipelines, manholes and storm drain inlets to investigate whether utility lines act as potential migration pathways.

Based on our research of historical uses at the site, several other petroleum hydrocarbon sources may impact the terminal area. These potential sources are summarized below:

- Oil Tanks - West of Building H-232
- 10,000 gallon UST - North of Building H-227
- Suspected UST near former well, circa 1911 - Northeast of Building H-227
- Two USTs - Near former Building H-209/H-229
- UST/ASTs - East Bay Oil Company Area
- Diesel AST - Southwest of former Building H-213
- Suspected 1970's surface release of oil at the location of the former American Bitumuls and Port Petroleum facilities
- Storm drain and sanitary sewer lines and laterals that extend adjacent to former businesses with suspected petroleum hydrocarbon use
- Storm drain lines that discharge into Clinton Basin

Potential UST areas were screened for the presence of underground improvements by a utility locator. Soil and groundwater samples were collected and analyzed to evaluate chemical impacts at these potential source areas.

During a site reconnaissance, up to 17 inches of a petroleum based liquid and water were observed in a manhole south of the American Bitumuls/Port Petroleum area. PORT maps indicate that the manhole may be connected to a concrete storm drain which extends along Eighth Avenue, and parallel to the KOT Pipeline Leak area. The petroleum based liquid and water were removed to the extent possible. Samples of the liquid and water were analyzed to evaluate appropriate disposal alternatives.

A more detailed description of the services performed by SCI is outlined below.

B. Site Utility Survey

Accessible subsurface utilities within the study area were located using electronic and acoustic instrumentation by the California Utility Surveys (C.U. Surveys). Storm drains, sanitary sewers, wharf access manholes, water lines, gas lines, electric and fire alarm lines, and conduits were located to date.

C.U. Surveys began their utility survey by first locating all visible surface appurtenances such as catch basins, manholes, cleanouts, water and gas valves, etc. C.U. Surveys then opened all manholes and catch basins and inspected each vault for the following:

- Pipes leading into and out of the vault,
- Pipeline orientations,
- Pipe construction material and diameter,

- Pipe flowline depths, and
- Significant indications of petroleum based liquids.

Not all vaults were accessible due to site obstructions and some vaults could not be inspected due to the presence of water, silt or other media. A copy of C.U. Survey's report is presented in Appendix B.

C.U. Surveys also probed any storm drain or sanitary sewer pipeline where the alignment leading away from a vault was not readily apparent (i.e. did not obviously connect with an adjacent manhole or catch basin). A probe transmitting a specific radio frequency was inserted into the pipe as far as possible. The alignment of the pipeline was triangulated above ground by a radio frequency receiver. A similar technique was used for locating metal water and gas pipes, and electrical conduits. Other metallic pipes were located using a magnetometer and electromagnetic induction techniques. The location of identified subsurface pipelines and conduits were marked on the groundsurface with spray paint.

The horizontal and vertical locations of all marked utilities, except for electric lines, were surveyed by A-N West, Inc., a licensed land surveyor. In addition to marked utilities, A-N West surveyed all existing monitoring wells including the new monitoring wells, borings installed during this study, and any visible above-ground utility appurtenances. All elevations were referenced to two City of Oakland monuments with known elevations located within the Embarcadero right-of-way. The maps presented in this report are based on the A-N West survey.

C. UST Locating

In addition to subsurface utility mapping, C.U. Surveys screened suspected UST areas using an electro-magnetic induction sweep accompanied by a magnetometer exploration. The suspected UST areas screened include:

- A gasoline UST located near an oil house (H-204) in the Bay Cities/East Bay Oil Company area,
- A gasoline engine operated by the Pacific Lumber Company, located northeast of former Building H-227, and
- A 10,000 gallon UST located northwest of former Building H-227.
- An unidentifiable metallic apparatus measuring approximately 27 feet long by 8 feet wide was identified northwest of former Building H-227. A-N West surveyed the horizontal and vertical extent of this anomaly.

USTs may also have existed west of former Building H-203 and south of Building H-229. Debris and steel stockpiles in the vicinity of these two building prevented C.U. Surveys from performing a sweep for potential USTs. The debris and steel stockpiles need to be relocated prior to screening for USTs at these areas.

D. Petroleum Based Liquid Removal From Manhole

During the utility locating phase of the investigation, up to 17 inches of petroleum-based liquid was observed inside a manhole located southwest of former Building H-227, as shown on the Site Plan. The manhole may be connected to an old concrete storm drain line that extends along Eighth Avenue. According to PORT maps, this line is referred to as the "Old Cannery

Line". In the area of the KOT pipeline leak, C.U. Surveys observed that the Cannery Line was blocked with bricks and concrete. This confirms Uribes' field notes which indicated that a storm drain line was blocked following the 1992 release.

C.U. Surveys observed two 4-inch steel pipes entering the manhole, near the top of the manhole collar. One pipe entered the manhole vault from the north and the other pipe entered from the southwest. The extent or use of these lines has not been determined

Dillard Environmental Services, a certified hazardous materials transporter, was retained by the PORT to remove the petroleum based liquids and water from the manhole. Dillard removed approximately 770 gallons of petroleum based liquid and water on May 13, 1996. During removal, the level of liquid within the manhole remained essentially unchanged suggesting inflow. An employee of Dillard probed and located two additional pipes entering and/or exiting the manhole below the liquid surface. The additional pipes appear to be oriented in directions similar to the orientation of the Cannery line as shown on PORT maps. These additional pipes cannot be probed or located until the manhole is purged of fluid below the level at which these additional pipes enter/exit the manhole. Preliminary estimates indicate that there may be at least 10,000 gallons of the liquid in the manhole and Cannery Line, if, in fact, they are connected. This estimate does not take into consideration additional lines which also may tie-in to the manhole.

The petroleum based liquid and water removed from the manhole was pumped into drums which are being stored on site, pending the results of analytical testing. To evaluate appropriate disposal options, samples of the free floating petroleum based liquid and underlying

water were obtained and analyzed for total volatile hydrocarbons (TVH), total extractable hydrocarbons (TEH), heavy metals, volatile organics, semi-volatile organics, PCBs, bottom sediment and water, and boiling point. The sample chromatographs appear to match the standard laboratory chromatograph for diesel. The analytical test reports are presented in Appendix C. Analytical test results are presented in Tables 2 through 5.

E. Monitoring Well Installation

Monitoring wells were installed previously by others in the area of the 1992 KOT pipeline and in the area of the former KOT maintenance UST. To supplement groundwater elevation data and hence, further evaluate the groundwater flow direction, three additional monitoring wells (SCIMW-1 through SCIMW-3) were installed by SCI within the study area. Well locations are shown on Plate 2. Prior to well installation, a drilling application permit was submitted to and approved by the Alameda County Flood Control and Water Conservation District, Zone 7. A copy of the permit and field protocols for drilling, sampling, and well installation are presented in Appendix E. SCI's field engineer observed drilling operations, prepared detailed logs of the test borings and obtained undisturbed samples of the soils encountered. The test boring logs and well completion details are presented on Plates 8 through 26. Soils are classified in accordance with the Unified Soil Classification System described on Plate 27.

Following well installation and development, groundwater elevations were measured in the new wells and existing wells MW-1 through MW-7. Initially, the wells were checked for free floating product using a steel tape coated with petroleum product sensitive paste. The depth to water below the top of casing (TOC) was then measured in the wells using an electric well sounder.

A summary of groundwater elevation data is presented in Table 6. Well development and groundwater measurement forms are presented in Appendix E.

F. Soil and Groundwater Sampling/Analytical Testing

Subsurface conditions were explored by drilling 31 test borings at the locations shown on the Site Plan. The locations were selected to provide preliminary coverage of potential areas of impact and to supplement existing data. Drilling and sampling protocol are described in Appendix D.

Our field engineer observed drilling operations, prepared detailed logs of the test borings, and obtained undisturbed samples of the soils encountered. Groundwater samples were obtained through temporary wells placed into the test borings. The temporary wells were removed following collection of groundwater samples and the resulting boreholes were backfilled with cement grout.

Selected soil and grab groundwater samples collected from the temporary borings and groundwater samples collected from the 10 existing monitoring wells (MW-1 through MW-7 and SCIMW-1 through SCIMW-3). These samples were transported under Chain-of-Custody to Curtis & Tompkins, Ltd., an analytical laboratory certified by the California Department of Toxic Substances Control (DTSC). All samples were analyzed for petroleum hydrocarbons. Selected samples were further analyzed for other potential contaminants of concern. The testing program is presented on Table 1. Chain-of-Custody forms and analytical test reports are presented in Appendix F. Analytical data is presented in Tables 2 through 6. Analytical data is summarized on Plates 3 through 6.

V SUBSURFACE CONDITIONS

The study area is blanketed by miscellaneous, non-homogeneous fill. The fill is typically 5 feet thick, but measured more than 8 feet thick in areas toward the Clinton Basin and concrete marginal wharf to the south. The fill consists of a mixture of silty and sandy clays, clayey and sandy silts, sandy and clayey gravels, and miscellaneous debris including brick, wood and rock fragments.

Bay sediments underlie the miscellaneous fill. The bay sediments consist of soft, highly organic clayey silt, interlayered with thin lenses of sand. The sediments are soft and compressible and extend to the depth drilled, about 15 feet.

Groundwater was encountered in the temporary well casings at depths ranging from 0.6 to 10.3 feet below ground surface (bgs) up to 24 hours after drilling. Groundwater depths within the monitoring wells ranged from 5 to 7 feet bgs in May 1996. These depths correlate to 4 to 7.5 feet above the Port of Oakland Datum (MSL-3.2 feet).

Groundwater elevations were found approximately 2 to 3 feet higher near the center of the site as compared to those measured closer to Clinton Basin and the estuary. Hence, groundwater appears to be flowing toward the estuary, near the southern portion of the site and toward Clinton Basin along the west of the site.

The approximate groundwater elevation contours for May 1996 are presented on Plate 5. The elevated interior groundwater levels suggest that groundwater recharge, may occur. This may be due to surface infiltration at unpaved areas and/or exfiltration from storm and sanitary sewers in

the area. Additional groundwater monitoring wells need to be installed along the east side of the site to complete the evaluation of groundwater flow directions.

VI FINDINGS AND CONCLUSIONS

On a preliminary basis it appears that soil and groundwater in all areas investigated during this study have been impacted by petroleum hydrocarbons, as well as other chemicals of concern. Our conclusions regarding the significance of the investigation findings to date are as follows.

A. General Site Observations

- The predominant petroleum hydrocarbons identified at the site are within the diesel and motor oil range. Petroleum hydrocarbons were found in shallow soils and groundwater in all suspected areas of concern.

- Groundwater samples from selectively tested, temporary well points and monitoring wells also contain several heavy metals and 2-Butanone (aka MEK).

- Numerous subsurface utilities exist throughout impacted soil and groundwater areas. The utility pipelines extend both above as well as below groundwater levels rendering them potential conduits for contaminant migration. The reason for, and in some cases the extent of utility, pipelines are currently unknown.

- During site activities other areas of concern were identified due to oil stained soils near Lakeside Metals (H-314) and Harbor Forklift (H-318). Impacts to soil and groundwater in these areas have not been invested to date.

B. **Area of Former KOT Maintenance Facilities (H-213)**

- Floating petroleum product and/or sheen were observed in the wells and temporary well points in the vicinity of the documented source/release area adjacent to the former building H-213. Floating product and water samples contain diesel, gasoline and motor oil range petroleum hydrocarbons, benzene, several heavy metals, MEK, naphthalene, 2-methylnapthalene and phenanthrene.

- The extent of the floating product plume and impacts to groundwater have not been defined. However, the extent of contamination is believed to be far greater than an area radially bounding the source/release area due to migration along preferential pathways (utilities) as demonstrated by previous investigations. Hence, substantial impacts are likely exist to a significant, yet currently undefined, portion of the Ninth Avenue Terminal area.

- The main storm drain and the old "cannery" outfall pipelines extend adjacent to the source/release area. Storm drain and other utility laterals extend through impacted groundwater and the floating product plume. The full extent of utilities in this area has not been defined.

C. **Area of the Former American Bitumuls and Port Petroleum Bulk Fuel Facilities**

- Floating petroleum product and/or sheen were observed in well points and monitoring well MW-3 in the previous AST areas. The floating product and water samples contain diesel and motor oil range petroleum hydrocarbons, several heavy metals, MEK, 1,1-dichlorobenzene, pentachlorophenol, 2-methylnapthalene, phenanthrene, and Aroclor 1260.

- A suspected storm drain manhole, located immediately south of the former bulk fuel facilities, contains several inches of floating petroleum product and water. The floating product and water contain diesel, gasoline and motor oil range hydrocarbons, ethylbenzene, xylenes, several heavy metals, 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane, trichloroethene, 2 methylnapthalene and Aroclor 1260.

- The extent of the floating product plume and impacts to groundwater have not been defined.

- The full extent of utilities in this area have not been defined.

D. Former East Bay Oil/Bay City Oil Company Area

- Gasoline, diesel and motor oil range hydrocarbons, benzene, ethylbenzene, toluene and xylenes, were detected in groundwater, from a temporary well point, situated near the former location of a UST in this area. Diesel and motor oil range hydrocarbons, and heavy metals were detected in groundwater from well MW-2 situated near the former AST area and along the current Clinton Basin shoreline.

- The extent of impacts to groundwater have not been defined in either of these areas.

E. Other Fuel Tank Areas

- Diesel and motor oil range hydrocarbons were detected during this study and previous investigations in groundwater near the former UST at the current KOT maintenance area (H-107). The extent of impacts to groundwater has not been defined in either area.

- A possible UST was identified in the area where a UST was shown to exist on Port maps in the yard area northeast of former building H-227 and adjacent to the former Port Petroleum area. Groundwater from a temporary well point contains gasoline, diesel and motor oil range hydrocarbons and MEK. The extent of impacts to groundwater has not been defined.

- A possible UST was identified in the area where two USTs were shown to exist on Port maps adjacent to a former KOT maintenance facility (H-229). Groundwater from a temporary well point contains gasoline, diesel and motor oil range hydrocarbons, ethylbenzene and xylenes. The extent of impacts to groundwater has not been defined.

- A possible UST was identified in the area where two USTs were shown to exist on Port maps near the current KOT offices. It is currently unclear as to whether the tanks extend below the building. Groundwater from a temporary well point contains diesel and motor oil range hydrocarbons, heavy metals, and MEK. The extent of impacts to groundwater has not been defined.

VII RECOMMENDATIONS

This report should be submitted to the Alameda County Environmental Health Services. In addition, we recommend the following:

- The floating product within the suspected storm drain manhole should be removed to facilitate the investigation of utilities in the area.
- Additional research should be conducted of the areas of newly discovered contamination to 1) identify potentially responsible parties, 2) determine the extent of contamination and 3) determine impacts to other areas.
- Due to extensive and substantial soil and groundwater contamination, Port representatives and SCI should meet with the County to discuss the findings to date and to agree upon the scope of effective subsequent investigations.
- Work plans should be prepared which outline supplemental investigations, as necessary, pursuant to negotiations with the County to complete investigation of the site prior to preparation of a corrective action plan. To do otherwise could lead to unnecessary expenditures.

VIII LIMITATIONS

This study was intended to provide a preliminary means of evaluating soil and groundwater contamination that exists beneath the site, based on limited subsurface investigation and analytical testing. Contamination may exist in other areas not investigated by SCI. Environmental sampling studies, such as presented herein, are by nature non-comprehensive and subject to limitations including those presented herein.

SCI has performed this environmental assessment in accordance with generally accepted standards of care which exist in northern California at the time of this study. The definition and evaluation of environmental conditions are difficult and inexact. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface and/or historic conditions applicable to the site. In addition, the conclusions made herein reflect site conditions at the time of the investigation. These conditions may change with time, and as such, the conclusions may also change.

The conclusions and opinions presented herein may also be affected by rapid changes in the field of environmental engineering and the laws governing hazardous waste. The reader is advised to consult with SCI prior to relying upon the information provided.

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Appendix:

A	List of References
B	C.U. Surveys Report
C	Analytical Test Reports and Chain-of-Custody Forms for Manhole Samples
D	Field Investigation Protocols
E	Well Development and Groundwater Measurement Forms. Permits
F	Analytical Test Reports and Chain-of-Custody Forms for SCI's Soil and Groundwater Investigation

Distribution:

16 copy:	Mr. Jonathan Redding, Esq. Fitzgerald, Abbott & Beardsley
1 copy:	Ms. Michele Heffes, Esq. Deputy Port Attorney
1 copy:	Mr. Jeff Rubin Port of Oakland - Environmental Section
1 copy:	Mr. Barney Chan Alameda County Health Care Services Agency
1 copy:	Mr. Rich Hiett Regional Water Quality Control Board

TABLE 1
ANALYTICAL TESTING PROGRAM
EIGHTH AVENUE STUDY AREA

SITE REF AREA	AREA*	SAMPLE DESIGNATION	Oil & Grease	TVH	TEH	BTEX	VOCs	SVOCs	PCBs	Heavy Metals
C	H-207	SCIMW-6	X	X	X		X	X	X	X
E	H-211/H-232 Lateral Loop	SCIMW-1	X	X	X		X	X	X	X
F	KOT H-213 AST Pipe Leak	MW-6	X	X	X		X	X	X	X
G	Current KOT AST	SCI-35@3.5'		X	X	X				
		SCI-35@8'		X	X	X				
		SCI-35	X	X	X	X	X			
H	H-232 Oil Tanks	SCI-36@3.5'	X		X	X				
		SCI-36	X		X	X				
		SCI-37@2.5'	X		X	X				
		SCI-37	X		X	X				
I	Amer. Bitumuls/Port Petroleum	SCIMW-8	X	X	X		X	X	X	X
		SCIMW-14	X	X	X		X	X	X	X
		SCIMW-15	X	X	X		X	X	X	X
		SCIMW-3	X	X	X		X	X	X	X
		XB (SCIMW-3 Dup.)					X			
J	Amer. Bitumuls/Port Petroleum	SCI-38@3'	X	X	X		X	X	X	X
		SCI-38	X	X	X		X	X	X	X
		SCI-39	X	X	X		X	X	X	X
		SCIMW-9@6'	X		X					
		SCIMW-9	X	X	X		X	X	X	X
		SCIMW-10@3'	X	X	X		X	X	X	X
		SCIMW-10	X	X	X		X	X	X	X
		SCIMW-13@4.5'	X		X					
		SCIMW-13	X	X	X		X	X	X	X
L	Storm Drains	SCIMW-4	X	X	X		X	X	X	X
		SCIMW-18	X	X	X		X	X	X	X

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** = SCI-34@3.5' not analyzed for O&G - not enough sample

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EIGHTH AVENUE STUDY AREA

SITE REF AREA	AREA*	SAMPLE DESIGNATION	Oil & Grease	TVH	TEH	BTEX	VOCs	SVOCs	PCBs	Heavy Metals
M	KOT H-107 UST Excav.	SCIMW-5	X	X	X		X	X	X	X
		MW-7	X	X	X		X	X	X	X
N	Bay City/East Bay Oil Co.	SCIMW-11	X	X	X		X	X	X	X
		SCIMW-2	X	X	X		X	X	X	X
O	H-203 Truck Repair	SCIMW-12	X	X	X		X	X	X	X
P/Q	Chemical Warehouse/	SCIMW-7@6'	X		X					
	Lakeside Metals	SCIMW-7	X	X	X		X	X	X	X
Q	Lakeside Metals	SCI-32@5'	X	X	X		X	X	X	X
		SCI-32	X	X	X		X	X	X	X
		SCI-33	X	X	X		X	X	X	X
		SCI-34@3.5'	**	X	X		X	X	X	X
		SCI-34	X	X	X		X	X	X	X
		SCIMW-19	X	X	X		X	X	X	X
		SCIMW-20	X	X	X		X	X	X	X
R	H-318 Forklift Repair	SCIMW-16	X	X	X		X	X	X	X
		XA (SCIMW-16 Dup.)					X			
		SCIMW-17	X	X	X		X	X	X	X

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** = SCI-34@3.5' not analyzed for O&G - not enough sample

TABLE 2
PETROLEUM HYDROCARBON, BTEX, VOC, AND PCB CONCENTRATIONS IN SOIL
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	OIL & GREASE (mg/kg)	TVH as GAS (mg/kg)	TEH as DIESEL (mg/kg)	TEH as MOTOR OIL (mg/kg)	TRPH (mg/kg)	BENZENE (mg/kg)	ETHYL-BENZENE (mg/kg)	TOLUENE (mg/kg)	TOTAL XYLENES (mg/kg)	ACETONE (mg/kg)	OTHER 8240s (mg/kg)	PCBs (mg/kg)	FLASH POINT (deg. C)
9AV-B1-4	Uribe	Boring B-1	O	H-203 Truck Repair	11/20/92	--	--	<1	--	60	--	--	--	--	--	--	--	--
9AV-B1-7	Uribe	Boring B-1	O	H-203 Truck Repair	11/20/92	--	--	<1	--	110	--	--	--	--	--	--	--	--
9AV-B2-4	Uribe	Boring B-2	L	Storm Drains	11/19/92	--	--	<10	--	210	--	--	--	--	--	--	--	--
9AV-B2-7	Uribe	Boring B-2	L	Storm Drains	11/19/92	--	--	<1	--	<30	--	--	--	--	--	--	--	--
9AV-B3-5	Uribe	Boring B-3	L	Storm Drains	11/19/92	--	--	<2	--	30	--	--	--	--	--	--	--	--
9AV-B3-7	Uribe	Boring B-3	L	Storm Drains	11/19/92	--	--	<2	--	100	--	--	--	--	--	--	--	--
9AV-B4-4	Uribe	Boring B-4	L	Storm Drains	11/19/92	--	--	<5	--	320	--	--	--	--	--	--	--	--
9AV-B4-7	Uribe	Boring B-4	L	Storm Drains	11/19/92	--	--	<1h	--	<30	--	--	--	--	--	--	--	--
9AV-B5-4	Uribe	Boring B-5	L	Storm Drains	11/20/92	--	--	<5	--	320	--	--	--	--	--	--	--	--
9AV-B5-7	Uribe	Boring B-5	L	Storm Drains	11/20/92	--	--	<5	--	<30	--	--	--	--	--	--	--	--
9AV-B6-4	Uribe	Boring B-6	L	Storm Drains	11/20/92	--	--	<300	--	640	--	--	--	--	--	--	--	--
9AV-B6-7	Uribe	Boring B-6	L	Storm Drains	11/20/92	--	--	<5	--	30	--	--	--	--	0.030	ND	--	--
9AV-B10-4	Uribe	Boring B-7	L	Storm Drains	11/19/92	--	--	<5	--	50	--	--	--	--	--	--	--	--
9AV-B10-10	Uribe	Boring B-7	L	Storm Drains	11/19/92	--	--	<1h	--	50	--	--	--	--	0.040	ND	--	--
9AV-B13-1-4.0	Uribe	Boring B-13	L	Storm Drains	3/1/93	--	--	2	--	--	0.006	<0.005	0.009	0.006	--	--	--	--
9AV-B13-2-7.5	Uribe	Boring B-13	L	Storm Drains	3/1/93	--	--	81	--	--	<0.005	0.006	0.008	0.037	--	--	--	--
9AV-B14-1-3.5	Uribe	Boring B-14	L	Storm Drains	3/1/93	--	--	<1	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B14-2-6.5	Uribe	Boring B-14	L	Storm Drains	3/1/93	--	--	<10	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B14-3-9.5	Uribe	Boring B-14	L	Storm Drains	3/1/93	--	--	<6	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B15-1-2.5	Uribe	Boring B-15	F	H-213 KOT AST Pipe Leak	3/1/93	--	--	<3	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B15-2-5.0	Uribe	Boring B-15	F	H-213 KOT AST Pipe Leak	3/1/93	--	--	<20	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B15-3-9.5	Uribe	Boring B-15	F	H-213 KOT AST Pipe Leak	3/1/93	--	--	39h	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B16-1-3.5	Uribe	Boring B-16	F	H-213 KOT AST Pipe Leak	3/1/93	--	--	<1	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B16-2-7.0	Uribe	Boring B-16	F	H-213 KOT AST Pipe Leak	3/1/93	--	--	92	--	--	<0.030	<0.030	<0.030	<0.030	--	--	--	--
9AV-B16-3-7.5	Uribe	Boring B-16	F	H-213 KOT AST Pipe Leak	3/1/93	--	--	260	--	--	<0.030	0.030	<0.030	0.030	--	--	--	--
9AV-B16-4-9.5	Uribe	Boring B-16	F	H-213 KOT AST Pipe Leak	3/1/93	--	--	49	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--

Prev consultant results

* = Areas are for geographic reference only and do not imply a source of contamination.
TVH = Total Volatile Hydrocarbons
TEH = Total Extractable Hydrocarbons
TRPH = Total Recoverable Petroleum Hydrocarbons
PCBs = Polychlorinated Biphenyls

mg/kg = milligrams per kilogram or parts per million
<50 = Compound not detected at or above stated reporting limit
-- = Not tested
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y = Sample exhibits fuel pattern which does not resemble standard
l = lighter hydrocarbons than indicated standard

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+ = Result indicates Aroclor-1260 only
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EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	OIL & GREASE (mg/kg)	TVH as GAS (mg/kg)	TEH as DIESEL (mg/kg)	TEH as MOTOR OIL (mg/kg)	TRPH (mg/kg)	BENZENE (mg/kg)	ETHYL-BENZENE (mg/kg)	TOLUENE (mg/kg)	TOTAL XYLENES (mg/kg)	ACETONE (mg/kg)	OTHER 8240s (mg/kg)	PCBs (mg/kg)	FLASH POINT (deg. C)
9AV-B17-1-3.5	Uribe	Boring B-17	F	H-213 KOT AST Pipe Leak	3/2/93	--	--	<1	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B17-2-7.0	Uribe	Boring B-17	F	H-213 KOT AST Pipe Leak	3/2/93	--	--	**20h**	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B17-3-9.5	Uribe	Boring B-17	F	H-213 KOT AST Pipe Leak	3/3/93	--	--	**35h**	--	--	--	--	--	--	--	--	--	--
9AV-B18-1-6.5	Uribe	Boring B-18	E	H-211/H-232 Lateral Loop	3/2/93	--	--	<1	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B18-2-9.5	Uribe	Boring B-18	E	H-211/H-232 Lateral Loop	3/2/93	--	--	**34h**	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B19-1-0.4	Uribe	Boring B-19	E	H-211/H-232 Lateral Loop	3/2/93	--	--	**350h**	--	--	--	--	--	--	--	--	--	--
9AV-B19-2-7.0	Uribe	Boring B-19	E	H-211/H-232 Lateral Loop	3/2/93	--	--	**19**	--	--	--	--	--	--	--	--	--	--
9AV-B19-3-9.5	Uribe	Boring B-19	E	H-211/H-232 Lateral Loop	3/2/93	--	--	**60**	--	--	--	--	--	--	--	--	--	--
9AV-B20-1-3.5	Uribe	Boring B-20	L	Storm Drains	3/1/93	--	--	**28h**	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B20-2-6.5	Uribe	Boring B-20	L	Storm Drains	3/1/93	--	--	**55h**	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B20-3-9.5	Uribe	Boring B-20	L	Storm Drains	3/1/93	--	--	**41h**	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B21-1-3.5	Uribe	Boring B-21	O	H-203 Truck Repair	3/3/93	--	--	<3	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B21-2-6.5	Uribe	Boring B-21	O	H-203 Truck Repair	3/3/93	--	--	<20	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-B21-3-9.5	Uribe	Boring B-21	O	H-203 Truck Repair	3/3/93	--	--	<40	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
BH-1 at 20ft bgs	Clayton	Soil boring	M	KOT H-107 UST Excav.	3/29/95	--	<0.3	**24**	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
BH-2 at 4ft bgs	Clayton	Soil boring	M	KOT H-107 UST Excav.	3/29/95	--	**0.4**	**43**	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
96-203-1	Uribe	Excav NW of Clinton Basin	M	Storm Drains	11/9/92	--	--	**1,400**	--	--	--	--	--	--	--	--	--	--
9AV-X1-1	Uribe	Excavation at surface	F	KOT H-213 Disp. Pipe Excav.	2/12/93	--	--	**36,000**	--	--	**2.00**	**4.40**	**12.0**	**19.2**	--	--	--	--
9AV-X1-2	Uribe	Excavation at 1-1.5	F	KOT H-213 Disp. Pipe Excav.	2/12/93	--	--	**3,800**	--	--	**0.780**	**1.60**	**5.70**	**14.7**	--	--	--	--
9AV-X1-3	Uribe	Excavation at 0.5	F	KOT H-213 Disp. Pipe Excav.	2/12/93	--	--	**600**	--	--	**0.930**	**3.10**	**8.80**	**26.9**	--	--	--	--
9AV-X1-4	Uribe	Excavation at 1.5-2.5	F	KOT H-213 Disp. Pipe Excav.	2/12/93	--	--	**130,000**	--	--	**9.80**	**30.0**	**81.0**	**179**	--	--	--	--
9AV-X1-5	Uribe	Excavation at 3.0	F	KOT H-213 Disp. Pipe Excav.	2/12/93	--	--	**48,000**	--	--	**1.80**	**4.40**	**14.0**	**20.0**	--	--	--	--
9AV-X1-1	Uribe	Trench 1 at 5.0	L	Storm Drains	3/2/93	--	--	**1,000h**	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
9AV-X1-2	Uribe	Trench 1 at 5.0	L	Storm Drains	3/2/93	--	--	**890h**	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--

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9AV-X-3	Uribe	Trench 2 at 4.0	F	H-213 KOT AST Pipe Leak	3/3/93	--	--	7,100	--	--	0.063	0.300	0.360	1.24	--	--	--	--
9AV-X-6	Uribe	Trench 2 at 3.5	F	H-213 KOT AST Pipe Leak	3/3/93	--	--	7,600	--	--	0.100	0.420	0.690	1.98	--	--	--	--
9AV-X-7	Uribe	Trench 2 at 3.5	F	H-213 KOT AST Pipe Leak	3/3/93	--	--	26,000	--	--	0.330	1.10	1.60	4.60	--	--	--	--
9AV-X-4	Uribe	Trench 3 at 3.5	F	H-213 KOT AST Pipe Leak	3/3/93	--	--	9,500	--	--	0.490	2.20	4.50	9.60	--	--	--	--
9AV-X-5	Uribe	Trench 3 at 4.0	F	H-213 KOT AST Pipe Leak	3/3/93	--	--	3,800	--	--	0.150	0.450	0.660	1.70	--	--	--	--
9AV-X-8	Uribe	Trench 3 at 3.5	F	H-213 KOT AST Pipe Leak	3/5/93	--	--	100,000	--	--	4.80	16.0	42.0	68.0	--	--	--	--
9AV-X-9	Uribe	Trench 4 at 2.5	L	Storm Drains	3/5/93	--	--	18	--	--	<0.005	<0.005	0.007	0.005	--	--	--	--
9AV-X-10	Uribe	Trench 5A at 6.0	L	Storm Drains	3/5/93	--	--	<90	--	--	0.033	<0.005	0.010	0.007	--	--	--	--
9AV-X5-1	Uribe	Trench 5B at 7.0	L	Storm Drains	3/11/93	--	--	1,800	--	--	0.006	0.007	<0.005	0.018	--	--	--	--
9AV-X5-2	Uribe	Trench 5B at 8.0	L	Storm Drains	3/11/93	--	--	280	--	--	0.018	<0.005	0.006	<0.005	--	--	--	--
9AV-X5-6	Uribe	Trench 5B at 9.0	L	Storm Drains	3/12/93	--	--	440	--	--	0.010	<0.005	0.006	<0.005	--	--	--	--
9AV-X6-1	Uribe	Trench 6 at 2.0	F	H-213 KOT AST Pipe Leak	3/12/93	--	--	50,000	--	--	0.002	0.004	0.010	0.013	--	--	--	--
9AV-X6-3	Uribe	Trench 6 at 3.0	F	H-213 KOT AST Pipe Leak	3/12/93	--	--	22,000	--	--	0.0004	0.0008	0.0015	0.0022	--	--	--	--
TE-1	ERM-West	Tank excavation at 7.0	M	KOT H-107 UST Excav.	10/12/94	--	21	160	--	--	<0.005	0.140	<0.005	<0.005	--	--	--	--
TE-2	ERM-West	Tank excavation at 7.0	M	KOT H-107 UST Excav.	10/12/94	--	25	120	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
TE-3	ERM-West	Tank excavation	M	KOT H-107 UST Excav.	10/15/94	--	550	44,000	--	--	0.320	<0.060	<0.060	<0.080	--	--	--	--
TE-4	ERM-West	Tank excavation	M	KOT H-107 UST Excav.	10/15/94	--	43	550	--	--	<0.040	<0.030	<0.030	<0.040	--	--	--	--
TE-5	ERM-West	Tank excavation	M	KOT H-107 UST Excav.	10/15/94	--	110	6,900	--	--	<0.080	<0.060	<0.060	<0.080	--	--	--	--
TE-6	ERM-West	Tank excavation	M	KOT H-107 UST Excav.	10/17/94	--	5,600h	320	--	--	<0.010	0.010	<0.010	0.020	--	--	--	--
SP-1	ERM-West	Stockpile	M	KOT H-107 UST Excav.	10/12/94	--	590	--	--	6,700	<0.005	4.60	<0.005	8.60	<10	ND	--	>100
MW-5 at 5ft bgs	Clayton	Soil boring	F	H-213 KOT AST Pipe Leak	3/30/95	--	6	180	--	--	0.020	0.020	0.006	0.065	--	--	--	--
MW-6 at 5ft bgs	Clayton	Soil boring	F	H-213 KOT AST Pipe Leak	3/30/95	--	240	1,600	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
MW-7 at 5ft bgs	Clayton	Soil boring	M	KOT H-107 UST Excav.	3/29/95	--	<0.3	41	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCIMW-1@4.5	SCI	Soil boring	E	H-211/H-232 Lateral Loop	5/14/96	56	<1	19yh	51y	--	<0.005	<0.005	0.014	<0.005	--	--	--	--

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TVH = Total Volatile Hydrocarbons
TEH = Total Extractable Hydrocarbons
TRPH = Total Recoverable Petroleum Hydrocarbons
PCBs = Polychlorinated Biphenyls

mg/kg = milligrams per kilogram or parts per million
<50 = Compound not detected at or above stated reporting limit
-- = Not tested
ND = Not detected
y = Sample exhibits fuel pattern which does not resemble standard
l = lighter hydrocarbons than indicated standard

h = Heavier hydrocarbons than indicated standard
z = Sample exhibits unknown single peak or peaks
J = estimated value
+ = Result indicates Aroclor-1260 only
† = Results not reported due to lab error in sample preparation
** = Possibly contaminated due to laboratory extraction compound

TABLE 2
PETROLEUM HYDROCARBON, BTEX, VOC, AND PCB CONCENTRATIONS IN SOIL
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	OIL & GREASE (mg/kg)	TVH as GAS (mg/kg)	TEH as DIESEL (mg/kg)	TEH as MOTOR OIL (mg/kg)	TRPH (mg/kg)	BENZENE (mg/kg)	ETHYL-BENZENE (mg/kg)	TOLUENE (mg/kg)	TOTAL XYLENES (mg/kg)	ACETONE (mg/kg)	OTHER 8240s (mg/kg)	PCBs (mg/kg)	FLASH POINT (deg. C)
SCIMW-2@4.5	SCI	Soil boring	N	Bay City/ East Bay Oil Co.	5/14/96	680	19y	40yh	160yh	--	<0.005	<0.005	<0.005	0.860	--	--	--	--
SCIMW-3@4.5	SCI	Soil boring	I	Amer Bitumuls/ Port Petroleum	5/14/96	64	--	3.4yh	8.0yh	--	<0.005	<0.005	<0.005	<0.005	0.028**	ND	ND	--
SCIMW-7@6	SCI	Soil boring	P/Q	H-215/Lakeside Metals	8/20/96	840	--	2,900yh	1,400yl	--	--	--	--	--	--	--	--	--
SCIMW-9@6	SCI	Soil boring	J	Amer Bitumuls/ Port Petroleum	8/21/96	140	--	11yh	110	--	--	--	--	--	--	--	--	--
SCIMW-10@3	SCI	Soil boring	J	Amer Bitumuls/ Port Petroleum	8/21/96	<50	<1	100yh	810	--	<0.005	<0.005	<0.005	<0.005	0.021**	ND	ND	--
SCIMW-13@4.5	SCI	Soil boring	J	Amer Bitumuls/ Port Petroleum	8/22/96	76	--	2.9yh	11	--	--	--	--	--	--	--	--	--
SCI-1@3.0	SCI	Soil boring	J	Amer Bitumuls/ Port Petroleum	5/21/96	5,900	--	720yh	2,300	--	--	--	--	--	--	--	--	--
SCI-1@6.0	SCI	Soil boring	J	Amer Bitumuls/ Port Petroleum	5/21/96	17,000	--	5,500yh	17,000	--	--	--	--	--	--	--	--	--
SCI-2@3.5	SCI	Soil boring	I	Amer Bitumuls/ Port Petroleum	5/21/96	4,000	--	170yh	5,400yh	--	--	--	--	--	--	--	--	--
SCI-2@6.0	SCI	Soil boring	I	Amer Bitumuls/ Port Petroleum	5/21/96	6,000	--	45yh	750h	--	--	--	--	--	--	--	--	--
SCI-3@6.0	SCI	Soil boring	J	Amer Bitumuls/ Port Petroleum	5/21/96	570	--	1,300yhl	4,900lh	--	--	--	--	--	--	--	--	--
SCI-4@4.0	SCI	Soil boring	I	Amer Bitumuls/ Port Petroleum	5/21/96	84	--	7.4yh	37y	--	--	--	--	--	--	--	--	--
SCI-5@3.5	SCI	Soil boring	A/K	Pac. Lmbr. Well/ H-227 Yard UST	5/21/96	<50	<1	47yh	71y	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-6@3.5	SCI	Soil boring	J	Amer Bitumuls/ Port Petroleum	5/21/96	--	9.2y	2,000h	1,100l	--	<0.005	0.022	<0.005	0.020	--	--	--	--
SCI-7@6.0	SCI	Soil boring	L	Storm Drains	5/22/96	--	--	15yh	100yh	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-8@5.5	SCI	Soil boring	L	Storm Drains	5/22/96	--	--	7.4yh	120yh	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-9@5.5	SCI	Soil boring	L	Storm Drains	5/22/96	--	--	<1	<5	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-10@5.0	SCI	Soil boring	L	Storm Drains	5/22/96	--	--	28yh	370yh	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-11@3.5	SCI	Soil boring	O	H-203 Truck Repair	5/22/96	--	--	<1	<5	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-12@6.5	SCI	Soil boring	N	Bay City/ East Bay Oil Co.	5/22/96	--	800	330ylh	940yh	--	12.0	13.0	34.0	48.1	--	--	--	--
SCI-13@4.5	SCI	Soil boring	E	H-211/H-232 Lateral Loop	5/23/96	630	<1	97yh	2,100yh	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-14@3.5	SCI	Soil boring	M	Storm Drains	5/23/96	920	<1	3,800h	10,000ylh	--	--	--	--	--	--	--	--	--
SCI-14@6.0	SCI	Soil boring	M	Storm Drains	5/23/96	3,100	<1	32yh	510yh	--	--	--	--	--	--	--	--	--
SCI-15@3.0	SCI	Soil boring	M	Storm Drains	5/23/96	400	<1	10yh	540yh	--	--	--	--	--	--	--	--	--

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mg/kg = milligrams per kilogram or parts per million
<50 = Compound not detected at or above stated reporting limit
-- = Not tested
ND = Not detected
y = Sample exhibits fuel pattern which does not resemble standard
l = lighter hydrocarbons than indicated standard

h = Heavier hydrocarbons than indicated standard
z = Sample exhibits unknown single peak or peaks
J = estimated value
+ = Result indicates Aroclor-1260 only
† = Results not reported due to lab error in sample preparation
** = Possibly contaminated due to laboratory extraction compound

TABLE 2
PETROLEUM HYDROCARBON, BTEX, VOC. AND PCB CONCENTRATIONS IN SOIL
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	OIL & GREASE (mg/kg)	TVH as GAS (mg/kg)	TEH as DIESEL (mg/kg)	TEH as MOTOR OIL (mg/kg)	TRPH (mg/kg)	BENZENE (mg/kg)	ETHYL-BENZENE (mg/kg)	TOLUENE (mg/kg)	TOTAL XYLENES (mg/kg)	ACETONE (mg/kg)	OTHER 8240s (mg/kg)	PCBs (mg/kg)	FLASH POINT (deg. C)
SCI-16@2.5	SCI	Soil boring	L	Storm Drains	5/23/96	570	<1	40yh	1,700yh	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-17@3.5	SCI	Soil boring	M	Outfall East of H-107	5/24/96	72	<1	610yhz	3,900yh	--	--	--	--	--	--	--	--	--
SCI-18@3.5	SCI	Soil boring	M	Storm Drains	5/24/96	1,400	<1	780yh	37,000yh	--	--	--	--	--	--	--	--	--
SCI-19@3.5	SCI	Soil boring	L	Storm Drains	5/24/96	<50	<1	5,600	<200	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-20@3.5	SCI	Soil boring	H	H-232 Oil Tanks	5/24/96	<50	--	<1	<5	--	--	--	--	--	--	--	ND	--
SCI-20@6.5	SCI	Soil boring	H	H-232 Oil Tanks	5/24/96	52	--	240yh	210yh	--	--	--	--	--	--	--	--	--
SCI-22@3.5	SCI	Soil boring	F	H-213 KOT AST Pipe Leak	5/31/96	--	<1	1,000h	810yh	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-23@6.5	SCI	Soil boring	F	H-213 KOT AST Pipe Leak	5/31/96	--	<1	790yh	4,800yh	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-24@4.5	SCI	Soil boring	F	H-213 KOT AST Pipe Leak	5/31/96	--	<1	<1	<5	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-25@6.0	SCI	Soil boring	F	H-213 KOT AST Pipe Leak	5/31/96	--	24yh	2,400	<150	--	<0.005	0.027	<0.005	0.062c	--	--	--	--
SCI-26@3.5	SCI	Soil boring	L	Storm Drains	5/31/96	120	<1	1,300	84yhl	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-27@3.5	SCI	Soil boring	B/C	H-205/H-207 Area	6/3/96	480	†	1,900yh	4,600y	--	†	†	†	†	--	--	--	--
SCI-28@3.5	SCI	Soil boring	L	Storm Drains	6/3/96	--	--	3.1yh	22yh	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-29@5.5	SCI	Soil boring	L	Storm Drains	6/3/96	52	--	10yh	78yh	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--
SCI-31@4.0	SCI	Soil boring	D	H-209 Drayage Tanks	6/3/96	2,800	<1	2,500yh	3,100y	--	<0.005	<0.005	<0.005	<0.005	--	--	ND	--
SCI-32@5.0	SCI	Soil boring	Q	Lakeside Metals	8/29/96	<50	<1	<1	<5	--	<0.005	<0.005	0.0028J	<0.005	<0.020	ND	ND	--
SCI-34@3.5	SCI	Soil boring	Q	Lakeside Metals	8/29/96	--	<1	840yh	2,500	--	<0.005	<0.005	0.0063	<0.005	<0.020	ND	0.380+	--
SCI-35@3.0	SCI	Soil boring	G	Current KOT AST	8/29/96	--	2.6y	6,700y	5,200yl	--	<0.005	0.038	<0.005	0.42	--	--	--	--
SCI-35@8.0	SCI	Soil boring	G	Current KOT AST	8/29/96	--	5.2y	17y	34y	--	<0.005	0.17	<0.005	1.46	--	--	--	--
SCI-36@3.5	SCI	Soil boring	H	H-232 Oil Tanks	8/30/96	120	--	12yh	100	--	<0.005	<0.005	0.0068	<0.005	--	--	--	--
SCI-37@2.5	SCI	Soil boring	H	H-232 Oil Tanks	8/30/96	<50	--	10yh	46	--	<0.005	<0.005	0.0066	<0.005	--	--	--	--
SCI-38@3.0	SCI	Soil boring	J	Amer Bitumuls/ Port Petroleum	8/30/96	1,200	<1	220ylh	2,300	--	<0.005	<0.005	0.0041J	<0.005	0.023**	ND	0.046+	--
9AV-B0-4	Uribe	Field Blank		Unknown location	11/19/92	--	--	<40	--	250	--	--	--	--	--	--	--	--
9AV-B00-1	Uribe	Field Blank		Unknown location	3/3/93	--	--	<80	--	--	<0.010	<0.010	<0.010	<0.010	--	--	--	--
9AV-B00-2	Uribe	Field Blank		Unknown location	3/3/93	--	--	<100	--	--	--	--	--	--	--	--	--	--
9AV-B00-3	Uribe	Field Blank		Unknown location	3/3/93	--	--	<100	--	--	--	--	--	--	--	--	--	--

? Storm drain

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PCBs = Polychlorinated Biphenyls

mg/kg = milligrams per kilogram or parts per million
<50 = Compound not detected at or above stated reporting limit
-- = Not tested
ND = Not detected
y = Sample exhibits fuel pattern which does not resemble standard
l = lighter hydrocarbons than indicated standard

h = Heavier hydrocarbons than indicated standard
z = Sample exhibits unknown single peak or peaks
J = estimated value
+ = Result indicates Aroclor-1260 only
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** = Possibly contaminated due to laboratory extraction compound

TABLE 3
SEMI-VOLATILE AND PAH CONCENTRATIONS IN SOIL
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	ACENAPH-THYLENE (mg/kg)	ANTHRA-CENE (mg/kg)	BENZO(A)-ANTHRA-CENE (mg/kg)	BENZO(B)-FLUOR-ANTHENE (mg/kg)	BENZO-(A)PY-RENE (mg/kg)	BENZO-(G,H,I)-PERYLENE (mg/kg)	BENZO(K)-FLUOR-ANTHENE (mg/kg)	CHRY-SENE (mg/kg)	FLUOR-ANTHENE (mg/kg)	FLUORENE (mg/kg)	INDENO-(1,2,3-CD)-PYRENE (mg/kg)	2-METHYL-NAPHTHA-LENE (mg/kg)	PHENAN-THRENE (mg/kg)	PYRENE (mg/kg)	OTHER 8270s (mg/kg)
SP-1	ERM-West	Stockpile	M	KOT H-107 UST Excav.	10/12/94	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.0	<2	6.9	2.9	<2	ND
SCIMW-10@3	SCI	Soil boring	J	Amer Bitumuls/ Port Petroleum	8/21/96	0.90	0.52J	1.9	2.3	4.1	2.4	3.1	2.9	3.5	<0.67	2.0	<0.67	1.2	5.3	ND
SCI-32@5.0	SCI	Enviro-Core	Q	Lakeside Metals	8/29/96	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	ND
SCI-34@3.5	SCI	Enviro-Core	Q	Lakeside Metals	8/29/96	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	+
SCI-38@3.0	SCI	Enviro-Core	J	Amer Bitumuls/ Port Petroleum	8/30/96	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	ND

* = Areas are for geographic reference only and do not imply a source of contamination.
mg/kg = milligrams per kilogram or parts per million
+ = Sample contained bis(2-Ethylhexyl)phthalate at 4.0 mg/kg
<2 = Compound not detected at or above stated reporting limit
ND = Not detected
J = estimated value

TABLE 4
DISSOLVED HEAVY METAL CONCENTRATIONS IN SOIL
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	ANTIMONY (mg/kg)	ARSENIC (mg/kg)	BARIUM (mg/kg)	BERYLLIUM (mg/kg)	CADMIUM (mg/kg)	TOTAL CHROMIUM (mg/kg)	COBALT (mg/kg)	COPPER (mg/kg)	LEAD (mg/kg)	MERCURY (mg/kg)	MOLYB-DENUM (mg/kg)	NICKEL (mg/kg)	SELENIUM (mg/kg)	SILVER (mg/kg)	THALLIUM (mg/kg)	VANADIUM (mg/kg)	ZINC (mg/kg)
9AV-B1-4	Uribe	Boring B-1	O	H-203 Truck Repair	11/20/92	--	1.8	91	--	0.1	44	--	--	3	<0.1	--	--	<0.4	<0.5	--	--	--
9AV-B1-7	Uribe	Boring B-1	O	H-203 Truck Repair	11/20/92	--	1.9	170	--	<0.1	46	--	--	4	0.1	--	--	<0.4	<0.5	--	--	--
9AV-B2-4	Uribe	Boring B-2	L	Storm Drains	11/19/92	--	1.8	53	--	0.1	26	--	--	11	0.1	--	--	1.0	<0.5	--	--	--
9AV-B2-7	Uribe	Boring B-2	L	Storm Drains	11/19/92	--	1.0	20	--	0.2	49	--	--	5	<0.1	--	--	<0.4	<0.5	--	--	--
9AV-B3-5	Uribe	Boring B-3	L	Storm Drains	11/19/92	--	1.0	58	--	0.2	58	--	--	17	0.2	--	--	1.1	<0.5	--	--	--
9AV-B3-7	Uribe	Boring B-3	L	Storm Drains	11/19/92	--	1.1	80	--	0.3	49	--	--	13	<0.1	--	--	<0.4	<0.5	--	--	--
9AV-B4-4	Uribe	Boring B-4	L	Storm Drains	11/19/92	--	1.0	160	--	0.3	35	--	--	18	0.2	--	--	1.2	<0.5	--	--	--
9AV-B4-7	Uribe	Boring B-4	L	Storm Drains	11/19/92	--	4.0	21	--	0.2	42	--	--	4	<0.1	--	--	2.1	<0.5	--	--	--
9AV-B5-4	Uribe	Boring B-5	L	Storm Drains	11/20/92	--	3.4	64	--	0.2	27	--	--	26	0.1	--	--	<0.4	<0.5	--	--	--
9AV-B5-7	Uribe	Boring B-5	L	Storm Drains	11/20/92	--	1.9	22	--	0.3	43	--	--	5	<0.1	--	--	0.6	<0.5	--	--	--
9AV-B6-4	Uribe	Boring B-6	L	Storm Drains	11/20/92	--	1.9	29	--	0.2	47	--	--	16	0.2	--	--	<0.4	<0.5	--	--	--
9AV-B6-7	Uribe	Boring B-6	L	Storm Drains	11/20/92	--	3.3	26	--	0.2	47	--	--	9	0.1	--	--	<0.4	<0.5	--	--	--
9AV-B10-4	Uribe	Boring B-7	L	Storm Drains	11/19/92	--	1.9	62	--	0.2	30	--	--	67	0.1	--	--	<0.4	<0.5	--	--	--
9AV-B10-10	Uribe	Boring B-7	L	Storm Drains	11/19/92	--	3.8	22	--	0.4	36	--	--	12	<0.1	--	--	<0.4	<0.5	--	--	--
CIMW-10@3	SCI	Soil Boring	J	Amer Bitumuls/ Port Petroleum	8/21/96	8.4	2.0	28	0.28	<0.1	2.4	4.0	12	5.9	<0.1	<1.0	3.7	1.4	<0.5	<0.25	10	69
SCI-32@5.0	SCI	Soil boring	Q	Lakeside Metals	8/29/96	<2.8	2.2	200	0.36	<0.095	31	14	11	5.1	<0.10	<0.95	52	0.83	<0.47	<0.24	22	31
SCI-34@3.0	SCI	Soil boring	Q	Lakeside Metals	8/29/96	11	46	100	0.18	2.6	35	7.1	470	3,800	1.7	2.9	44	1.3	0.71	0.91	25	280
SCI-38@3.0	SCI	Soil boring	J	Amer Bitumuls/ Port Petroleum	8/30/96	<2.9	3.6	260	0.36	0.33	7.9	8.4	7.7	18	<0.095	<0.96	9.0	2.8	<0.48	<0.24	47	100

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mg/kg = milligrams per kilogram or parts per million
-- = Not tested
<0.1 = Compound not detected at or above stated reporting limit

TABLE 5
PETROLEUM HYDROCARBON, BTEX, PCB, AND HERBICIDE/PESTICIDE
CONCENTRATIONS IN FREE PRODUCT AND GROUNDWATER
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	AROCHLOR-1260 (ug/L)	OTHER PCBs (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	OTHER HERBS/ PESTS (ug/L)	SALINITY (pss)
9AV-UST-2	Uribe	Free Product/UST	F	H-213 KOT AST Pipe Leak	2/12/93	--	--	**1,000,000**	--	--	--	--	--	--	--	--	--	--	<1
MW-6(FP)	SCI	Free Product	F	KOT H-213 AST Pipe Leak	5/24/96	--	**900,000yh**	**470,000**	**13,000yl**	<250	<250	<250	<250	<2.0	ND	--	--	--	--
SCI-2(FP)	SCI	Free Product	I	Amer. Bitum./Port Petrol.	5/22/96	--	--	**8,600,000ylh**	**5,300,000yl**	--	--	--	--	--	--	--	--	--	--
Manhole-H_2O Layer	SCI	Oil Filled Manhole	J	Amer. Bitum./Port Petrol.	5/13/96	--	**4,500yh**	**720,000**	**34,000yl**	<25	<25	<25	**40J**	<1.0	ND	--	--	--	--
Manhole-Oil Layer**	SCI	Oil Filled Manhole	J	Amer. Bitum./Port Petrol.	5/13/96	--	†	†	†	<10,000ug/kg	**15,000ug/kg**	<10,000ug/kg	**62,000ug/kg**	**30mg/kg**	ND	--	--	--	--
Manhole @ Start**	SCI	Oil Filled Manhole	J	Amer. Bitum./Port Petrol.	10/16/96	--	--	††	††	<25,000ug/kg	<25,000ug/kg	<25,000ug/kg	<25,000ug/kg	**22,000ug/kg**	ND	--	--	--	--
Manhole @ 2000 gal	SCI	Oil Filled Manhole	J	Amer. Bitum./Port Petrol.	10/16/96	--	--	**910,000**	**100,000**	<5.0	<5.0	<5.0	<5.0	**40**	ND	--	--	--	--
Manhole @ 8700 gal	SCI	Oil Filled Manhole	J	Amer. Bitum./Port Petrol.	10/16/96	--	--	**5,300**	<250	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
9AV-W-1	Uribe	Grab (Trench 1)	L	Storm Drains (Cannery Line)	3/3/93	--	--	**2,200**	--	**1.2**	**1.1**	**2.8**	**4.9**	--	--	--	--	--	--
9AV-W-2	Uribe	Grab (Trench 1)	L	Storm Drains (Cannery Line)	3/4/93	--	--	--	--	**1.8**	**1.7**	**2.5**	**8.8**	--	--	--	--	--	--
9AV-X5-3	Uribe	Grab (Trench 5B)	L	Storm Drains	3/12/93	--	--	--	--	<40	<30	<30	<40	--	--	--	--	--	--
9AV-X5-4	Uribe	Grab (Trench 5B)	L	Storm Drains	3/12/93	--	--	--	--	<40	<30	<30	<40	--	--	--	--	--	--
9AV-X5-5	Uribe	Grab (Trench 5B)	L	Storm Drains	3/12/93	--	--	**57,000**	--	--	--	--	--	--	--	--	--	--	--
9AV-B1-W1	Uribe	Grab (Boring B-1)	O	H-203 Truck Repair	11/20/92	--	--	<1,000	--	--	--	--	--	--	--	--	--	--	--
9AV-B3-W1	Uribe	Grab (Boring B-3)	L	Storm Drains	11/20/92	--	--	<500	--	--	--	--	--	--	--	--	--	--	--
9AV-B5-W1	Uribe	Grab (Boring B-5)	L	Storm Drains	11/20/92	--	--	<100	--	--	--	--	--	--	--	--	--	--	--
9AV-B10-W1	Uribe	Grab (Boring B-7)	L	Storm Drains	11/21/92	--	--	<800	--	--	--	--	--	--	--	--	--	--	--
9AV-B13-W1	Uribe	Grab (Boring B-13)	L	Storm Drains	3/3/93	--	--	**2,000,000**	--	--	--	--	--	--	--	--	--	--	--
9AV-B13-W2	Uribe	Grab (Boring B-13)	L	Storm Drains	3/1/93	--	--	--	--	**300**	<200	**400**	**400**	--	--	--	--	--	--
9AV-B14-W1	Uribe	Grab (Boring B-14)	L	Storm Drains	3/1/93	--	--	**940**	--	--	--	--	--	--	--	--	--	--	--
9AV-B14-W2	Uribe	Grab (Boring B-14)	L	Storm Drains	3/1/93	--	--	--	--	<0.4	<0.3	**0.4**	<0.4	--	--	--	--	--	--
9AV-B15-W1	Uribe	Grab (Boring B-15)	F	KOT H-213 AST Pipe Leak	3/1/93	--	--	**2,900**	--	--	--	--	--	--	--	--	--	--	--
9AV-B15-W2	Uribe	Grab (Boring B-15)	F	KOT H-213 AST Pipe Leak	3/1/93	--	--	--	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
9AV-B16-W1	Uribe	Grab (Boring B-16)	F	KOT H-213 AST Pipe Leak	3/2/93	--	--	**310,000**	--	--	--	--	--	--	--	--	--	--	--
9AV-B16-W2	Uribe	Grab (Boring B-16)	F	KOT H-213 AST Pipe Leak	3/2/93	--	--	--	--	<40	<30	<30	<40	--	--	--	--	--	--
9AV-B17-W1	Uribe	Grab (Boring B-17)	F	KOT H-213 AST Pipe Leak	3/2/93	--	--	**59,000**	--	--	--	--	--	--	--	--	--	--	--
9AV-B17-W2	Uribe	Grab (Boring B-17)	F	KOT H-213 AST Pipe Leak	3/2/93	--	--	--	--	**2**	<2	<2	<2	--	--	--	--	--	--

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9AV-B18-W1	Uribe	Grab (Boring B-18)	E	H-211/232 Lateral Loop	3/2/93	--	--	**590h**	--	--	--	--	--	--	--	--	--	--	--
9AV-B18-W2	Uribe	Grab (Boring B-18)	E	H-211/232 Lateral Loop	3/2/93	--	--	--	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
BH-1	Clayton	Grab (Soil Boring)	M	KOT H-107 UST Excav.	3/29/95	--	<50	<50	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
BH-2	Clayton	Grab (Soil Boring)	M	KOT H-107 UST Excav.	3/29/95	--	**110,000**	**300,000**	--	<20	<20	<20	**50**	--	--	--	--	--	--
GW-1	ERM-West	Grab (Excavation Water)	M	KOT H-107 UST Excav.	10/15/94	--	**1,600**	--	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Uribe	Monitoring Well	F	KOT H-213 AST Pipe Leak	4/4/94	--	<50	**510**	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--
203-MW-1	Uribe	Monitoring Well	F	KOT H-213 AST Pipe Leak	10/3/94	--	--	**390y**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	4/10/95	--	<50	**330**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	7/24/95	--	<50	**230**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	11/10/95	--	<50	**430**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton/SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	2/20/96	--	<50	**590yh**	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-1	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	5/24/96	--	<50	**870yh**	**630y**	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-1	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	9/6/96	--	<50	**850yh**	**490yl**	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-2	Uribe	Monitoring Well	F	KOT H-213 AST Pipe Leak	4/4/94	--	<50	**1,800**	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--
MW-2	Uribe	Monitoring Well	F	KOT H-213 AST Pipe Leak	10/5/94	--	--	**1,200y**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	4/10/95	--	<50	**550**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	7/24/95	--	**70**	**960**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	11/10/95	--	<50	**920**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton/SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	2/20/96	--	<50	**1,700h**	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-2	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	5/24/96	--	<50	**2,800yh**	**1,200y**	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-2	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	9/5/96	--	**58z**	**2,900**	**760yl**	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-3	Uribe	Monitoring Well	F	KOT H-213 AST Pipe Leak	4/4/94	--	<50	**690**	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--
203-MW-3	Uribe	Monitoring Well	F	KOT H-213 AST Pipe Leak	10/4/94	--	--	**480y**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-3	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	4/10/95	--	<50	**830**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-3	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	7/24/95	--	<50	**460**	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-3	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	11/10/95	--	<50	**2,100**	--	<0.4	<0.3	**0.7**	<0.4	--	--	--	--	--	--
MW-3	Clayton/SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	2/20/96	--	<50	**620h**	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-3	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	5/24/96	--	<50	**1,100yh**	**550y**	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--

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MW-3	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	9/18/96	--	<50	1,500	890yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-4	Uribe	Monitoring Well	F	KOT H-213 AST Pipe Leak	4/4/94	--	6,200	410,000	--	140	47	20	310	--	--	--	--	--	--
MW-4	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	7/24/95	--	2,400	21,000	--	140	34	74	40	--	--	--	--	--	--
MW-4	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	5/24/96	--	690y	37,000	2,800yl	44	18	<2.5	7.7	--	--	--	--	--	--
MW-4	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	9/4/96	--	1,000h	240,000	26,000yl	100	5.2	<0.5	7.2	--	--	--	--	--	--
MW-5	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	4/10/95	--	1,100	6,200	--	3.1	2.9	<0.3	11.3	--	--	--	--	--	--
MW-5	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	7/24/95	--	720	4,800	--	3.1	0.6	0.7	0.7	--	--	--	--	--	--
MW-5	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	11/10/95	--	260	3,700	--	0.8	0.6	0.5	1.9	--	--	--	--	--	--
MW-5	Clayton/SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	2/20/96	--	150y	440h	--	0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-5	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	5/24/96	--	82y	4,600yh	1,900y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-5	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	9/4/96	--	<50	7,700yh	1,900yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-6	Clayton	Monitoring Well	F	KOT H-213 AST Pipe Leak	4/10/95	--	1,300	10,000	--	4.4	0.7	<0.3	0.8	--	--	--	--	--	--
MW-6	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	5/24/96	--	280,000yh	240,000	5,500yl	<250	<250	<250	<250	--	--	--	--	--	--
MW-6	SCI	Monitoring Well	F	KOT H-213 AST Pipe Leak	9/5/96	89,000	200h	50,000	3,200yl	5.3	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
MW-7	Clayton	Monitoring Well	M	KOT H-107 UST Excav.	4/10/95	--	<50	370	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-7	Clayton	Monitoring Well	M	KOT H-107 UST Excav.	7/24/95	--	<50	260	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-7	Clayton	Monitoring Well	M	KOT H-107 UST Excav.	11/10/95	--	<50	270	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-7	Clayton/SCI	Monitoring Well	M	KOT H-107 UST Excav.	2/20/96	--	<50	6,100	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-7	SCI	Monitoring Well	M	KOT H-107 UST Excav.	5/24/96	--	<50	750yh	750y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-7	SCI	Monitoring Well	M	KOT H-107 UST Excav.	9/5/96	<5,000	<50	480yh	310yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-1	SCI	Monitoring Well	E	H-211/H-232 Lateral Loop	5/24/96	<5,000	<50	560yh	280y	<5.0	<5.0	<5.0	<5.0	<0.5	ND	<0.09	<0.09	ND	--
SCIMW-1	SCI	Monitoring Well	E	H-211/H-232 Lateral Loop	9/6/96	<5,000	<50	870yh	<250	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-2	SCI	Monitoring Well	N	Bay City/East Bay Oil Co.	5/23/96	5,600	--	2,600l	360yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-2	SCI	Monitoring Well	N	Bay City/East Bay Oil Co.	9/4/96	8,000	<50	5,100	770yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-3	SCI	Monitoring Well	I	Amer. Bitum./Port Petrol.	5/23/96	<5,000	--	8,000yh	7,400y	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-3	SCI	Monitoring Well	I	Amer. Bitum./Port Petrol.	9/5/96	<5,000	<50	8,800yh	4,400yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
XB	SCI	Dupl. of SCIMW-3	I	Amer. Bitum./Port Petrol.	9/5/96	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-4	SCI	Monitoring Well	L	Storm Drains	8/26/96	<5,000	<50	630yh	670yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-5	SCI	Monitoring Well	M	KOT H-107 UST Excav.	9/3/96	<5,000	<50	<50	<250	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--

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SCIMW-6	SCI	Monitoring Well	C	H-207	8/28/96	<5,000	<50	150yh	260yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-7	SCI	Monitoring Well	P/Q	Chemical Warehouse /Lakeside Metals	9/6/96	<5,000	540	6,100y	1,900yl	5,300	<1,300	<1,300	<1,300	<1.0	ND	--	--	--	--
SCIMW-8	SCI	Monitoring Well	I	Amer. Bitum./Port Petrol.	8/26/96	<5,000	<50	1,200yh	1,400yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-9	SCI	Monitoring Well	J	Amer. Bitum./Port Petrol.	8/29/96	5,000	<50	1,800yh	1,100yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-10	SCI	Monitoring Well	J	Amer. Bitum./Port Petrol.	8/26/96	<5,000	<50	1,100yh	1,200yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-11	SCI	Monitoring Well	N	Bay City/East Bay Oil Co.	8/28/96	<5,000	<50	400ylh	<250	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-12	SCI	Monitoring Well	O	H-203 Truck Repair	8/29/96	<5,000	<50	<50	<250	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-13	SCI	Monitoring Well	J	Amer. Bitum./Port Petrol.	8/29/96	<5,000	<50	5,400yh	2,100yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-14	SCI	Monitoring Well	I	Amer. Bitum./Port Petrol.	8/29/96	6,000	<50	2,200yh	1,400yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-15	SCI	Monitoring Well	I	Amer. Bitum./Port Petrol.	8/29/96	<5,000	<50	2,100yh	1,600yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-16	SCI	Monitoring Well	R	H-318 Forklift Repair	8/30/96	<5,000	<50	180	<250	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
XA	SCI	Dupl. of SCIMW-16	R	H-318 Forklift Repair	8/30/96	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-17	SCI	Monitoring Well	R	H-318 Forklift Repair	8/29/96	<5,000	<50	190yh	<250	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-18	SCI	Monitoring Well	L	Storm Drains	9/6/96	<5,000	<50	2,200yh	1,600yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-19	SCI	Monitoring Well	Q	Lakeside Metals	8/30/96	<5,000	<50	180	<250	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCIMW-20	SCI	Monitoring Well	Q	Lakeside Metals	9/3/96	<5,000	<50	330y	<250	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCI-1	SCI	Temp. Well Point	J	Amer. Bitum./Port Petrol.	5/21/96	--	--	25,000yh	15,000yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCI-2	SCI	Temp. Well Point	I	Amer. Bitum./Port Petrol.	5/22/96	81,000	--	250,000ylh	160,000yl	<13	<13	<13	<13	45	ND	--	--	--	--
SCI-3	SCI	Temp. Well Point	J	Amer. Bitum./Port Petrol.	5/21/96	210,000	--	100,000yh	190,000yh	<5.0	<5.0	<5.0	<5.0	43	ND	--	--	--	--
SCI-4	SCI	Temp. Well Point	I	Amer. Bitum./Port Petrol.	5/22/96	--	--	1,300yh	510yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCI-5	SCI	Temp. Well Point	A/K	Pac. Lmbr. Well/ H-227 Yard UST	5/22/96	28,000	250y	35,000ylh	42,000yl	<25	<25	<25	<25	--	--	--	--	--	--
SCI-6	SCI	Temp. Well Point	J	Amer. Bitum./Port Petrol.	5/22/96	140,000	14,000yh	240,000h	46,000yl	<50	<50	<50	<50	--	--	--	--	--	--
SCI-7	SCI	Temp. Well Point	L	Storm Drains	5/23/96	--	--	3,000yh	3,600	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-8	SCI	Temp. Well Point	L	Storm Drains	5/22/96	--	--	2,100yh	1,400y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-9	SCI	Temp. Well Point	L	Storm Drains	5/23/96	--	--	2,500yh	2,300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-10	SCI	Temp. Well Point	L	Storm Drains	5/22/96	--	--	840yh	1,200y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-11	SCI	Temp. Well Point	O	H-203 Truck Repair	5/23/96	<5,000	--	340y	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-12	SCI	Temp. Well Point	N	Bay City/ East Bay Oil Co.	5/22/96	--	18,000	2,400ylh	14,000y	810	680	2,200	3,900	--	--	--	--	--	--

* = Areas are for geographic reference only and do not imply a source of contamination.
* Results with units of ug/kg and mg/kg are included for presentation purposes only.
TVH = Total Volatile Hydrocarbons
TEH = Total Extractable Hydrocarbons
PCBs = Polychlorinated Biphenyls

DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethene
ug/L = micrograms per liter or parts per billion
pss = practical salinity scale
y = Sample exhibits fuel pattern which does not resemble standard
l = lighter hydrocarbons than indicated standard

h = heavier hydrocarbons than indicated standard
z = Sample exhibits unknown single peak or peaks
J = estimated value
-- = Not tested
ND = Not detected
<5 = Compound not detected at or above stated reporting limit

† = Could not be quantified - Laboratory indicated sample consisted of 98.80% oil fraction (approx. 89% within the diesel range), 1.2% sediment and <0.5% water
†† = Could not be quantified - Laboratory indicated sample consisted of 96.4% oil fraction, 3.6% water fraction, and <0.5% sediment resembling the extractable fuel standard for diesel

TABLE 5
PETROLEUM HYDROCARBON, BTEX, PCB, AND HERBICIDE/PESTICIDE
CONCENTRATIONS IN FREE PRODUCT AND GROUNDWATER
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	AROCHLOR-1260 (ug/L)	OTHER PCBs (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	OTHER HERBS/ PESTS (ug/L)	SALINITY (pss)
SCI-13	SCI	Temp. Well Point	E	H-211/H-232 Lateral Loop	5/24/96	<5,000	<50	930yh	1,500y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-14	SCI	Temp. Well Point	M	Storm Drains	5/23/96	<5,000	<50	540yh	860y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-15	SCI	Temp. Well Point	M	Storm Drains	5/23/96	<5,000	<50	430yh	3,900y	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCI-16	SCI	Temp. Well Point	L	Storm Drains	5/24/96	<5,000	<50	960yh	1,100y	<25	<25	<25	<25	--	--	--	--	--	--
SCI-17	SCI	Temp. Well Point	M	Outfall East of H-107	5/28/96	<5,000	92y	190yz	<250	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCI-18	SCI	Temp. Well Point	M	Storm Drain	5/24/96	<5,000	<50	1,100yh	11,000y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-19	SCI	Temp. Well Point	L	Storm Drains	5/24/96	<5,000	93yh	25,000	710yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCI-20	SCI	Temp. Well Point	H	H-232 Oil Tanks	5/24/96	<5,000	--	16,000yh	9,800y	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCI-21	SCI	Temp. Well Point	G	Current KOT AST	5/31/96	--	<50	440yh	2,200y	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCI-22	SCI	Temp. Well Point	F	KOT H-213 AST Pipe Leak	5/31/96	14,000	170z	13,000ylh	9,100yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCI-23	SCI	Temp. Well Point	F	KOT H-213 AST Pipe Leak	5/31/96	--	1,600yh	350,000	8,300yl	<13	<13	<13	<13	--	--	--	--	--	--
SCI-24	SCI	Temp. Well Point	F	KOT H-213 AST Pipe Leak	5/31/96	--	<50	1,100ylh	750yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-25	SCI	Temp. Well Point	F	KOT H-213 AST Pipe Leak	5/31/96	--	2,700yh	210,000	6,200yl	12J	<13	<13	<13	--	--	--	--	--	--
SCI-26	SCI	Temp. Well Point	L	Storm Drains	5/31/96	--	--	520yh	<250	<5.0	7.9	<5.0	51	--	--	--	--	--	--
SCI-27	SCI	Temp. Well Point	B/C	H-205/H-207	6/3/96	<5,000	<50	240z	<250	<5.0	<5.0	<5.0	<5.0	<0.5	ND	<0.09	<0.09	ND	--
SCI-28	SCI	Temp. Well Point	L	Storm Drains	6/4/96	--	<50	--	--	<0.5	<0.5	<0.5	3.5	--	--	--	--	--	--
SCI-29	SCI	Temp. Well Point	L	Storm Drains	6/3/96	<5,000	<50	2,000yhz	1,600	<0.5	<0.5	<.05	13.7	--	--	--	--	--	--
SCI-30	SCI	Temp. Well Point	B/C	H-205/H-207	6/3/96	<5,000	<50	1,500yh	3,300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-31	SCI	Temp. Well Point	D	H-209 Drayage Tanks	6/3/96	--	110y	2,300yhz	2,400	<5.0	2.9J	<5.0	2.7J	<1.0	ND	--	--	--	--
SCI-32	SCI	Temp. Well Point	Q	Lakeside Metals	8/29/96	<5,000	<50	340y	440y	<8.3	<8.3	<8.3	<8.3	<1.0	ND	--	--	--	--
SCI-33	SCI	Temp. Well Point	Q	Lakeside Metals	8/29/96	<5,000	<50	190y	460y	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCI-34	SCI	Temp. Well Point	Q	Lakeside Metals	8/30/96	<5,000	<50	1,900yl	1,500yh	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCI-35	SCI	Temp. Well Point	G	Current KOT AST	8/30/96	240,000	16,000y	220,000y	230,000y	<5	120	<5	1,900	--	--	--	--	--	--
SCI-36	SCI	Temp. Well Point	H	H-232 Oil Tanks	8/30/96	<5,000	--	3,800y	3,000yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-37	SCI	Temp. Well Point	H	H-232 Oil Tanks	8/30/96	<5,000	--	1,300yh	650yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCI-38	SCI	Temp. Well Point	J	Amer. Bitum./Port Petrol.	8/30/96	<5,000	<50	990y	640yl	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
SCI-39	SCI	Temp. Well Point	J	Amer. Bitum./Port Petrol.	8/30/96	<5,000	<50	1,000y	730y	<5.0	<5.0	<5.0	<5.0	<1.0	ND	--	--	--	--
9AV-B0-W1	Uribe	Fld. Blnk.		Unknown	11/20/92	--	--	<50	--	--	--	--	--	--	--	--	--	--	--
9AV-B00-W1	Uribe	Fld. Blnk./tap water		Unknown	3/3/93	--	--	<50	--	--	--	--	--	--	--	--	--	--	--

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= Results with units of ug/kg and mg/kg are included for presentation purposes only.
TVH = Total Volatile Hydrocarbons
TEH = Total Extractable Hydrocarbons
PCBs = Polychlorinated Biphenyls

DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethene
ug/L = micrograms per liter or parts per billion
pss = practical salinity scale
y = Sample exhibits fuel pattern which does not resemble standard
l = lighter hydrocarbons than indicated standard

h = heavier hydrocarbons than indicated standard
z = Sample exhibits unknown single peak or peaks
J = estimated value
-- = Not tested
ND = Not detected
<5 = Compound not detected at or above stated reporting limit

† = Could not be quantified - Laboratory indicated sample consisted of 98.80% oil fraction (approx. 89% within the diesel range), 1.2% sediment and <0.5% water
†† = Could not be quantified - Laboratory indicated sample consisted of 96.4% oil fraction, 3.6% water fraction, and <0.5% sediment resembling the extractable fuel standard for diesel

TABLE 5
PETROLEUM HYDROCARBON, BTEX, PCB, AND HERBICIDE/PESTICIDE
CONCENTRATIONS IN FREE PRODUCT AND GROUNDWATER
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	AROCHLOR-1260 (ug/L)	OTHER PCBs (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	OTHER HERBS/ PESTS (ug/L)	SALINITY (pss)
9AV-B00-W2	Uribe	Fld. Blnk./tap water		Unknown	3/3/93	--	--	--	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
Trip Blank #1	SCI	Field Blank		Deionized Water	8/26/96	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
Trip Blank #2	SCI	Field Blank		Deionized Water	8/28/96	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
Trip Blank #4	SCI	Field Blank		Deionized Water	8/29/96	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
Trip Blank #5	SCI	Field Blank		Deionized Water	8/30/96	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
Trip Blank #6	SCI	Field Blank		Deionized Water	9/3/96	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
Trip Blank #7	SCI	Field Blank		Deionized Water	9/4/96	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
Trip Blank #8	SCI	Field Blank		Deionized Water	9/5/96	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
Trip Blank #9	SCI	Field Blank		Deionized Water	9/6/96	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--

* = Areas are for geographic reference only and do not imply a source of contamination.
** = Results with units of ug/kg and mg/kg are included for presentation purposes only.
TVH = Total Volatile Hydrocarbons
TEH = Total Extractable Hydrocarbons
PCBs = Polychlorinated Biphenyls
DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethene
ug/L = micrograms per liter or parts per billion
pss = practical salinity scale
y = Sample exhibits fuel pattern which does not resemble standard
l = lighter hydrocarbons than indicated standard
h = heavier hydrocarbons than indicated standard
z = Sample exhibits unknown single peak or peaks
J = estimated value
-- = Not tested
ND = Not detected
<5 = Compound not detected at or above stated reporting limit
† = Could not be quantified - Laboratory indicated sample consisted of 98.80% oil fraction (approx. 89% within the diesel range), 1.2% sediment and <0.5% water
†† = Could not be quantified - Laboratory indicated sample consisted of 96.4% oil fraction, 3.6% water fraction, and <0.5% sediment resembling the extractable fuel standard for diesel

TABLE 6
VOLATILE AND SEMI-VOLATILE ORGANIC COMPOUND CONCENTRATIONS
IN FREE PRODUCT AND GROUNDWATER
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	MEK or 2-BUTANONE (ug/L)	1,1-DI-CHLORO-ETHANE (ug/L)	cis-1,2-DI-CHLORO-ETHENE (ug/L)	1,1,1-TRI-CHLORO-ETHANE (ug/L)	TRI-CHLORO-ETHENE (ug/L)	OTHER 8240s EXCLUDING BTEX**	BENZO-(a)-PYRENE (ug/L)	1,4-DI-CHLORO-BENZENE (ug/L)	BIS(2-ETHYL-HEXYL) PHTHALATE (ug/L)	FLUORENE (ug/L)	2-METHYL-NAPHTHA-LENE (ug/L)	NAPHTHA-LENE (ug/L)	PENTA-CHLORO-PHENOL (ug/L)	PHENAN-THRENE (ug/L)	OTHER 8270s
M-3***	Uribe	Manhole	L	Storm Drains	11/17/92	<10mg/kg	<10mg/kg	<10mg/kg	<10mg/kg	<10mg/kg	ND	--	--	--	--	--	--	--	--	--
Manhole-H_2O Layer	SCI	Oil-Filled Manhole	J	Amer. Bitum./ Port Petrol.	5/13/96	<50	**45**	**520**	**13J**	**28**	ND	<2,400	<2,400	<2,400	<2,400	<2,400	<2,400	<12,000	<2,400	ND
Manhole-Oil Layer***	SCI	Oil-Filled Manhole	J	Amer. Bitum./ Port Petrol.	5/13/96	<20,000ug/kg	<10,000ug/kg	<10,000ug/kg	<10,000ug/kg	<10,000ug/kg	ND	<2,000ug/kg	<2,000mg/kg	<2,000ug/kg	<2,000ug/kg	**2,200mg/kg**	<2,000mg/kg	<10,000mg/kg	<2,000ug/kg	ND
Manhole @ Start***	SCI	Oil Filled Manhole	J	Amer. Bitum./ Port Petrol.	10/16/96	<50,000ug/kg	<25,000ug/kg	<25,000ug/kg	<25,000ug/kg	<25,000ug/kg	ND	<500ug/kg	<500ug/kg	<500ug/kg	<500ug/kg	**1,200mg/kg**	<500ug/kg	<2,500mg/kg	<500ug/kg	ND
Manhole @ 2000 gal	SCI	Oil Filled Manhole	J	Amer. Bitum./ Port Petrol.	10/16/96	<10	<5.0	**5.8**	<5.0	<5.0	ND	<1,900	<1,900	<1,900	<1,900	**2,500**	<1,900	<9,400	<1,900	ND
Manhole @ 8700 gal	SCI	Oil Filled Manhole	J	Amer. Bitum./ Port Petrol.	10/16/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
9AV-B5-W2	Uribe	Grab (Soil Boring B-5)	L	Storm Drains	11/21/92	<20	<5	<5	<5	<5	ND	--	--	--	--	--	--	--	--	--
9AV-B10-W2	Uribe	Grab (Soil Boring B-7)	L	Storm Drains	11/20/92	<20	<5	<5	<5	<5	ND	--	--	--	--	--	--	--	--	--
GW-1	ERM-West	Grab (Excavation Water)	M	KOT H-107 UST Excav.	10/15/94	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	--	--
MW-6(FP)	SCI	Monitoring Well Free Product	F	H-213 KOT AST Pipe Leak	5/24/96	<50,000	<25,000	<25,000	<25,000	<25,000	ND	<40	<40	<40	<40	**260**	**49**	<200	**90**	ND
MW-6	SCI	Monitoring Well	F	H-213 KOT AST Pipe Leak	9/5/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<470	<470	<470	<470	**410J**	<470	<2400	<470	ND
MW-7	SCI	Monitoring Well	M	H-107 KOT UST Area	9/5/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-1	SCI	Monitoring Well	E	H-211/H-232 Lateral Loop	5/24/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-1	SCI	Monitoring Well	E	H-211/H-232 Lateral Loop	9/6/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-2	SCI	Monitoring Well	N	Bay City/East Bay Oil Co.	5/23/96	--	--	--	--	--	--	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-2	SCI	Monitoring Well	N	Bay City/East Bay Oil Co.	9/4/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	**6.0J**	<9.4	<47	<9.4	ND
SCIMW-3	SCI	Monitoring Well	I	Amer. Bitum./ Port Petrol.	5/23/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-3	SCI	Monitoring Well	I	Amer. Bitum./ Port Petrol.	9/5/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	+
XB	SCI	Monitoring Well Dupl. of SCIMW-3	I	Amer. Bitum./ Port Petrol.	9/5/96	<10	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
SCIMW-4	SCI	Monitoring Well	L	Storm Drains	8/26/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-5	SCI	Monitoring Well	M	Storm Drains	9/3/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-6	SCI	Monitoring Well	C	H-207	8/28/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-7	SCI	Monitoring Well	P/Q	Chem.Whse/ Lakeside Metals	9/6/96	<2,500	**8,100**	**27,000**	**10,000**	**7,900**	++ Vc + Chloroethane	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	+++
SCIMW-8	SCI	Monitoring Well	I	Amer. Bitum./ Port Petrol.	8/26/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-9	SCI	Monitoring Well	J	Amer. Bitum./ Port Petrol.	8/29/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND

Areas are for geographic reference only and do not imply a source of contamination.
** = BTEX presented in Table 4
MEK = Methylethylketone

*** = Results with units of mg/kg or ug/kg are included for presentation purposes only
ug/L = micrograms per liter or parts per billion
mg/kg = milligrams per kilogram or parts per million

ug/kg = micrograms per kilogram or parts per billion
<25 = Compound not detected at or above stated reporting limit
ND = Not detected
-- = Not tested

J = Estimated value
+ = Also detected Di-n-octylphthalate at 5.5J ug/L
++ = Also detected Vinyl Chloride at 8,900 ug/L & Chloroethane at 2,400J ug/L
+++ = Also detected 4-Methylphenol at 4.7J ug/L

TABLE 6
VOLATILE AND SEMI-VOLATILE ORGANIC COMPOUND CONCENTRATIONS
IN FREE PRODUCT AND GROUNDWATER
EIGHTH AVENUE STUDY AREA

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SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	MEK or 2-BUTANONE (ug/L)	1,1-DI-CHLORO-ETHANE (ug/L)	cis-1,2-DI-CHLORO-ETHENE (ug/L)	1,1,1-TRI-CHLORO-ETHANE (ug/L)	TRI-CHLORO-ETHENE (ug/L)	OTHER 8240s EXCLUDING BTEX**	BENZO-(a)-PYRENE (ug/L)	1,4-DI-CHLORO-BENZENE (ug/L)	BIS(2-ETHYL-HEXYL) PHTHALATE (ug/L)	FLUORENE (ug/L)	2-METHYL-NAPHTHA-LENE (ug/L)	NAPHTHA-LENE (ug/L)	PENTA-CHLORO-PHENOL (ug/L)	PHENAN-THRENE (ug/L)	OTHER 8270s
SCIMW-10	SCI	Monitoring Well	J	Amer. Bitum./ Port Petrol.	8/26/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-11	SCI	Monitoring Well	N	Bay City/East Bay Oil Co.	8/28/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-12	SCI	Monitoring Well	O	H-203 Truck Repair	8/29/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-13	SCI	Monitoring Well	J	Amer. Bitum./ Port Petrol.	8/29/96	<10	6.7	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-14	SCI	Monitoring Well	I	Amer. Bitum./ Port Petrol.	8/29/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-15	SCI	Monitoring Well	I	Amer. Bitum./ Port Petrol.	8/29/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-16	SCI	Monitoring Well	R	H-318 Forklift Repair	8/30/96	<10	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
XA	SCI	Monitoring Well Dupl. of SCIMW-16	R	H-318 Forklift Repair	8/30/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-17	SCI	Monitoring Well	R	H-318 Forklift Repair	8/29/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-18	SCI	Monitoring Well	L	Storm Drains	9/6/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-19	SCI	Monitoring Well	Q	Lakeside Metals	8/30/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCIMW-20	SCI	Monitoring Well	Q	Lakeside Metals	9/3/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCI-1	SCI	Temp. Well Point	J	Amer. Bitum./ Port Petrol.	5/21/96	<10	8.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
SCI-2	SCI	Temp. Well Point	I	Amer. Bitum./ Port Petrol.	5/22/96	38	<13	<13	<13	<13	ND	<47	36J	<47	<47	<47	<47	<240	<47	ND
SCI-3	SCI	Temp. Well Point	J	Amer. Bitum./ Port Petrol.	5/21/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<10	<10	<10	<10	<10	<10	70	<10	ND
SCI-4	SCI	Temp. Well Point	I	Amer. Bitum./ Port Petrol.	5/22/96	450	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCI-5	SCI	Temp. Well Point	A/K	Pac.Lmbr.Well/ H-227 UST	5/22/96	210	<25	<25	<25	<25	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<240	45J	ND
SCI-6	SCI	Temp. Well Point	J	Amer. Bitum./ Port Petrol.	5/22/96	<100	<50	<50	<50	<50	ND	<47	<47	<47	37J	110	<47	<240	45J	ND
SCI-11	SCI	Temp. Well Point	O	H-203 Truck Repair	5/23/96	--	--	--	--	--	--	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCI-12	SCI	Temp. Well Point	N	Bay City/East Bay Oil Co.	5/22/96	<200	<100	<100	<100	<100	ND	--	--	--	--	--	--	--	--	--
SCI-14	SCI	Temp. Well Point	M	Storm Drains	5/23/96	78	<5.0	<5.0	<5.0	<5.0	ND	<11	<11	<11	<11	<11	<11	<53	<11	ND
SCI-15	SCI	Temp. Well Point	M	Storm Drains	5/23/96	20	<5.0	<5.0	<5.0	<5.0	ND	<11	<11	<11	<11	<11	<11	<54	<11	ND
SCI-16	SCI	Temp. Well Point	L	Storm Drains	5/24/96	640	<25	<25	<25	<25	ND	--	--	--	--	--	--	--	--	--
SCI-17	SCI	Temp. Well Point	M	Outfall East of H-107	5/28/96	1,200	<5.0	<5.0	<5.0	<5.0	ND	<9.4 -	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCI-19	SCI	Temp. Well Point	L	Storm Drains	5/24/96	34	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCI-20	SCI	Temp. Well Point	H	H-232 Oil Tanks	5/24/96	87	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND

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** = BTEX presented in Table 4
MEK = Methylethylketone

*** = Results with units of mg/kg or ug/kg are included for presentation purposes only
ug/L = micrograms per liter or parts per billion
mg/kg = milligrams per kilogram or parts per million

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<25 = Compound not detected at or above stated reporting limit
ND = Not detected
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J = Estimated value
+ = Also detected Di-n-octylphthalate at 5.5J ug/L
++ = Also detected Vinyl Chloride at 8,900 ug/L & Chloroethane at 2,400J ug/L
+++ = Also detected 4-Methylphenol at 4.7J ug/L

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TABLE 6
VOLATILE AND SEMI-VOLATILE ORGANIC COMPOUND CONCENTRATIONS
IN FREE PRODUCT AND GROUNDWATER
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	MEK or 2-BUTANONE (ug/L)	1,1-DI-CHLORO-ETHANE (ug/L)	cis-1,2-DI-CHLORO-ETHENE (ug/L)	1,1,1-TRI-CHLORO-ETHANE (ug/L)	TRI-CHLORO-ETHENE (ug/L)	OTHER 8240s EXCLUDING BTEX**	BENZO-(a)-PYRENE (ug/L)	1,4-DI-CHLORO-BENZENE (ug/L)	BIS(2-ETHYL-HEXYL) PHTHALATE (ug/L)	FLUORENE (ug/L)	2-METHYL-NAPHTHA-LENE (ug/L)	NAPHTHA-LENE (ug/L)	PENTA-CHLORO-PHENOL (ug/L)	PHENAN-THRENE (ug/L)	OTHER 8270s
SCI-21	SCI	Temp. Well Point	G	Current KOT AST	5/31/96	**400**	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
SCI-22	SCI	Temp. Well Point	F	H-213 KOT AST Pipe Leak	5/31/96	**88**	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
SCI-23	SCI	Temp. Well Point	F	H-213 KOT AST Pipe Leak	5/31/96	**310**	<13	<13	<13	<13	ND	--	--	--	--	--	--	--	--	--
SCI-25	SCI	Temp. Well Point	F	H-213 KOT AST Pipe Leak	5/31/96	**310**	<13	<13	<13	<13	ND	--	--	--	--	--	--	--	--	--
SCI-26	SCI	Temp. Well Point	L	Storm Drains	5/31/96	**36**	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
SCI-27	SCI	Temp. Well Point	B/C	H-205/H-207	6/3/96	**80**	<5.0	<5.0	<5.0	<5.0	ND	**5.3J**	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCI-31	SCI	Temp. Well Point	D	H-209 Drayage Tanks	6/3/96	**33**	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
SCI-32	SCI	Temp. Well Point	Q	Lakeside Metals	8/29/96	**240**	<8.3	<8.3	<8.3	<8.3	ND	<10	<10	<10	<10	<10	<10	<50	<10	ND
SCI-33	SCI	Temp. Well Point	Q	Lakeside Metals	8/29/96	**58**	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	ND
SCI-34	SCI	Temp. Well Point	Q	Lakeside Metals	8/30/96	**180**	<5.0	<5.0	<5.0	<5.0	ND	<9.4	<9.4	**13**	<9.4	<9.4	<9.4	<47	<9.4	ND
SCI-35	SCI	Temp. Well Point	G	Current KOT AST	8/30/96	--	--	--	--	--	--	<470h	<470h	<470h	<470h	<470h	<470h	<2,400h	<470h	ND
SCI-38	SCI	Temp. Well Point	J	Amer. Bitum./ Port Petrol.	8/30/96	<10	<5.0	<5.0	<5.0	<5.0	ND	<10	<10	**14**	<10	<10	<10	<50	<10	ND
SCI-39	SCI	Temp. Well Point	J	Amer. Bitum./ Port Petrol.	8/30/96	**13**	<5.0	<5.0	<5.0	<5.0	ND	<10	<10	<10	<10	<10	<10	<50	<10	ND
TRIP BLANK	Uribe	Field Blank		Unknown	11/20/92	<20	<5	<5	<5	<5	ND	--	--	--	--	--	--	--	--	--
Trip Blank #1	SCI	Field Blank		Deionized Water	8/26/96	<10	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
Trip Blank #2	SCI	Field Blank		Deionized Water	8/28/96	<10	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
Trip Blank #4	SCI	Field Blank		Deionized Water	8/29/96	<10	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
Trip Blank #5	SCI	Field Blank		Deionized Water	8/30/96	<10	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
Trip Blank #6	SCI	Field Blank		Deionized Water	9/3/96	<10	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
Trip Blank #7	SCI	Field Blank		Deionized Water	9/4/96	<10	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
Trip Blank #8	SCI	Field Blank		Deionized Water	9/5/96	<10	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--
Trip Blank #9	SCI	Field Blank		Deionized Water	9/6/96	<10	<5.0	<5.0	<5.0	<5.0	ND	--	--	--	--	--	--	--	--	--

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** = BTEX presented in Table 4
MEK = Methylethylketone

*** = Results with units of mg/kg or ug/kg are included for presentation purposes only
ug/L = micrograms per liter or parts per billion
mg/kg = milligrams per kilogram or parts per million

ug/kg = micrograms per kilogram or parts per billion
<25 = Compound not detected at or above stated reporting limit
ND = Not detected
-- = Not tested

h = Sample extracted 3 days after prescribed holding time
J = Estimated value
+ = Also detected Di-n-octylphthalate at 5.5J ug/L
++ = Also detected Vinyl Chloride at 8,900 ug/L & Chloroethane at 2,400J ug/L
+++ = Also detected 4-Methylphenol at 4.7J ug/L
h = Sample extracted 3 days after prescribed holding time

TABLE 7
TOTAL AND DISSOLVED HEAVY METAL CONCENTRATIONS IN FREE PRODUCT AND GROUNDWATER
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	ANTIMONY (ug/L)	ARSENIC (ug/L)	BARIUM (ug/L)	BERYLL-IUM (ug/L)	CADMIUM (ug/L)	TOTAL CHROMIUM (ug/L)	COBALT (ug/L)	COPPER (ug/L)	LEAD (ug/L)	MERCURY (ug/L)	MOLYB-DENUM (ug/L)	NICKEL (ug/L)	SELEN-IUM (ug/L)	SILVER (ug/L)	THALL-IUM (ug/L)	VANAD-IUM (ug/L)	ZINC (ug/L)
Manhole-H_2O Layer	SCI	Oil Filled Manhole (Total Conc.)	J	Amer Bitumuls/ Port Petroleum	5/13/96	<60	8.8	210	<2.0	3.1	<10	<20	43	38	<0.20	<20	63	7.5	<5.0	<10	<10	97
Manhole-Oil Layer	SCI	Oil Filled Manhole (Total Conc.)	J	Amer Bitumuls/ Port Petroleum	5/13/96	<3.0**	0.86**	31**	<0.10**	0.62**	1.5**	<1.0**	3.9**	35**	<0.10**	<1.0**	5.0**	0.52**	<0.50**	<0.25**	3.7**	9.2**
MW-6 (FP)	SCI	Free Product (Total Conc.)	F	H-213 KOT AST Pipe Leak	5/24/96	<60	<5.0	170	<2.0	<2.0	<10	<20	<10	3.3	0.28	<20	<20	14	<5.0	<5.0	<10	34
MW-6(FP)	SCI	Free Product (Dissolved Conc.)	F	H-213 KOT AST Pipe Leak	5/24/96	<60	<5.0	320	<2.0	<2.0	<10	<20	<10	<3.0	0.43	<20	<20	13	<5.0	<5.0	<10	<20
MW-6	SCI	Monitoring Well (Dissolved Conc.)	F	H-213 KOT AST Pipe Leak	9/5/96	<60	8.9	420	<2.0	<2.0	<10	<20	<10	3.5	<0.20	<20	<20	27	<5.0	<5.0	<10	<20
MW-7	SCI	Monitoring Well (Dissolved Conc.)	M	H-107 KOT UST Excavation	9/5/96	<60	10	78	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	20	<5.0	<5.0	<10	<20
SCIMW-1	SCI	Monitoring Well (Total Conc.)	E	H-211/H-232 Lateral Loop	5/24/96	<60	45	1,000	2.8	2.3	63	<20	1,800	2,300	<0.20	<20	68	7.8	<5.0	<5.0	62	1,000
SCIMW-1	SCI	Monitoring Well (Dissolved Conc.)	E	H-211/H-232 Lateral Loop	5/24/96	<60	<5.0	170	2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	8.3	<5.0	<5.0	<10	<20
SCIMW-1	SCI	Monitoring Well (Dissolved Conc.)	E	H-211/H-232 Lateral Loop	9/6/96	<60	<5.0	150	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	17	<5.0	<5.0	<10	<20
SCIMW-2	SCI	Monitoring Well (Total Conc.)	N	Bay City/ East Bay Oil Co.	5/23/96	<60	14	90	<2.0	<2.0	12	<20	<10	2,300	0.64	<20	<20	14	<5.0	<5.0	<10	38
SCIMW-2	SCI	Monitoring Well (Dissolved Conc.)	N	Bay City/ East Bay Oil Co.	5/23/96	<60	11	490	<2.0	<2.0	<10	<20	69	62	<0.20	<20	<20	22	<5.0	<5.0	<10	110
SCIMW-2	SCI	Monitoring Well (Dissolved Conc.)	N	Bay City/ East Bay Oil Co.	9/4/96	<60	15	320	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	<5.0	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Monitoring Well (Total Conc.)	I	Amer Bitumuls/ Port Petroleum	5/23/96	<60	<5.0	<10	<2.0	<2.0	<10	58	<10	<3.0	<0.20	<20	<20	<5.0	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Monitoring Well (Dissolved Conc.)	I	Amer Bitumuls/ Port Petroleum	5/23/96	<60	<5.0	42	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	8.2	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Monitoring Well (Dissolved Conc.)	I	Amer Bitumuls/ Port Petroleum	9/5/96	<60	8.5	170	<2.0	<2.0	<10	<20	<10	4.6	<0.20	<20	<20	31	<5.0	<5.0	<10	<2.0
SCIMW-4	SCI	Monitoring Well (Dissolved Conc.)	L	Storm Drains	8/26/96	<60	12	37	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	22	<5.0	<5.0	<10	<20
SCIMW-5	SCI	Monitoring Well (Dissolved Conc.)	M	Storm Drains	9/3/96	<60	<5.0	290	2.0	2.0	<10	<20	<10	<3.0	0.23	<20	<20	<5.0	<5.0	<5.0	<10	<20
SCIMW-6	SCI	Monitoring Well (Dissolved Conc.)	C	H-207 Chemical Warehouse/Lakeside Metals	8/28/96	<60	<5.0	100	2.1	<2.0	<10	<20	59	<3.0	<0.20	<20	<20	<5.0	<5.0	<5.0	<10	240
SCIMW-7	SCI	Monitoring Well (Dissolved Conc.)	P/Q		9/6/96	<60	24	290	<2.0	<2.0	<10	<20	13	<3.0	0.52	<20	29	18	<5.0	<5.0	12	<20
SCIMW-8	SCI	Monitoring Well (Dissolved Conc.)	I	Amer Bitumuls/ Port Petroleum	8/26/96	<60	8.9	72	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	23	43	<5.0	<5.0	<10	21
SCIMW-9	SCI	Monitoring Well (Dissolved Conc.)	J	Amer Bitumuls/ Port Petroleum	8/29/96	<60	21	61	<2.0	<2.0	<10	<20	<10	3.1	0.20	<20	<20	37	<5.0	<5.0	<10	<20
SCIMW-10	SCI	Monitoring Well (Dissolved Conc.)	J	Amer Bitumuls/ Port Petroleum	8/26/96	<60	15	55	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	42	<5.0	<5.0	<10	<20
SCIMW-11	SCI	Monitoring Well (Dissolved Conc.)	N	Bay City/ East Bay Oil Co.	8/28/96	<60	<5.0	210	<2.0	<2.0	<10	<20	<10	<3.0	0.62	<20	<20	16	<5.0	<5.0	<10	<20
SCIMW-12	SCI	Monitoring Well (Dissolved Conc.)	O	H-203 Truck Repair	8/29/96	<60	5.1	64	2.5	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	<5.0	<5.0	<5.0	<10	<20
SCIMW-13	SCI	Monitoring Well (Dissolved Conc.)	J	Amer Bitumuls/ Port Petroleum	8/29/96	<60	20	33	<2.0	<2.0	<10	<20	<10	3.2	<0.20	<20	<20	43	<5.0	<5.0	<10	<20

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ug/L = micrograms per liter or parts per billion

<60 = Compound not detected at or above stated reporting limit
-- = Not tested

TABLE 7
TOTAL AND DISSOLVED HEAVY METAL CONCENTRATIONS IN FREE PRODUCT AND GROUNDWATER
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	ANTIMONY (ug/L)	ARSENIC (ug/L)	BARIUM (ug/L)	BERYLL-IUM (ug/L)	CADMIUM (ug/L)	TOTAL CHROMIUM (ug/L)	COBALT (ug/L)	COPPER (ug/L)	LEAD (ug/L)	MERCURY (ug/L)	MOLYB-DENUM (ug/L)	NICKEL (ug/L)	SELEN-IUM (ug/L)	SILVER (ug/L)	THALL-IUM (ug/L)	VANAD-IUM (ug/L)	ZINC (ug/L)
SCIMW-14	SCI	Monitoring Well (Dissolved Conc.)	I	Amer Bitumuls/ Port Petroleum	8/29/96	<60	9.7	130	<2.0	<2.0	<10	<20	<10	5.3	<0.20	<20	<20	34	<5.0	<5.0	<10	<20
SCIMW-15	SCI	Monitoring Well (Dissolved Conc.)	I	Amer Bitumuls/ Port Petroleum	8/29/96	<60	16	570	<2.0	<2.0	<10	<20	<10	3.2	<0.20	<20	<20	40	<5.0	<5.0	<10	<20
SCIMW-16	SCI	Monitoring Well (Dissolved Conc.)	R	H-318 Forklift Repair	8/30/96	<60	14	300	3.1	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	40	<5.0	<5.0	12	<20
SCIMW-17	SCI	Monitoring Well (Dissolved Conc.)	R	H-318 Forklift Repair	8/29/96	<60	17	960	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	18	<5.0	<5.0	<10	<20
SCIMW-18	SCI	Monitoring Well (Dissolved Conc.)	L	Storm Drains	9/6/96	<60	20	160	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	26	22	<5.0	<5.0	19	<20
SCIMW-19	SCI	Monitoring Well (Dissolved Conc.)	Q	Lakeside Metals	8/30/96	<60	32	140	<2.0	<2.0	<10	<20	<10	6.2	<0.20	<20	<20	32	<5.0	<5.0	11	<20
SCIMW-20	SCI	Monitoring Well (Dissolved Conc.)	Q	Lakeside Metals	9/3/96	<60	9.5	930	<2.0	<2.0	<10	<20	<10	<3.0	0.24	<20	<20	20	<5.0	<5.0	<10	<20
SCI-4	SCI	Temp. Well Point (Total Conc.)	I	Amer Bitumuls/ Port Petroleum	5/22/96	<60	33	230	<2.0	2.2	62	<20	<10	20	<0.20	<20	60	16	<5.0	<5.0	53	58
SCI-4	SCI	Temp. Well Point (Dissolved Conc.)	I	Amer Bitumuls/ Port Petroleum	5/22/96	<60	<5.0	32	<2.0	<2.0	<10	<20	<10	<3.0	1.3	<20	<20	8.9	<5.0	<5.0	<10	<20
SCI-5	SCI	Temp. Well Point (Total Conc.)	A/K	H-227 Yard UST	5/22/96	<60	15	270	<2.0	<2.0	12	<20	<10	11	0.59	<20	24	8.5	<5.0	<5.0	12	49
SCI-5	SCI	Temp. Well Point (Dissolved Conc.)	A/K	H-227 Yard UST	5/22/96	<60	<5.0	240	<2.0	<2.0	<10	<20	34	<3.0	2.8	<20	32	6.9	<5.0	<5.0	<10	80
SCI-11	SCI	Temp. Well Point (Total Conc.)	O	H-203 Truck Repair	5/23/96	<60	120	4,000	18	14	1,000	130	1,400	1,100	15	<20	1,200	41	<5.0	<5.0	800	2,100
SCI-11	SCI	Temp. Well Point (Dissolved Conc.)	O	H-203 Truck Repair	5/23/96	<60	<5.0	290	2.8	3.4	<10	<20	73	4.0	0.25	<20	180	23	<5.0	<5.0	11	320
SCI-14	SCI	Temp. Well Point (Total Conc.)	M	Storm Drains	5/23/96	<60	120	3,000	11	6.2	260	110	850	610	5.4	35	380	20	<5.0	<5.0	380	1,200
SCI-14	SCI	Temp. Well Point (Dissolved Conc.)	M	Storm Drains	5/23/96	<60	<5.0	59	2.6	<2.0	<10	<20	<10	<3.0	3.5	27	72	12	<5.0	<5.0	<10	270
SCI-15	SCI	Temp. Well Point (Total Conc.)	M	Storm Drains	5/23/96	<60	110	2,200	11	8.7	570	150	430	1,400	8.2	<20	630	25	<5.0	<5.0	550	2,200
SCI-15	SCI	Temp. Well Point (Dissolved Conc.)	M	Storm Drains	5/23/96	<60	<5.0	93	2.0	<2.0	<10	<20	12	<3.0	0.32	<20	<20	12	<5.0	<5.0	<10	50
SCI-16	SCI	Temp. Well Point (Total Conc.)	L	Storm Drains	5/24/96	<60	130	1,700	17	11	990	250	390	230	3.6	<20	1,100	31	<5.0	<5.0	780	1,100
SCI-16	SCI	Temp. Well Point (Dissolved Conc.)	L	Storm Drains	5/24/96	<60	5.1	310	<2.0	<2.0	<10	<20	<10	<3.0	<2.0	30	<20	18	<5.0	<5.0	26	<20
SCI-17	SCI	Temp. Well Point (Total Conc.)	M	Outfall East of H-107	5/28/96	<60	19	410	2.9	<2.0	28	<20	250	650	0.60	<20	41	<5.0	<5.0	7.0	30	310
SCI-17	SCI	Temp. Well Point (Dissolved Conc.)	M	Outfall East of H-107	5/28/96	<60	10	270	2.8	5.5	<10	<20	440	270	<0.20	<20	48	13	<5.0	<5.0	14	2,200
SCI-19	SCI	Temp. Well Point (Total Conc.)	L	Storm Drains	5/24/96	<60	690	17,000	80	130	1,400	1,000	2,100	2,500	13	34	2,000	200	<5.0	22	3,200	17,000
SCI-19	SCI	Temp. Well Point (Dissolved Conc.)	L	Storm Drains	5/24/96	<60	15	56	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	7.4	<5.0	<5.0	16	<20
SCI-20	SCI	Temp. Well Point (Total Conc.)	H	H-232 Oil Tanks	5/24/96	<60	350	4,400	27	29	1,800	760	1,100	1,100	6.5	25	3,000	99	<5.0	<5.0	1,400	5,300
SCI-20	SCI	Temp. Well Point (Dissolved Conc.)	H	H-232 Oil Tanks	5/24/96	<60	6.1	650	2.2	<2.0	<10	<20	<10	<3.0	<0.20	<20	37	18	<5.0	<5.0	<10	26

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TABLE 7
TOTAL AND DISSOLVED HEAVY METAL CONCENTRATIONS IN FREE PRODUCT AND GROUNDWATER
EIGHTH AVENUE STUDY AREA

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	AREA*	DATE SAMPLED	ANTIMONY (ug/L)	ARSENIC (ug/L)	BARIUM (ug/L)	BERYLL-IUM (ug/L)	CADMIUM (ug/L)	TOTAL CHROMIUM (ug/L)	COBALT (ug/L)	COPPER (ug/L)	LEAD (ug/L)	MERCURY (ug/L)	MOLYB-DENUM (ug/L)	NICKEL (ug/L)	SELEN-IUM (ug/L)	SILVER (ug/L)	THALL-IUM (ug/L)	VANAD-IUM (ug/L)	ZINC (ug/L)
SCI-23	SCI	Temp. Well Point (Total Conc.)	F	H-213 KOT AST Pipe Leak	5/31/96	<60	210	4,400	22	23	1,400	470	910	570	2.9	<20	1,600	46	<5.0	<5.0	1,100	1,900
SCI-23	SCI	Temp. Well Point (Dissolved Conc.)	F	H-213 KOT AST Pipe Leak	5/31/96	<60	6.7	440	2.2	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	22	<5.0	<5.0	<10	<20
SCI-27	SCI	Temp. Well Point (Total Conc.)	B/C	H-205/H-207	6/3/96	<60	4,300	37,000	65	990	3,600	1,000	100,000	140,000	350	29	2,900	110	<5.0	<5.0	3,100	250,000
SCI-27	SCI	Temp. Well Point (Dissolved Conc.)	B/C	H-205/H-207	6/3/96	<60	<5.0	190	2.3	130	<10	130	180	13	0.23	32	67	19	<5.0	<5.0	<10	2,000
SCI-32	SCI	Temp. Well Point (Dissolved Conc.)	Q	Lakeside Metals	8/29/96	<60	11	210	3.2	<2.0	<10	64	<10	<3.0	<0.20	<20	51	9.9	<5.0	<5.0	<10	<20
SCI-33	SCI	Temp. Well Point (Dissolved Conc.)	Q	Lakeside Metals	8/29/96	<60	29	390	<2.0	<2.0	<10	<20	<10	<3.0	<0.20	38	80	16	<5.0	<5.0	<10	<20
SCI-34	SCI	Temp. Well Point (Dissolved Conc.)	Q	Lakeside Metals	8/30/96	<60	15	1,200	<2.0	2.6	<10	<20	27	8.5	<0.20	<20	45	19	<5.0	<5.0	17	<20
SCI-38	SCI	Temp. Well Point (Dissolved Conc.)	J	Amer Bitumuls/ Port Petroleum	8/30/96	<60	21	1,800	2.4	<2.0	<10	<20	<10	<3.0	<0.20	<20	<20	28	<5.0	<5.0	11	<20
SCI-39	SCI	Temp. Well Point (Dissolved Conc.)	J	Amer Bitumuls/ Port Petroleum	8/30/96	<60	10	89	3.0	<2.0	<10	<20	<10	<3.0	<0.20	<20	20	21	<5.0	<5.0	<10	<20

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TABLE 8
SUMMARY OF GROUNDWATER ELEVATION DATA
EIGHTH AVENUE STUDY AREA

MONITORING WELL	DATE	TOP OF CASING ELEVATION	GROUNDWATER DEPTH (feet)	GROUNDWATER ELEVATION* (feet)
MW-1	9/20/93	9.99	5.20	4.79
MW-1	12/1/93	9.99	5.15	4.84
MW-1	3/31/94	9.99	4.09	5.90
MW-1	6/2/94	9.99	4.82	5.17
MW-1	9/30/94	9.99	5.63	4.36
MW-1	12/22/94	9.99	5.00	4.99
MW-1	4/10/95	9.99	4.94	5.05
MW-1	7/24/95	9.99	5.02	4.97
MW-1	11/10/95	9.99	5.52	4.47
MW-1	2/20/96	9.99	4.49	5.50
MW-1	5/24/96	9.99	5.04	4.95
MW-1	6/28/96	9.99	5.13	4.86
MW-1	7/29/96	9.99	5.21	4.78
MW-1	9/3/96	9.99	5.37	4.62
MW-1	9/9/96	9.99	5.65	4.34
MW-1	9/18/96	9.99	5.35	4.64
MW-1	9/23/96	9.99	5.36	4.63
MW-1	9/30/96	9.99	5.39	4.60
MW-1	10/28/96	9.99	5.09	4.90
MW-1	12/2/96	9.99	4.80	5.19
MW-2	9/20/93	10.32	4.40	5.92
MW-2	12/1/93	10.32	4.75	5.57
MW-2	3/31/94	10.32	5.01	5.31
MW-2	6/2/94	10.32	4.61	5.71
MW-2	9/30/94	10.32	4.93	5.39
MW-2	12/22/94	10.32	4.43	5.89
MW-2	4/10/95	10.32	4.03	6.29
MW-2	7/24/95	10.32	4.41	5.91
MW-2	11/10/95	10.32	4.59	5.73
MW-2	2/20/96	10.32	3.81	6.51
MW-2	5/24/96	10.32	4.41	5.91
MW-2	6/28/96	10.32	3.81	6.51
MW-2	7/29/96	10.32	3.81	6.51
MW-2	9/3/96	10.32	3.98	6.34
MW-2	9/9/96	10.32	4.00	6.32
MW-2	9/18/96	10.32	4.08	6.24
MW-2	9/23/96	10.32	4.08	6.24
MW-2	9/30/96	10.32	4.08	6.24
MW-2	10/28/96	10.32	4.34	5.98
MW-2	12/2/96	10.32	4.30	6.02
MW-3	9/20/93	10.18	15.20	-5.02+
MW-3	12/1/93	10.18	5.70	4.48
MW-3	3/31/94	10.18	4.23	5.95
MW-3	6/2/94	10.18	3.86	6.32
MW-3	9/30/94	10.18	5.44	4.74
MW-3	12/22/94	10.18	4.87	5.31
MW-3	4/10/95	10.18	7.64	2.54+

* = Port of Oakland Datum
+ = Elevation probably not static

TABLE 8
SUMMARY OF GROUNDWATER ELEVATION DATA
EIGHTH AVENUE STUDY AREA

MONITORING WELL	DATE	TOP OF CASING ELEVATION	GROUNDWATER DEPTH (feet)	GROUNDWATER ELEVATION* (feet)
MW-3	7/24/95	10.18	3.62	6.56
MW-3	11/10/95	10.18	5.11	5.07
MW-3	2/20/96	10.18	4.14	6.04
MW-3	5/24/96	10.18	4.49	5.69
MW-3	6/28/96	10.18	NA	NA
MW-3	7/29/96	10.18	4.64	5.54
MW-3	9/3/96	10.18	4.48	5.70
MW-3	9/18/96	10.18	6.42	3.76+
MW-3	9/23/96	10.18	6.06	4.12
MW-3	9/30/96	10.18	5.18	5.00
MW-3	10/28/96	10.18	4.83	5.35
MW-3	12/2/96	10.18	4.84	5.34
MW-4	9/20/93	11.98	5.80	6.18
MW-4	12/1/93	11.98	4.10	7.88
MW-4	3/31/94	11.98	4.20	7.78
MW-4	6/2/94	11.98	3.88	8.10
MW-4	9/30/94	11.98	5.80	6.18
MW-4	12/22/94	11.98	3.47	8.51
MW-4	4/10/95	11.98	3.80	8.18
MW-4	5/16/95	11.98	3.07	8.91
MW-4	7/24/95	11.98	3.65	8.33
MW-4	11/10/95	11.98	NA	NA
MW-4	2/20/96	11.98	NA	NA
MW-4	5/24/96	11.98	2.96	9.02
MW-4	6/28/96	11.98	3.93	8.05
MW-4	7/29/96	11.98	5.09	6.89
MW-4	9/3/96	11.98	4.65	7.33
MW-4	9/9/96	11.98	5.15	6.83
MW-4	9/18/96	11.98	5.45	6.53
MW-4	9/23/96	11.98	4.80	7.18
MW-4	9/30/96	11.98	4.88	7.10
MW-4	10/28/96	11.98	5.12	6.86
MW-4	12/2/96	11.98	3.22	8.76
MW-5	4/10/95	11.84	4.64	7.20
MW-5	7/24/95	11.84	5.24	6.60
MW-5	11/10/95	11.84	5.38	6.46
MW-5	2/20/96	11.84	2.69	9.15
MW-5	5/24/96	11.84	2.67	9.17
MW-5	6/28/96	11.84	5.29	6.55
MW-5	7/29/96	11.84	5.35	6.49
MW-5	9/3/96	11.84	5.44	6.40
MW-5	9/9/96	11.84	5.45	6.39
MW-5	9/18/96	11.84	5.51	6.33
MW-5	9/23/96	11.84	5.51	6.33
MW-5	9/30/96	11.84	5.49	6.35
MW-5	10/28/96	11.84	5.56	6.28
MW-5	12/2/96	11.84	4.64	7.20

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+ = Elevation probably not static

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SUMMARY OF GROUNDWATER ELEVATION DATA
EIGHTH AVENUE STUDY AREA

MONITORING WELL	DATE	TOP OF CASING ELEVATION	GROUNDWATER DEPTH (feet)	GROUNDWATER ELEVATION* (feet)
MW-6	4/10/95	11.86	4.12	7.74
MW-6	7/24/95	11.86	5.19	6.67
MW-6	11/10/95	11.86	NA	NA
MW-6	2/20/96	11.86	NA	NA
MW-6	5/24/96	11.86	NA	7.71
MW-6	6/28/96	11.86	4.89	6.97
MW-6	7/29/96	11.86	5.00	6.86
MW-6	9/3/96	11.86	5.19	6.67
MW-6	9/9/96	11.86	5.29	6.57
MW-6	9/18/96	11.86	5.34	6.52
MW-6	9/23/96	11.86	5.17	6.69
MW-6	9/30/96	11.86	5.10	6.76
MW-6	10/28/96	11.86	5.23	6.63
MW-6	12/2/96	11.86	3.96	7.90
MW-7	4/10/95	10.13	4.41	5.72
MW-7	7/24/95	10.13	3.72	6.41
MW-7	11/10/95	10.13	4.78	5.35
MW-7	2/20/96	10.13	4.13	6.00
MW-7	5/24/96	10.13	4.69	5.44
MW-7	6/28/96	10.13	3.81	6.32
MW-7	7/29/96	10.13	4.32	5.81
MW-7	9/3/96	10.13	4.65	5.48
MW-7	9/9/96	10.13	4.79	5.34
MW-7	9/18/96	10.13	4.45	5.68
MW-7	9/23/96	10.13	4.28	5.85
MW-7	9/30/96	10.13	4.18	5.95
MW-7	10/28/96	10.13	4.48	5.65
MW-7	12/2/96	10.13	4.88	5.25
SCIMW-1	5/24/96	10.37	5.28	5.09
SCIMW-1	6/28/96	10.37	5.75	4.62
SCIMW-1	7/29/96	10.37	5.81	4.56
SCIMW-1	9/3/96	10.37	5.98	4.39
SCIMW-1	9/9/96	10.37	6.04	4.33
SCIMW-1	9/18/96	10.37	6.04	4.33
SCIMW-1	9/23/96	10.37	6.07	4.30
SCIMW-1	9/30/96	10.37	6.00	4.37
SCIMW-1	10/28/96	10.37	6.10	4.27
SCIMW-1	12/2/96	10.37	5.52	4.85
SCIMW-2	5/24/96	9.92	5.88	4.04
SCIMW-2	6/28/96	9.92	7.33	2.59
SCIMW-2	7/29/96	9.92	7.43	2.49
SCIMW-2	9/3/96	9.92	6.54	3.38
SCIMW-2	9/9/96	9.92	4.67	5.25
SCIMW-2	9/18/96	9.92	6.50	3.42
SCIMW-2	9/23/96	9.92	3.78	6.14

* = Port of Oakland Datum
+ = Elevation probably not static

TABLE 8
SUMMARY OF GROUNDWATER ELEVATION DATA
EIGHTH AVENUE STUDY AREA

MONITORING WELL	DATE	TOP OF CASING ELEVATION	GROUNDWATER DEPTH (feet)	GROUNDWATER ELEVATION* (feet)
SCIMW-2	9/30/96	9.92	6.18	3.74
SCIMW-2	10/28/96	9.92	3.72	6.20
SCIMW-2	12/2/96	9.92	6.60	3.32
SCIMW-3	5/24/96	11.87	4.65	7.22
SCIMW-3	6/28/96	11.87	4.86	7.01
SCIMW-3	7/29/96	11.87	5.03	6.84
SCIMW-3	9/3/96	11.87	5.20	6.67
SCIMW-3	9/9/96	11.87	5.28	6.59
SCIMW-3	9/18/96	11.87	5.24	6.63
SCIMW-3	9/23/96	11.87	5.26	6.61
SCIMW-3	9/30/96	11.87	5.31	6.56
SCIMW-3	10/17/96	11.87	5.43	6.44
SCIMW-3	10/28/96	11.87	5.58	6.29
SCIMW-3	12/2/96	11.87	5.78	6.09
SCIMW-4	9/9/96	10.03	4.53	5.50
SCIMW-4	9/18/96	10.03	4.54	5.49
SCIMW-4	9/23/96	10.03	4.32	5.71
SCIMW-4	9/30/96	10.03	4.37	5.66
SCIMW-4	10/28/96	10.03	3.75	6.28
SCIMW-4	12/2/96	10.03	2.09	7.94
SCIMW-5	9/9/96	10.19	5.56	4.63
SCIMW-5	9/18/96	10.19	4.68	5.51
SCIMW-5	9/23/96	10.19	4.42	5.77
SCIMW-5	9/30/96	10.19	4.44	5.75
SCIMW-5	10/28/96	10.19	4.40	5.79
SCIMW-5	12/2/96	10.19	4.95	5.24
SCIMW-6	9/9/96	10.55	5.86	4.69
SCIMW-6	9/18/96	10.55	6.54	4.01
SCIMW-6	9/23/96	10.55	5.47	5.08
SCIMW-6	9/30/96	10.55	6.44	4.11
SCIMW-6	10/28/96	10.55	5.93	4.62
SCIMW-6	12/2/96	10.55	7.04	3.51
SCIMW-7	9/9/96	12.26	8.95	3.31+
SCIMW-7	9/18/96	12.26	6.87	5.39
SCIMW-7	9/23/96	12.26	6.95	5.31
SCIMW-7	9/30/96	12.26	7.04	5.22
SCIMW-7	10/28/96	12.26	7.40	4.86
SCIMW-7	12/2/96	12.26	4.95	7.31
SCIMW-8	9/9/96	12.81	5.70	7.11
SCIMW-8	9/18/96	12.81	5.81	7.00
SCIMW-8	9/23/96	12.81	5.79	7.02
SCIMW-8	9/30/96	12.81	5.89	6.92
SCIMW-8	10/17/96	12.81	5.95	6.86

* = Port of Oakland Datum
+ = Elevation probably not static

TABLE 8
SUMMARY OF GROUNDWATER ELEVATION DATA
EIGHTH AVENUE STUDY AREA

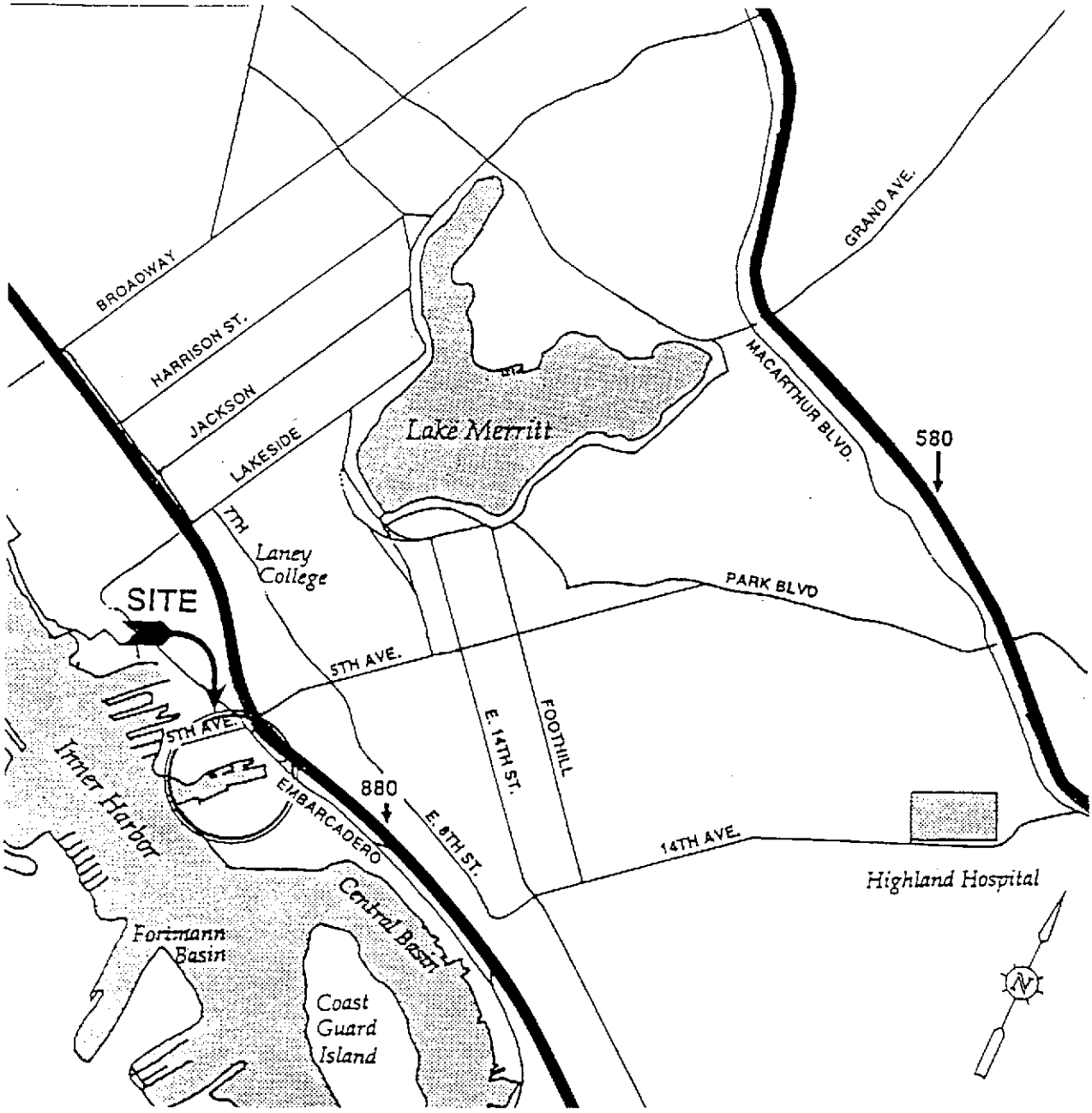
MONITORING WELL	DATE	TOP OF CASING ELEVATION	GROUNDWATER DEPTH (feet)	GROUNDWATER ELEVATION* (feet)
SCIMW-8	10/28/96	12.81	6.13	6.68
SCIMW-8	12/2/96	12.81	5.39	7.42
SCIMW-9	9/9/96	11.32	4.92	6.40
SCIMW-9	9/18/96	11.32	4.94	6.38
SCIMW-9	9/23/96	11.32	4.94	6.38
SCIMW-9	9/30/96	11.32	4.92	6.40
SCIMW-9	10/17/96	11.32	4.97	6.35
SCIMW-9	10/28/96	11.32	5.07	6.25
SCIMW-9	12/2/96	11.32	4.71	6.61
SCIMW-10	9/9/96	12.56	4.61	7.95
SCIMW-10	9/18/96	12.56	4.87	7.69
SCIMW-10	9/23/96	12.56	4.81	7.75
SCIMW-10	9/30/96	12.56	4.91	7.65
SCIMW-10	10/17/96	12.56	5.03	7.53
SCIMW-10	10/28/96	12.56	5.31	7.25
SCIMW-10	12/2/96	12.56	5.15	7.41
SCIMW-11	9/9/96	9.49	5.66	3.83
SCIMW-11	9/18/96	9.49	6.39	3.10
SCIMW-11	9/23/96	9.49	4.12	5.37
SCIMW-11	9/30/96	9.49	6.24	3.25
SCIMW-11	10/28/96	9.49	5.46	4.03
SCIMW-11	12/2/96	9.49	6.03	3.46
SCIMW-12	9/9/96	10.94	6.85	4.09
SCIMW-12	9/18/96	10.94	7.24	3.70
SCIMW-12	9/23/96	10.94	5.59	5.35
SCIMW-12	9/30/96	10.94	7.26	3.68
SCIMW-12	10/28/96	10.94	7.00	3.94
SCIMW-12	12/2/96	10.94	7.31	3.63
SCIMW-13	9/9/96	12.56	5.35	7.21
SCIMW-13	9/18/96	12.56	5.47	7.09
SCIMW-13	9/23/96	12.56	5.51	7.05
SCIMW-13	9/30/96	12.56	4.94	7.62
SCIMW-13	10/17/96	12.56	5.70	6.86
SCIMW-13	10/28/96	12.56	5.86	6.70
SCIMW-13	12/2/96	12.56	5.91	6.65
SCIMW-14	9/9/96	13.64	8.28	5.36
SCIMW-14	9/18/96	13.64	8.50	5.14
SCIMW-14	9/23/96	13.64	8.18	5.46
SCIMW-14	9/30/96	13.64	8.41	5.23
SCIMW-14	10/28/96	13.64	8.43	5.21
SCIMW-14	12/2/96	13.64	8.56	5.08
SCIMW-15	9/9/96	13.45	8.60	4.85

* = Port of Oakland Datum
+ = Elevation probably not static

TABLE 8
SUMMARY OF GROUNDWATER ELEVATION DATA
EIGHTH AVENUE STUDY AREA

MONITORING WELL	DATE	TOP OF CASING ELEVATION	GROUNDWATER DEPTH (feet)	GROUNDWATER ELEVATION* (feet)
SCIMW-15	9/18/96	13.45	8.61	4.84
SCIMW-15	9/23/96	13.45	8.62	4.83
SCIMW-15	9/30/96	13.45	8.51	4.94
SCIMW-15	10/28/96	13.45	8.72	4.73
SCIMW-15	12/2/96	13.45	8.91	4.54
SCIMW-16	9/9/96	10.40	3.59	6.81
SCIMW-16	9/18/96	10.40	3.46	6.94
SCIMW-16	9/23/96	10.40	3.44	6.96
SCIMW-16	9/30/96	10.40	3.44	6.96
SCIMW-16	10/28/96	10.40	4.39	6.01
SCIMW-16	12/2/96	10.40	3.64	6.76
SCIMW-17	9/9/96	10.14	3.59	6.55
SCIMW-17	9/18/96	10.14	2.83	7.31
SCIMW-17	9/23/96	10.14	2.96	7.18
SCIMW-17	9/30/96	10.14	3.00	7.14
SCIMW-17	10/28/96	10.14	3.04	7.10
SCIMW-17	12/2/96	10.14	2.86	7.28
SCIMW-18	9/9/96	10.81	5.59	5.22+
SCIMW-18	9/18/96	10.81	3.86	6.95
SCIMW-18	9/23/96	10.81	3.82	6.99
SCIMW-18	9/30/96	10.81	3.85	6.96
SCIMW-18	10/17/96	10.81	4.00	6.81
SCIMW-18	10/28/96	10.81	4.18	6.63
SCIMW-18	12/2/96	10.81	4.06	6.75
SCIMW-19	9/9/96	10.46	4.30	6.16
SCIMW-19	9/18/96	10.46	4.36	6.10
SCIMW-19	9/23/96	10.46	4.32	6.14
SCIMW-19	9/30/96	10.46	4.23	6.23
SCIMW-19	10/28/96	10.46	4.45	6.01
SCIMW-19	12/2/96	10.46	3.54	6.92
SCIMW-20	9/9/96	9.11	2.08	7.03
SCIMW-20	9/18/96	9.11	2.27	6.84
SCIMW-20	9/23/96	9.11	2.26	6.85
SCIMW-20	9/30/96	9.11	2.34	6.77
SCIMW-20	10/28/96	9.11	2.68	6.43
SCIMW-20	12/2/96	9.11	1.45	7.66

* = Port of Oakland Datum
+ = Elevation probably not static



SITE VICINITY MAP

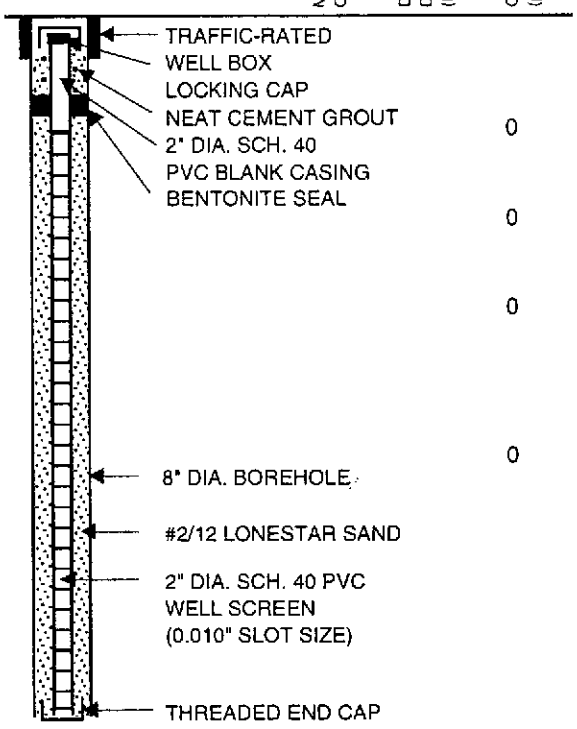
Subsurface Consultants

8TH AVENUE STUDY AREA–OAKLAND, CA

JOB NUMBER	DATE	APPROVED	PLATE
133.005	6/21/96	BP	1

LOG OF TEST BORING SCIMW-4

EQUIPMENT 8" Dia. Hollow Stem Auger
DATE DRILLED 8/19/96
ELEVATION 10.03 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT
		0	0		
		0	5		6
		0			2
					2
		0	10		1
			15		
			20		
			25		
			30		
			35		
			40		

ASPHALTIC CONCRETE - 5 inches thick
BROWN SANDY GRAVEL (GW)
medium dense, moist (fill)
GROUNDWATER LEVEL AFTER DRILLING
BROWN SANDY CLAY (CL)
soft, moist (fill)
GRAY CLAYEY SILT (ML)
medium stiff, moist (fill)
GRAY CLAYEY SILT (ML-MH)
very soft, wet, with sand lenses (Bay Mud)

SAMPLER TYPES:
MONITORING WELLS: MODIFIED CALIFORNIA DRIVE
O.D.: 3.0 inches
I.D.: 2.5 inches
OTHER BORINGS: ENVIRO-CORE DRIVE
O.D.: 2-3/8 inches
I.D.: 1-11/16 inches

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

⊠ = BAG SAMPLE

ELEVATION REFERENCE: PORT OF OAKLAND DATUM, 0 = 3.2 FEET BELOW MEAN SEA LEVEL

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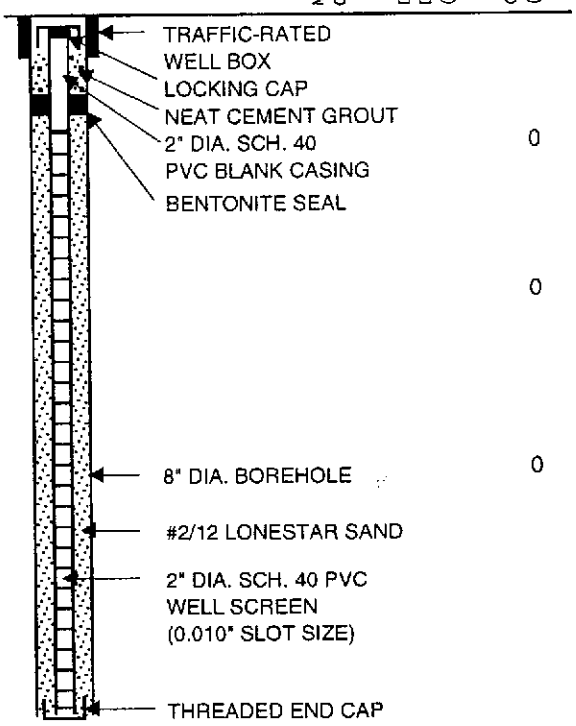
8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005
DATE 9/5/96
APPROVED

PLATE 4

LOG OF TEST BORING SCIMW-5

EQUIPMENT 8" Dia. Hollow Stem Auger
DATE DRILLED 8/19/96
ELEVATION 10.19 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			ASPHALTIC CONCRETE - 7 inches thick
						BROWN SANDY GRAVEL (GW)
					17	stiff, moist (fill)
		0	5		20	DARK BROWN GRAVELLY SAND (SW)
						dense, wet (fill)
		0				GRAY SILTY CLAY (CL)
						stiff, moist (fill)
			10		▼	GROUNDWATER LEVEL AFTER DRILLING
		0			3	GRAY CLAYEY SILT (ML)
						soft, wet (Bay Mud)
			15			
			20			
			25			
			30			
			35			
			40			

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005 | DATE 9/5/96 | APPROVED

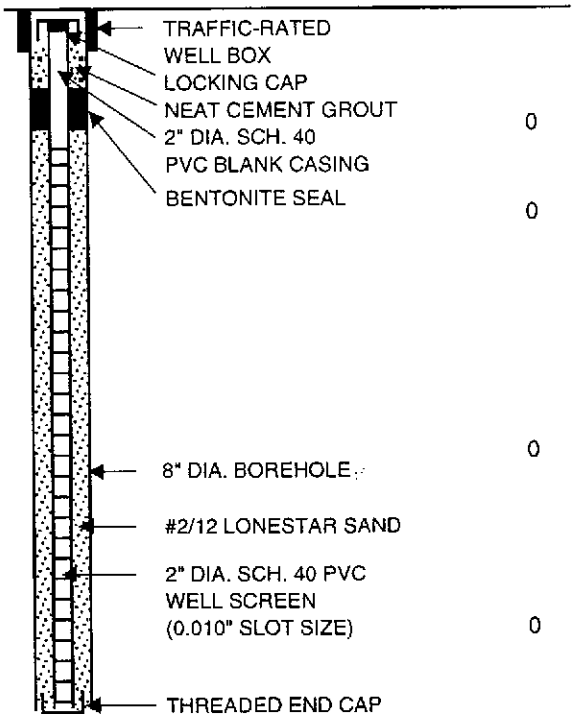
PLATE 5

LOG OF TEST BORING SCIMW-6

EQUIPMENT 8" Dia. Hollow Stem Auger

DATE DRILLED 8/19/96

ELEVATION 10.55 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
		0	0		14	ASPHALTIC CONCRETE - 2 inches thick BROWN SANDY GRAVEL (GW) dense, moist (fill)
		0	5		10	BROWN GRAVELLY SAND (SW) dense, moist (fill)
					▼	GROUNDWATER LEVEL AFTER DRILLING
					6	BROWN SILTY SAND (SM) medium dense, wet, with gravel (fill)
						DARK BROWN SILTY SAND (SM) loose, wet, with gravel (fill)
		0	10		12	
			15		2	GRAY CLAYEY SILT (ML) soft, wet, with sand (Bay Mud)
			20			
			25			
			30			
			35			
			40			

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

DATE 9/5/96

APPROVED

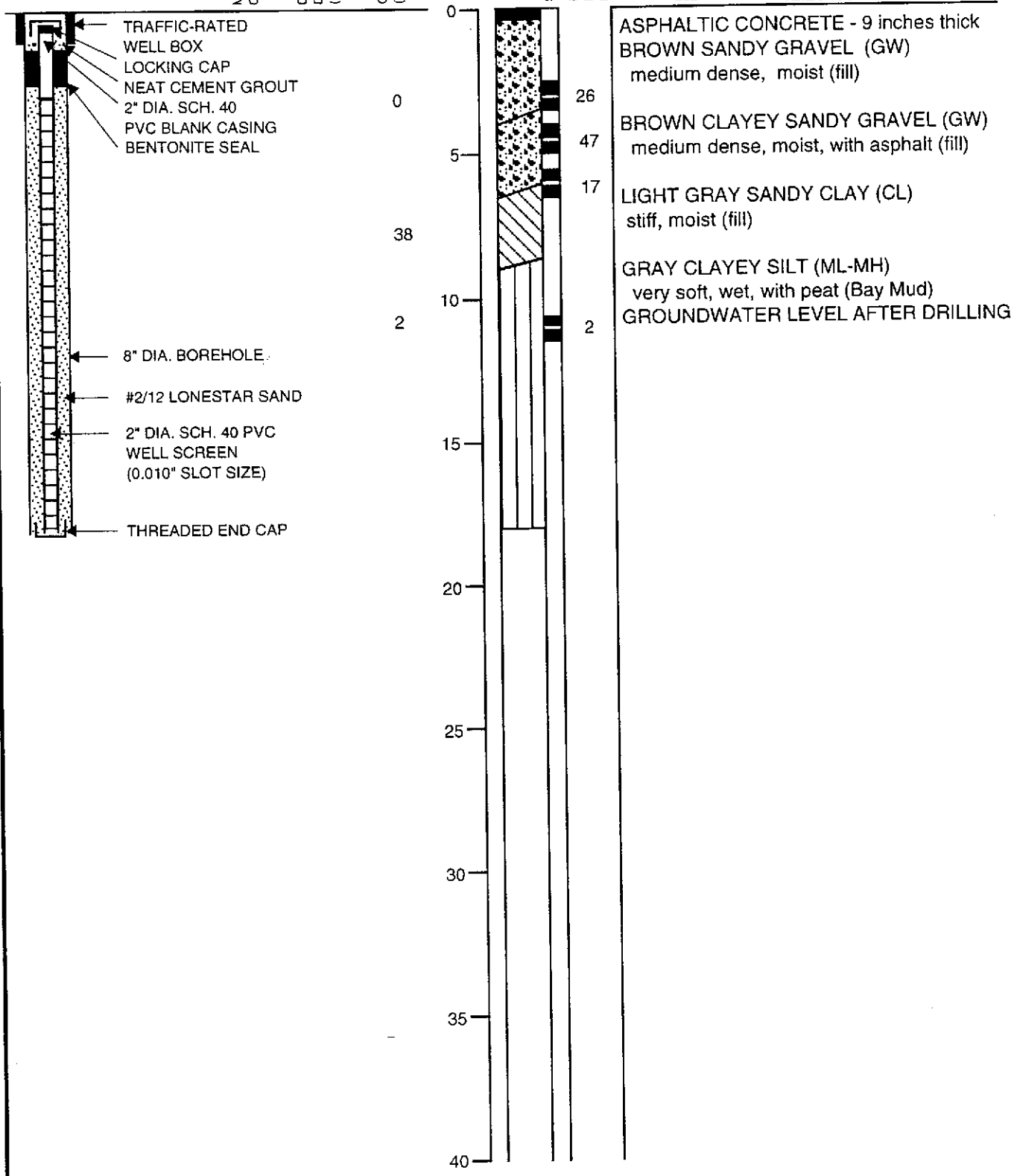
PLATE 6

LOG OF TEST BORING SCIMW-7

EQUIPMENT 8" Dia. Hollow Stem Auger

DATE DRILLED 8/20/96

ELEVATION 12.26 feet



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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

DATE 9/5/96

APPROVED

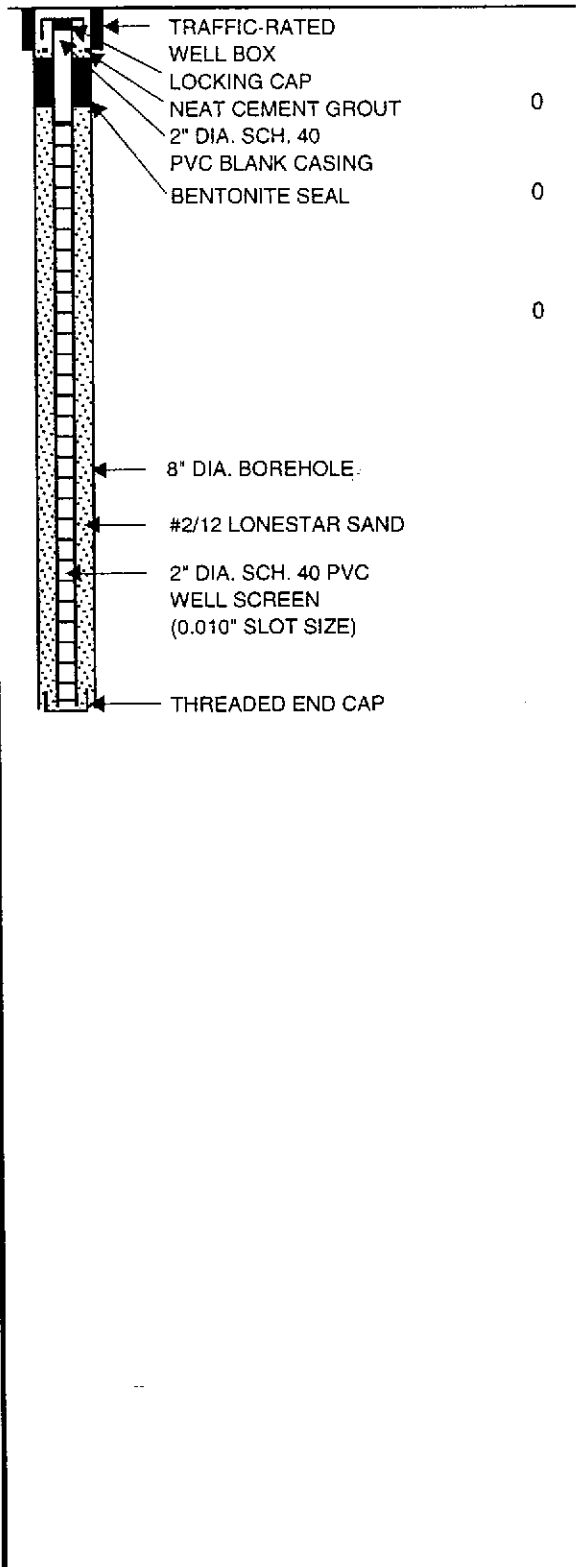
PLATE 7

LOG OF TEST BORING SCIMW-8

EQUIPMENT 8" Dia. Hollow Stem Auger

DATE DRILLED 8/20/96

ELEVATION 12.81 feet



ASPHALTIC CONCRETE - 8 inches thick

BROWN SANDY GRAVEL (GW)
loose, moist (fill)

GREEN-GRAY SILTY CLAY (CL)
stiff, moist , with sand (fill)

GROUNDWATER LEVEL AFTER DRILLING

Becomes finer grained sand and wet at 5.5 feet

GRAY CLAYEY SAND (SC)
medium dense, moist (fill)

GRAY CLAYEY SILT (ML)
soft, wet (Bay Mud)

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

DATE 9/5/96

APPROVED

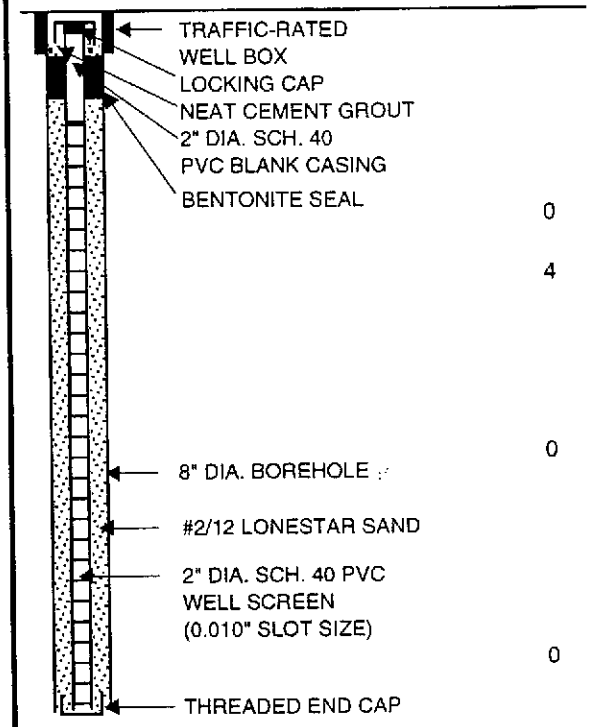
PLATE 8

LOG OF TEST BORING SCIMW-9

EQUIPMENT 8" Dia. Hollow Stem Auger

DATE DRILLED 8/21/96

ELEVATION 11.32 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			ASPHALTIC CONCRETE - 3 inches thick
						BROWN SANDY GRAVEL (GW)
						dense, moist , with asphalt (fill)
					50/4"	GRAYISH-GREEN SANDY GRAVEL (GW)
			5		53	dense, moist (fill)
		0			▼	GROUNDWATER LEVEL AFTER DRILLING
		4			10	GRAY SANDY CLAY (CL)
						medium stiff, moist (fill)
			10		4	
		0				GRAY CLAYEY SILT (ML)
						soft, wet (Bay Mud)
			15		4	
		0				
			20			
			25			
			30			
			35			
			40			

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

DATE 9/5/96

APPROVED

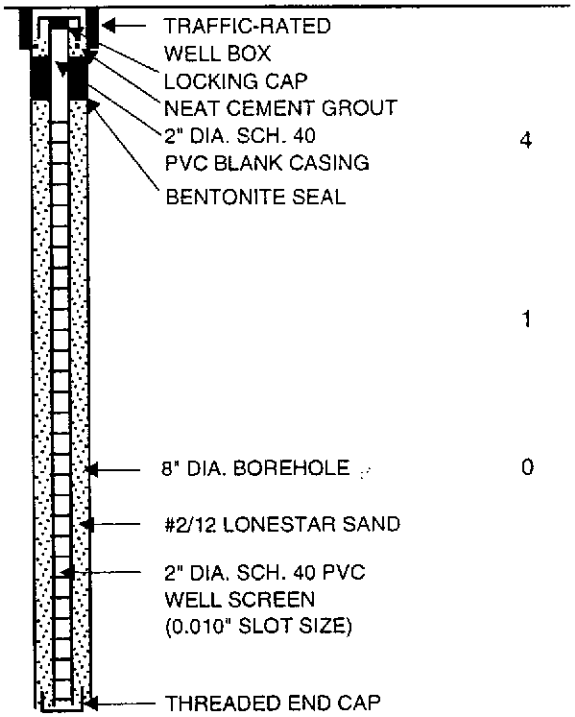
PLATE 9

LOG OF TEST BORING SCIMW-10

EQUIPMENT 8" Dia. Hollow Stem Auger

DATE DRILLED 8/21/96

ELEVATION 12.56 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			ASPHALTIC CONCRETE - 6 inches thick
						BROWN SANDY GRAVEL (GW)
						dense, moist (fill)
		4			30	
			5		▼ 9	GROUNDWATER LEVEL AFTER DRILLING
						LIGHT GRAY SILTY CLAY (CL)
						medium stiff, moist (fill)
					8	BLACK CLAYEY SILT (ML)
		1				medium stiff, moist, with wood fragments (fill)
			10			GRAY SANDY SILT (ML)
					6	medium stiff, moist, with shells and wood fragments (fill)
		0				GRAY CLAYEY SILT (ML-MH)
						soft, wet (Bay Mud)
			15			
			20			
			25			
			30			
			35			
			40			

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

DATE 9/5/96

APPROVED

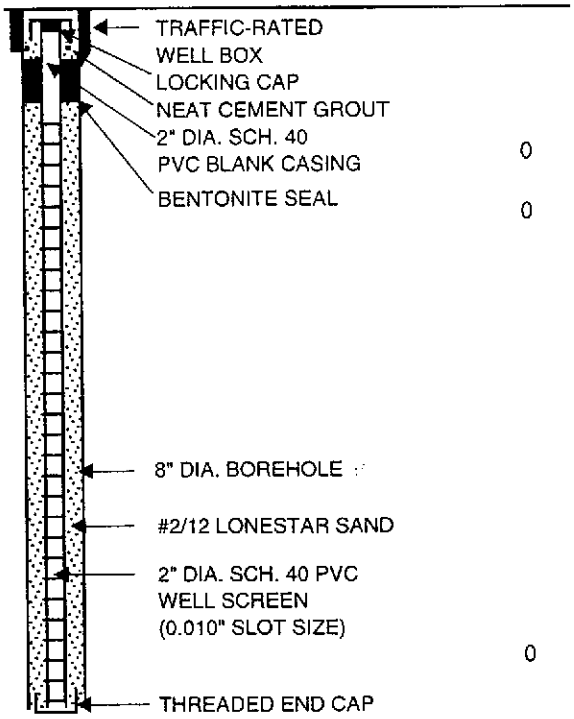
PLATE 10

LOG OF TEST BORING SCIMW-11

EQUIPMENT 8" Dia. Hollow Stem Auger

DATE DRILLED 8/22/96

ELEVATION 9.49 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			ASPHALTIC CONCRETE - 5 inches thick
						RED-BROWN SANDY GRAVEL (GW) very dense, moist (fill)
		0			50/5"	
					51	BROWN SANDY GRAVEL (GC) very dense, moist (fill)
		0	5		▼ 24	GROUNDWATER LEVEL AFTER DRILLING
						BLACK GRAVELLY SAND (SW) dense, wet (fill)
						DARK GRAY SANDY CLAY (CL) stiff, moist, hydrocarbon odor at 8 feet (fill)
						BROWN GRAVELLY SAND (SW) dense, wet, with clay (fill)
			10		24	Becomes dark brown at 9 feet
						GRAY SANDY CLAY (CL-CH) soft, wet
			15		5	
		0				GRAY CLAYEY SILT (ML-MH) soft, wet (Bay Mud)
			20			
			25			
			30			
			35			
			40			

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

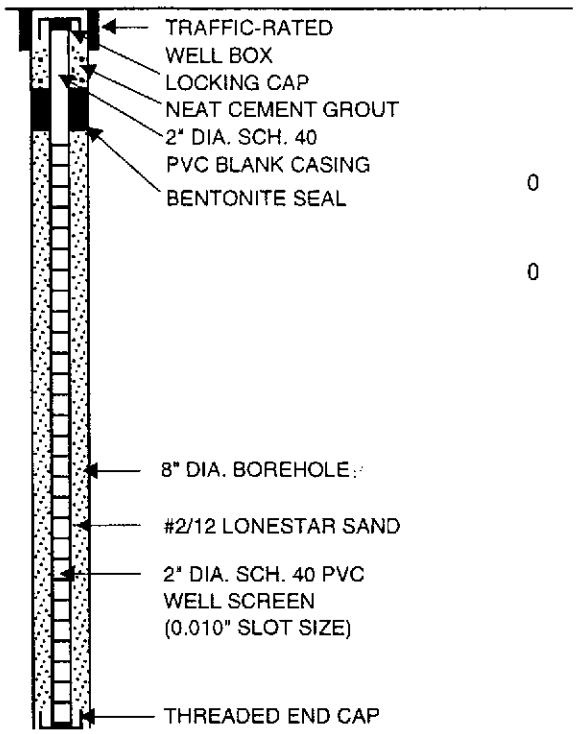
DATE 9/5/96

APPROVED

PLATE 11

LOG OF TEST BORING SCIMW-12

EQUIPMENT 8" Dia. Hollow Stem Auger
DATE DRILLED 8/22/96
ELEVATION 10.94 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			ASPHALTIC CONCRETE - 10 inches thick
						BROWN SANDY GRAVEL (GW)
						medium dense, moist (fill)
					14	BROWN CLAYEY SAND (SC)
		0	5		8	medium dense, moist, with gravel (fill)
					8 ▼	BROWN SANDY CLAY (CL)
		0				medium stiff, moist (fill)
						GROUNDWATER LEVEL AFTER DRILLING
			10			GRAY SANDY SILT (ML)
					12	medium stiff, wet
						GRAY CLAYEY SILT (ML-MH)
			15		4	soft, wet (Bay Mud)
			20			
			25			
			30			
			35			
			40			

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

DATE 9/5/96

APPROVED

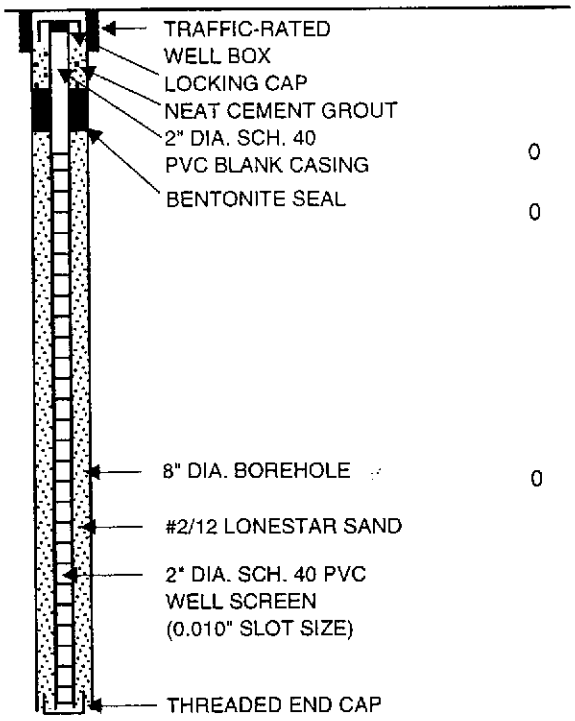
PLATE 12

LOG OF TEST BORING SCIMW-13

EQUIPMENT 8" Dia. Hollow Stem Auger

DATE DRILLED 8/22/96

ELEVATION 12.56 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			ASPHALTIC CONCRETE - 5 inches thick
						GRAY SANDY GRAVEL (GW)
						medium dense, moist (fill)
		0			31	GRAYISH-GREEN SILTY SAND (SM)
					17	medium dense, moist (fill)
			5		▼	GROUNDWATER LEVEL AFTER DRILLING
		0			9	GRAY CLAYEY SAND (SC)
						medium dense, moist, with gravel lenses
						and hydrocarbon odor at 5 feet (fill)
			10		1	
		0				GRAY CLAYEY SILT (ML-MH)
						soft, moist to wet (Bay Mud)
			15			
			20			
			25			
			30			
			35			
			40			

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

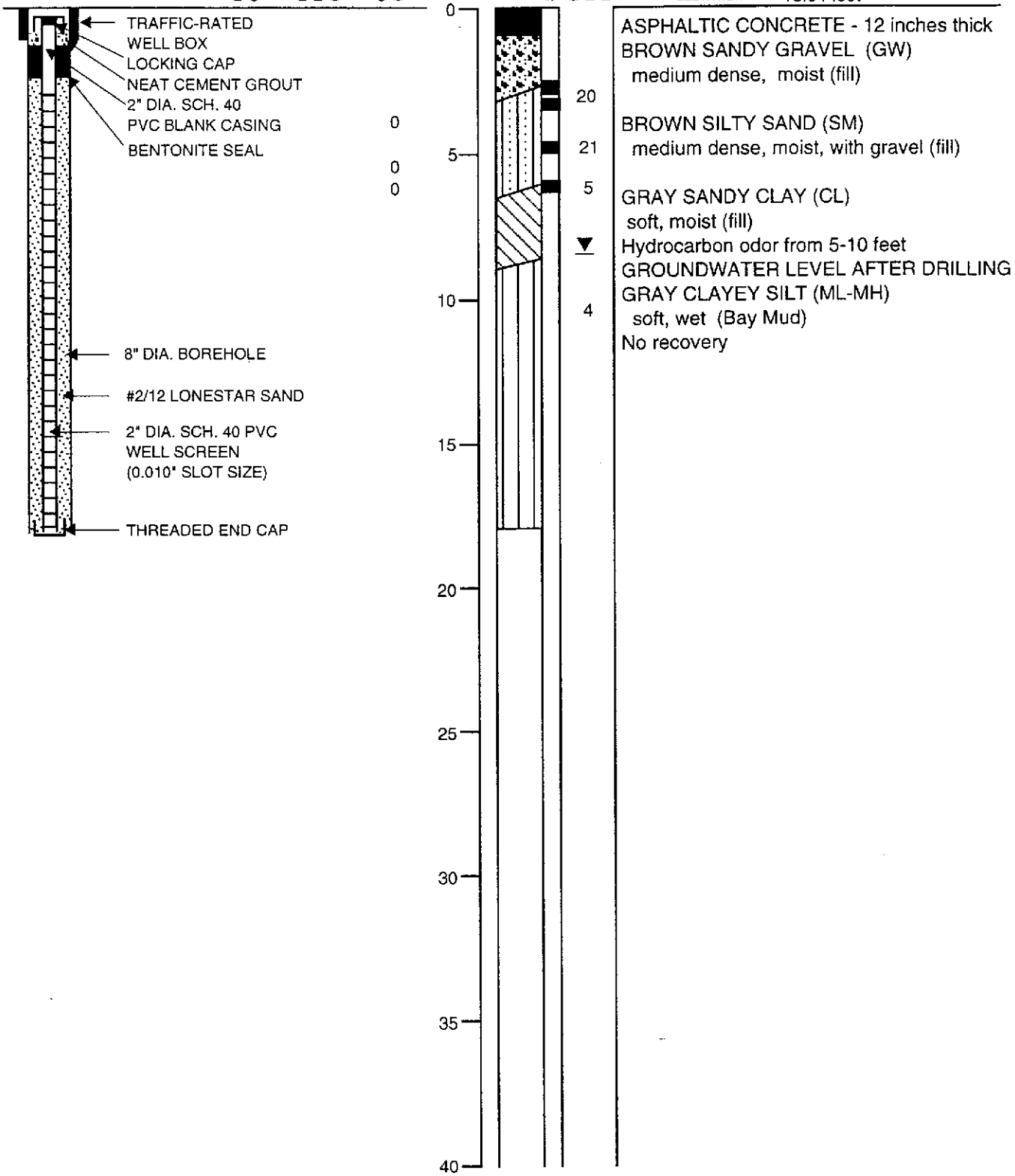
DATE 9/5/96

APPROVED

PLATE 13

LOG OF TEST BORING SCIMW-14

EQUIPMENT 8" Dia. Hollow Stem Auger
DATE DRILLED 8/23/96
ELEVATION 13.64 feet



ASPHALTIC CONCRETE - 12 inches thick
BROWN SANDY GRAVEL (GW)
medium dense, moist (fill)

BROWN SILTY SAND (SM)
medium dense, moist, with gravel (fill)

GRAY SANDY CLAY (CL)
soft, moist (fill)
Hydrocarbon odor from 5-10 feet
▼ GROUNDWATER LEVEL AFTER DRILLING
GRAY CLAYEY SILT (ML-MH)
soft, wet (Bay Mud)
No recovery

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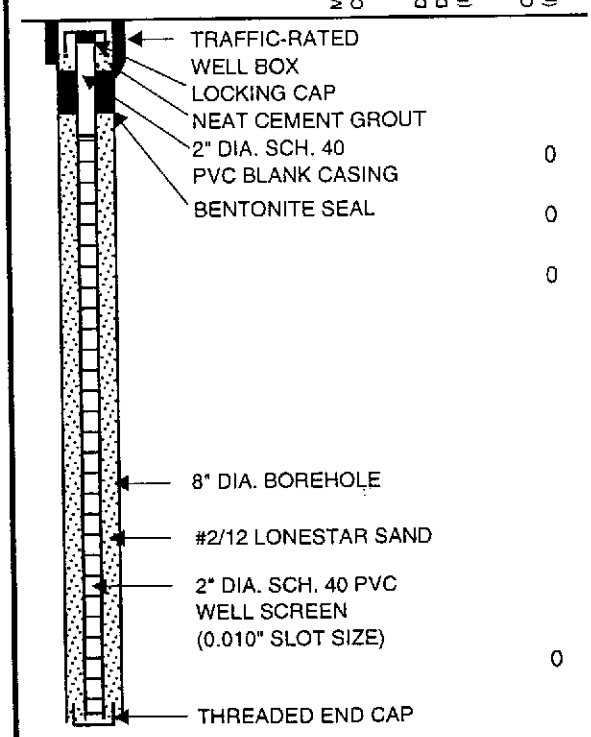
JOB NUMBER 133.005
DATE 9/5/96
APPROVED

PLATE 14

LOG OF TEST BORING SCIMW-15

EQUIPMENT 8" Dia. Hollow Stem Auger
DATE DRILLED 8/23/96
ELEVATION 13.45 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			ASPHALTIC CONCRETE - 12 inches thick
						BROWN SANDY GRAVEL (GW)
						medium dense, moist (fill)
		0			43	BROWN SILTY SAND (SM)
			5		22	medium dense, moist (fill)
		0			9	GRAY CLAYEY SAND (SC)
						medium dense, moist (fill)
		0			▼	GROUNDWATER LEVEL AFTER DRILLING
			10		50/5"	GRAY CLAYEY SILT (ML-MH)
						soft, wet (Bay Mud)
						No Sample Recovered
			15		4	
			20			
			25			
			30			
			35			
			40			

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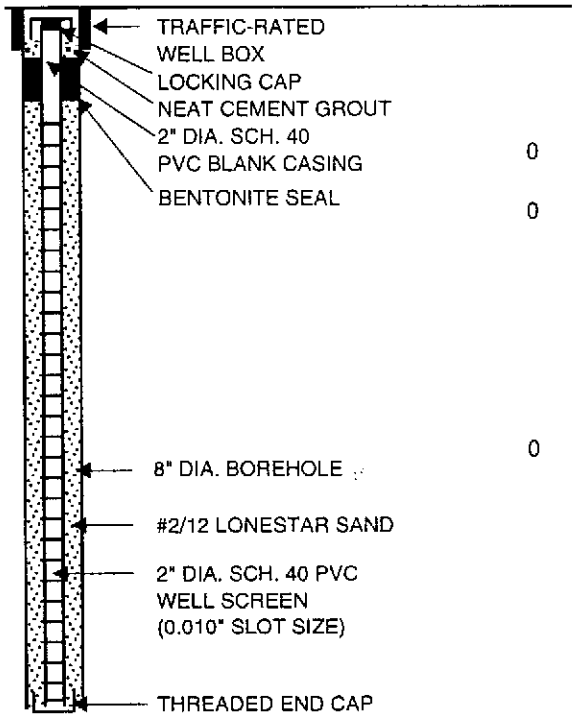
JOB NUMBER 133.005 | DATE 9/5/96 | APPROVED

PLATE 15

LOG OF TEST BORING SCIMW-16

EQUIPMENT 8" Dia. Hollow Stem Auger
DATE DRILLED 8/26/96
ELEVATION 10.40 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT
		0	0		
		0	5		12
					11
					10
		0	10		5
			15		
			20		
			25		
			30		
			35		
			40		

ASPHALTIC CONCRETE - 6 inches thick
BROWN GRAVELLY SAND (SW)
loose, moist (fill)
GRAY AND BROWN SILTY CLAY (CL)
stiff, moist, with sand (fill)
GROUNDWATER LEVEL AFTER DRILLING
BROWN SANDY CLAY (CL)
medium stiff, moist (fill)

GRAY CLAYEY SILT (ML)
soft, wet, with sand lenses (Bay Mud)

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JOB NUMBER 133.005
DATE 9/5/96
APPROVED

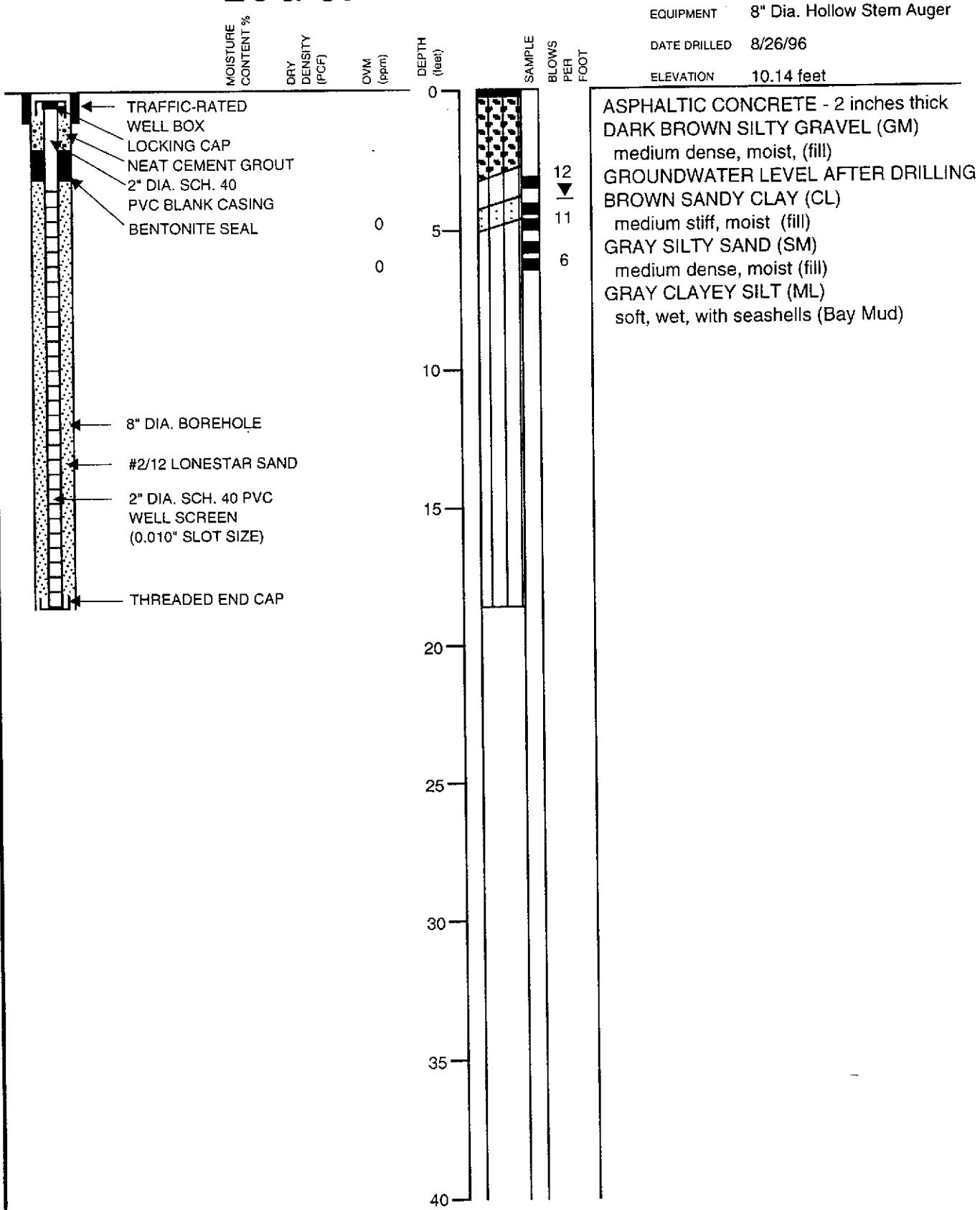
PLATE 16

LOG OF TEST BORING SCIMW-17

EQUIPMENT 8" Dia. Hollow Stem Auger

DATE DRILLED 8/26/96

ELEVATION 10.14 feet



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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

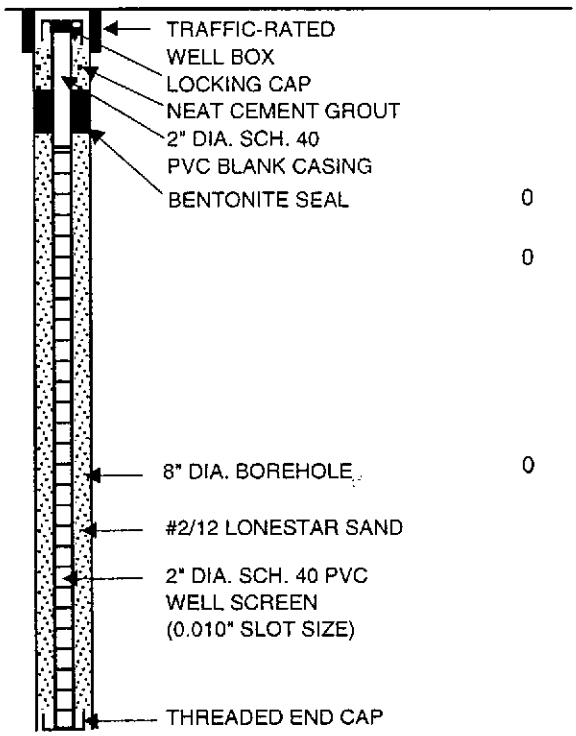
DATE 9/5/96

APPROVED

PLATE 17

LOG OF TEST BORING SCIMW-18

EQUIPMENT 8" Dia. Hollow Stem Auger
DATE DRILLED 8/26/96
ELEVATION 10.81 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			ASPHALTIC CONCRETE - 6 inches thick
					25	RED-BROWN SANDY GRAVEL (GW) dense, moist (fill)
		0	5		14	GRAY AND BLACK CLAYEY SILT (ML) medium stiff, moist, with sand and gravel (fill)
		0			6	GROUNDWATER LEVEL AFTER DRILLING
						DARK GRAY SANDY CLAY (CL/SC) medium stiff, moist, with gravel (fill)
			10		4	GRAY CLAYEY SILT (ML-MH) soft, wet (Bay Mud)
		0				
			15			
			20			
			25			
			30			
			35			
			40			

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

DATE 9/5/96

APPROVED

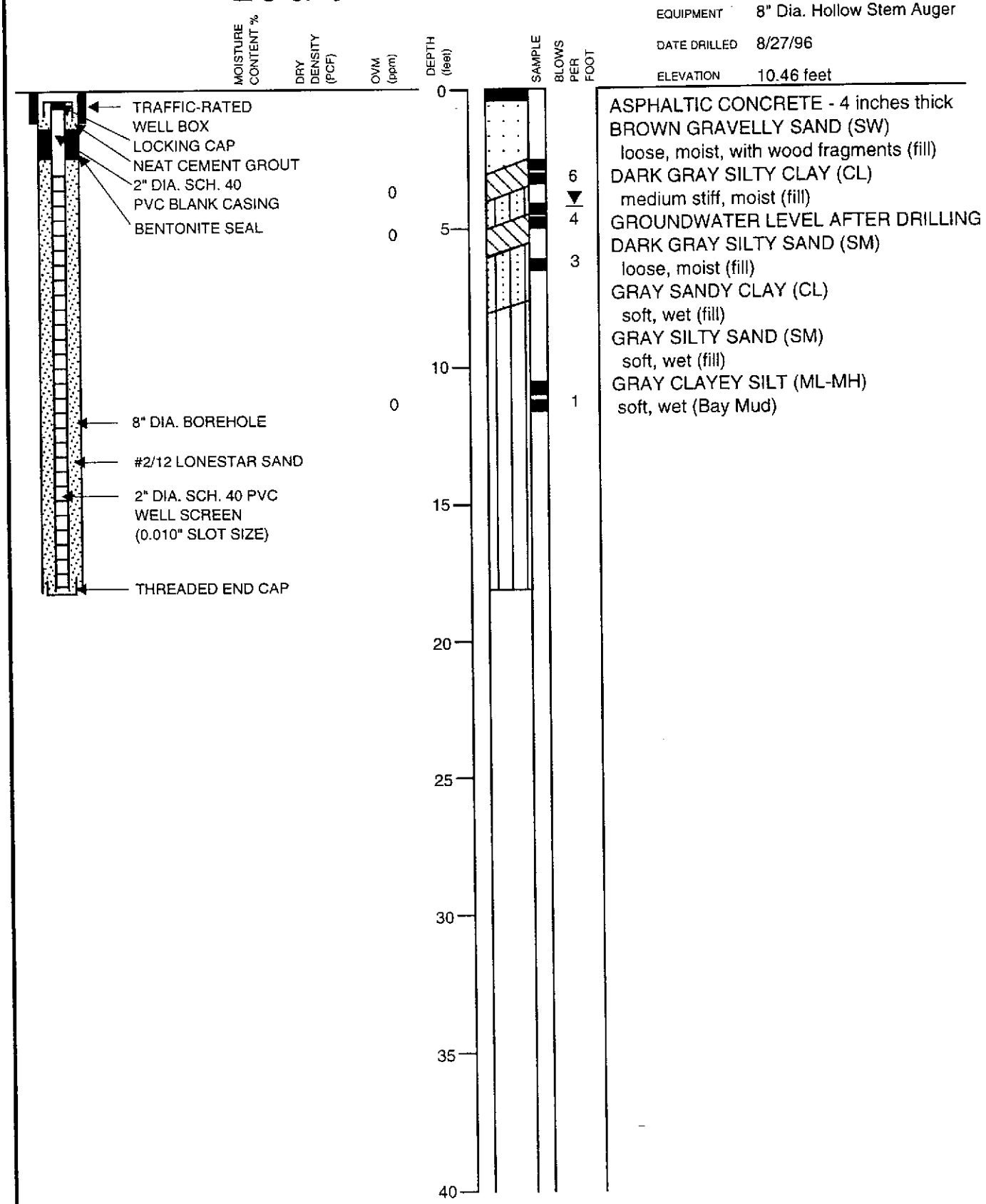
PLATE 18

LOG OF TEST BORING SCIMW-19

EQUIPMENT 8" Dia. Hollow Stem Auger

DATE DRILLED 8/27/96

ELEVATION 10.46 feet



ASPHALTIC CONCRETE - 4 inches thick

BROWN GRAVELLY SAND (SW)
loose, moist, with wood fragments (fill)

DARK GRAY SILTY CLAY (CL)
medium stiff, moist (fill)

GROUNDWATER LEVEL AFTER DRILLING

DARK GRAY SILTY SAND (SM)
loose, moist (fill)

GRAY SANDY CLAY (CL)
soft, wet (fill)

GRAY SILTY SAND (SM)
soft, wet (fill)

GRAY CLAYEY SILT (ML-MH)
soft, wet (Bay Mud)

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005

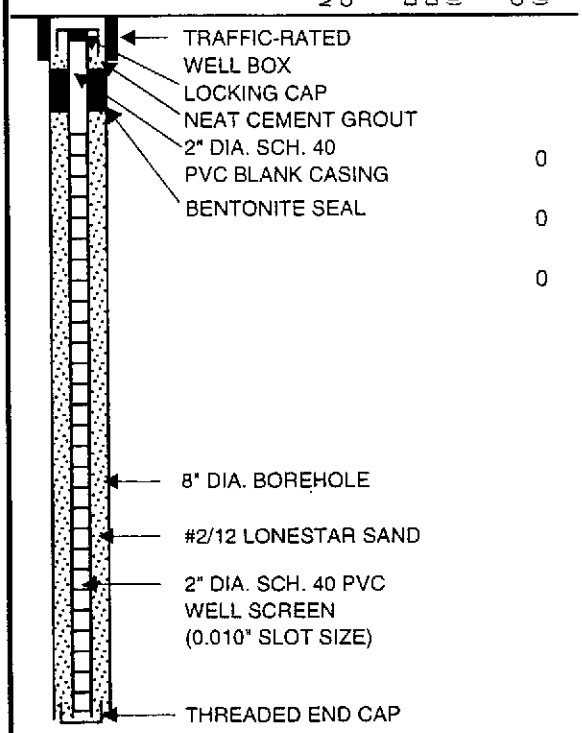
DATE 9/5/96

APPROVED

PLATE 19

LOG OF TEST BORING SCIMW-20

EQUIPMENT 8" Dia. Hollow Stem Auger
DATE DRILLED 8/27/96
ELEVATION 9.11 feet



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (feet)	SAMPLE	BLOWS PER FOOT	
			0			BROWN SANDY GRAVEL (GW) loose, moist (fill)
					▼	GROUNDWATER LEVEL AFTER DRILLING
		0			5	BROWN SILTY CLAY (CL) medium stiff, moist (fill)
		0	5		3	GREEN-GRAY SILTY CLAY (CL) medium stiff, moist (fill)
		0			2	GRAY SILTY CLAY (CL) medium stiff, wet (fill)
						PEAT LAYER (PT) soft, wet
			10			GRAY CLAYEY SILT (ML) soft, moist to wet (Bay Mud)
			15			
			20			
			25			
			30			
			35			
			40			

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005 | DATE 9/5/96 | APPROVED

PLATE 20

LOG OF TEST BORING SCI-32

EQUIPMENT 2-3/8" Dia. Enviro-core
DATE DRILLED 8/29/96
ELEVATION 14.09 feet

LABORATORY TESTS	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FEET)	SAMPLE	BLOWS PER FOOT
				0		
				5		▼
			2			
			0	10		
				15		

ASPHALTIC CONCRETE - 4 inches thick
BROWN SANDY GRAVEL (GW)
medium dense, moist (fill)

LIGHT BROWN SANDY CLAY (CL)
medium stiff, moist, with gravel (fill)
GROUNDWATER LEVEL AFTER DRILLING

GRAY-BLACK CLAYEY SILT (ML-MH)
soft,wet (Bay Mud)
1" diameter PVC well casing installed temporarily. Borehole backfilled with neat cement grout.

LOG OF TEST BORING SCI-33

EQUIPMENT 2-3/8" Dia. Enviro-core
DATE DRILLED 8/29/96
ELEVATION 11.38 feet

LABORATORY TESTS	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FEET)	SAMPLE	BLOWS PER FOOT
				0		
			0	5		▼
			4			
			1	10		
				15		

ASPHALTIC CONCRETE - 6 inches thick
DARK BROWN SANDY GRAVEL (GW)
medium dense, moist (fill)

GROUNDWATER LEVEL AFTER DRILLING
GRAY SANDY CLAY (CL)
medium stiff to stiff, moist, with gravel (fill)
GRAY SANDY CLAY (CL)
soft, wet, with seashells
GRAY CLAYEY SAND (SC)
medium dense, moist, with shells

1" diameter PVC well casing installed temporarily. Borehole backfilled with neat cement grout.

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005
DATE 9/5/96
APPROVED

PLATE 21

LOG OF TEST BORING SCI-34

EQUIPMENT 2-3/8" Dia. Enviro-core
DATE DRILLED 8/29/96
ELEVATION 13.14 feet

LABORATORY TESTS	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FEET)	SAMPLE	BLOWS PER FOOT
				0		
				5		
			0			
			0	10		
				15		

BROWN SILTY GRAVEL (GM)
medium dense, moist (fill)

GROUNDWATER LEVEL AFTER DRILLING
GRAY SANDY SILT (ML)
medium stiff, moist (fill)
LIGHT GRAY SANDY CLAY (CL)
stiff, moist, with gravel (fill)
LIGHT BROWN SANDY CLAY (CL)
soft, moist (fill)
DARK GRAY CLAYEY SILT (ML)
soft, wet (Bay Mud)
1" diameter PVC well casing installed temporarily. Borehole backfilled with neat cement grout.

LOG OF TEST BORING SCI-35

EQUIPMENT 2-3/8" Dia. Enviro-core
DATE DRILLED 8/29/96
ELEVATION 10.82 feet

LABORATORY TESTS	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FEET)	SAMPLE	BLOWS PER FOOT
				0		
			5			
				5		
			78			
			1	10		
			3			
				15		

ASPHALTIC CONCRETE - 6 inches thick
BROWN SANDY GRAVEL (GW)
medium dense, moist (fill)
GROUNDWATER LEVEL AFTER DRILLING
BROWN GRAVELLY SAND (SW)
medium dense, moist (fill)
BLACK SILTY SAND (SP)
medium dense, wet, (fill)
with hydrocarbon odor
GRAY-BLACK CLAYEY SILT (ML-MH)
soft, wet, with hydrocarbon odor (Bay Mud)

1" diameter PVC well casing installed temporarily. Borehole backfilled with neat cement grout.

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8TH AVENUE STUDY AREA - OAKLAND, CA

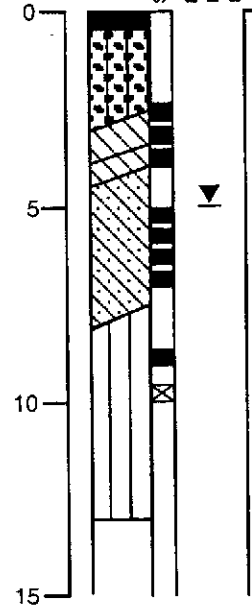
JOB NUMBER 133.005 | DATE 9/5/96 | APPROVED

PLATE 22

LOG OF TEST BORING SCI-36

EQUIPMENT 2-3/8" Dia. Enviro-core
DATE DRILLED 8/30/96
ELEVATION 10.43 feet

LABORATORY TESTS	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FEET)	SAMPLE	BLOWS PER FOOT
				0		
			12			
				5		
			9			
			12	10		
				15		



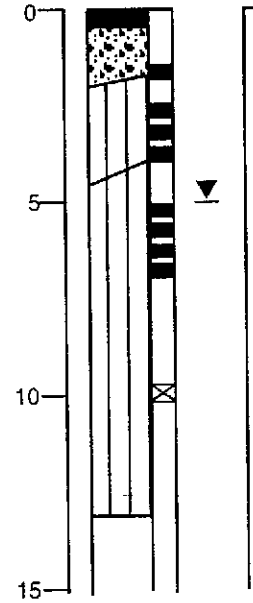
CEMENT CONCRETE - 7" thick
BROWN SILTY GRAVEL (GM)
medium dense, moist, (fill)
GROUNDWATER LEVEL AFTER DRILLING
DARK GRAY SANDY CLAY (CL)
stiff, moist (fill)
DARK GRAY SILTY CLAY (CL)
stiff, moist (fill)
GRAY CLAYEY SAND (SC)
medium dense, moist (fill)
DARK GRAY CLAYEY SILT (ML-MH)
soft, wet, with sand lenses (Bay Mud)

1" diameter PVC well casing installed temporarily. Borehole backfilled with neat cement grout.

LOG OF TEST BORING SCI-37

EQUIPMENT 2-3/8" Dia. Enviro-core
DATE DRILLED 8/30/96
ELEVATION 10.98 feet

LABORATORY TESTS	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FEET)	SAMPLE	BLOWS PER FOOT
				0		
			9			
				5		
			10			
			8	10		
				15		



CEMENT CONCRETE - 7 inches thick
BROWN SANDY GRAVEL (GW)
medium dense, moist (fill)
GRAY SANDY SILT (ML)
medium stiff, moist (fill)
GROUNDWATER LEVEL AFTER DRILLING
DARK GRAY CLAYEY SILT (ML)
soft, wet, with sand lenses (Bay Mud)

1" diameter PVC well casing installed temporarily. Borehole backfilled with neat cement grout.

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER	DATE	APPROVED
133.005	9/5/96	

PLATE 23

LOG OF TEST BORING SCI-38

EQUIPMENT 2-3/8" Dia. Enviro-core
DATE DRILLED 8/30/96
ELEVATION 11.87 feet

LABORATORY TESTS	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FEET)	SAMPLE	BLOWS PER FOOT
				0		
			8	5		
			8			
			9	10		
				15		

ASPHALTIC CONCRETE
BROWN SANDY GRAVEL (GW)
dense, moist (fill)

GROUNDWATER LEVEL AFTER DRILLING
GRAY-GREEN SANDY SILT (ML)
medium stiff, moist, with seashells (fill)
DARK GRAY SILTY CLAY (CL)
medium stiff, moist, with seashells
DARK GRAY CLAYEY SILT (ML)
soft, wet (Bay Mud)

1" diameter PVC well casing installed temporarily. Borehole backfilled with neat cement grout.

LOG OF TEST BORING SCI-39

EQUIPMENT 2-3/8" Dia. Enviro-core
DATE DRILLED 8/30/96
ELEVATION 12.78 feet

LABORATORY TESTS	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FEET)	SAMPLE	BLOWS PER FOOT
				0		
				5		
			6			
			10	10		
				15		

ASPHALTIC CONCRETE
DARK BROWN SANDY GRAVEL (GW)
medium dense, moist, (fill)

GROUNDWATER LEVEL AFTER DRILLING
GRAY SILTY CLAY (CL)
stiff, moist (fill)
BROWN SILTY CLAY (CL)
medium stiff, moist (fill)
DARK GRAY SILTY CLAY (CL)
medium stiff, moist (fill)

DARK GRAY CLAYEY SILT (ML-MH)
medium stiff, moist (Bay Mud)

1" diameter PVC well casing installed temporarily. Borehole backfilled with neat cement grout.

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8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER 133.005
DATE 9/5/96
APPROVED

PLATE 24

GENERAL SOIL CATEGORIES			SYMBOLS	TYPICAL SOIL TYPES
COARSE GRAINED SOILS More than half is larger than No. 200 seive	GRAVEL More than half coarse fraction is larger than No. 4 seive size	Clean Gravel with little or no fines	GW	Well Graded Gravel, Gravel-Sand Mixtures
			GP	Poorly Graded Gravel, Gravel-Sand Mixtures
		Gravel with more than 12% fines	GM	Silty Gravel, Poorly Graded Gravel-Sand-Silt Mixtures
			GC	Clayey Gravel, Poorly Graded Gravel-Sand-Clay Mixtures
	SAND More than half coarse fraction is smaller than No. 4 seive size	Clean Sand with little or no fines	SW	Well Graded Sand, Gravelly Sand
			SP	Poorly Graded Sand, Gravelly Sand
		Sand with more than 12% fines	SM	Silty Sand, Poorly Graded Sand-Silt Mixtures
			SC	Clayey Sand, Poorly Graded Sand-Clay Mixtures
FINE GRAINED SOILS More than half is smaller than No. 200 seive	SILT AND CLAY Liquid Limit Less than 50%		ML	Inorganic Silt and Very Fine Sand, Rock Flour, Silty or Clayey Fine Sand, or Clayey Silt with Slight Plasticity
			CL	Inorganic Clay of Low to Medium Plasticity, Gravelly Clay, Sandy Clay, Silty Clay, Lean Clay
			OL	Organic Clay and Organic Silty Clay of Low Plasticity
	SILT AND CLAY Liquid Limit Greater than 50%		MH	Inorganic Silt, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silt
			CH	Inorganic Clay of High Plasticity, Fat Clay
			OH	Organic Clay of Medium to High Plasticity, Organic Silt
HIGHLY ORGANIC SOILS			PT	Peat and Other Highly Organic Soils

UNIFIED SOIL CLASSIFICATION SYSTEM

Subsurface Consultants

8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER	DATE	APPROVED
133.005	12/3/96	

PLATE 25

Appendix A

REFERENCE LIST

Appendix A
Reference List

Clayton Environmental Consultants, *July and November 1995 Quarterly Groundwater Sampling Report at Former Underground Storage Tank Facility, Keep on Trucking Facility,* February 8, 1996.

Clayton Environmental Consultants, *July and November, 1995 Quarterly Groundwater Sampling Report at Keep on Trucking Former Aboveground Storage Tank Facility,* February 22, 1996.

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Clayton Environmental Consultants, *Work Plan for Limited Subsurface Investigation, Quarterly Sampling, and Free Phase Recovery at the Keep on Trucking Site,* December 22, 1994.

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Pacific Aerial Surveys, Aerial Photographs at Scale of 1 inch = ± 200 feet, April 14, 1950, August 14, 1953, May 3, 1957, May 2, 1969, April 24, 1973, May 29, 1975, July 19, 1977, October 4, 1985, and November 9, 1992.

Port of Oakland Letters, Lease Documents, and Maps.

United States Coast Guard Letter to Keep on Trucking, Inc. dated January 8, 1993.

United States Environmental Protection Agency Memorandum from Director, Surveillance & Analysis Division regarding 1973 Oil Spill from Port Petroleum, Ref: ER 10.5, undated.

Uribe & Associates, *Investigation of Diesel Spill at Keep on Trucking, 370 8th Avenue, Oakland, California,* April 20, 1993.

Uribe & Associates, *Quarterly Groundwater Monitoring Report,* July 18,1994, August 26, 1994, and November 10, 1994.

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Uribe & Associates, *Report of the Source Area Primary Pathway Investigation at Keep on Trucking, 370 8th Avenue, Oakland, California,* March 30 1993.

Uribe & Associates, *Source Investigation Summary and Workplan to Delineate Soil and Groundwater Contamination,* January 20, 1993.

Uribe & Associates, *Summary of Investigation Activities at Keep on Trucking Company, Inc. Facility,* April 3 through May 28, 1993.

Uribe & Associates, *Weekly Summary of Investigation Activities at Keep on Trucking Company, Inc. Facility,* March 7 through March 20, 1993, March 21 through April 3, 1993.

Appendix B

CALIFORNIA UTILITY SURVEYS REPORT

CALIFORNIA UTILITY SURVEY

FACSIMILE Cover Sheet

To: JEROME
Company: SCI
Phone: 299-7960
Fax: 299-7970

From: DENNIS
Company: C.U.SURVEYS
Phone:
Fax:

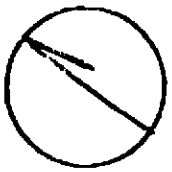
Date: 7-25-96
Pages including this cover page: 6

Comments:
None

CALIFORNIA UTILITY SURVEYS -- (510) 276 - 1972

POINT No. **DATE:** 7-24-96

MAGNETIC NORTH



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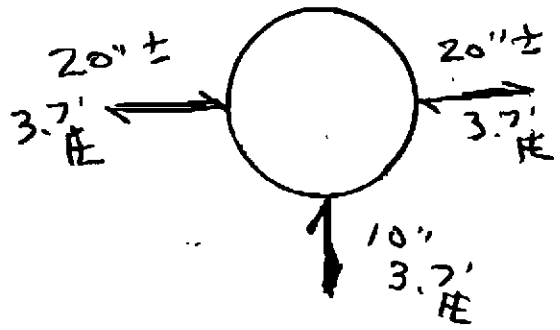

TENTH AVE. & DEFEMERY

POINT No. **DATE:** 7-24-96

MAGNETIC NORTH

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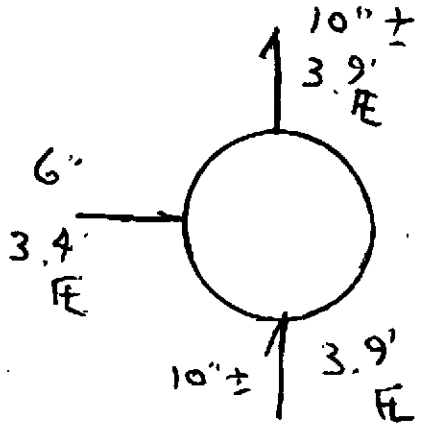

10TH AVE & DEFEMERY

CALIFORNIA UTILITY SURVEYS -- (510) 276 - 1972

POINT No. **DATE:** 7-24-96

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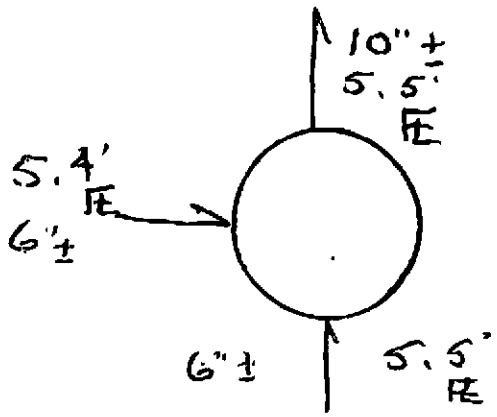

℄ TENTH AVE. & DEFFENBY

POINT No. **DATE:** 7-24-96

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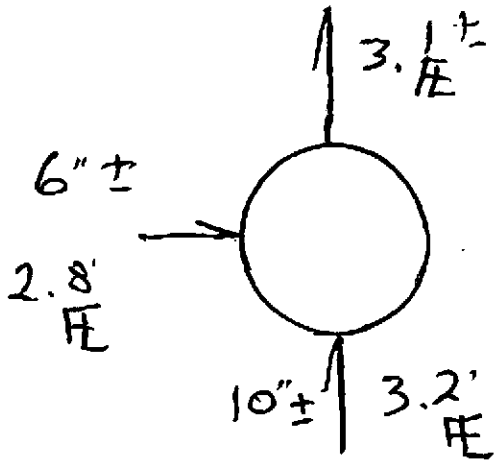
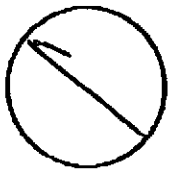


10TH AVE.

CALIFORNIA UTILITY SURVEYS -- (510) 276 - 1972

POINT No. **DATE:** 7-24-96

MAGNETIC NORTH



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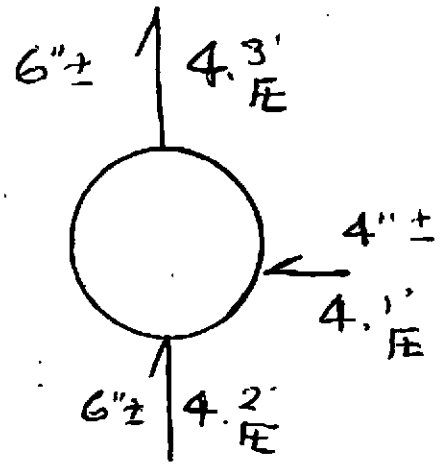
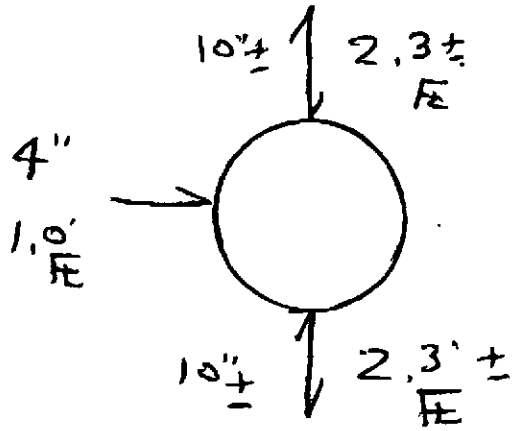


10TH AVE Between Doors 10 & 12

POINT No. **DATE:** 7-24-96

MAGNETIC NORTH

TYPE: SDCB "D"



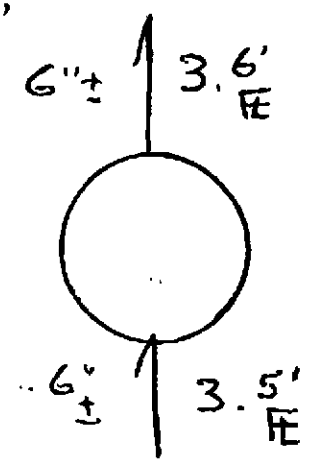
10TH AVE Between Doors 20 & 22

CALIFORNIA UTILITY SURVEYS -- (510) 276 - 1972

POINT No. **DATE:** 7-24-96

MAGNETIC NORTH

TYPE: SSMH "C"

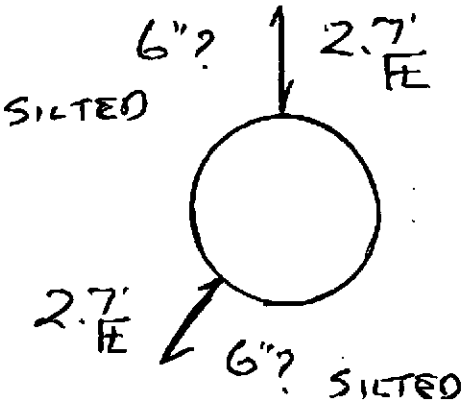


10TH AVE BETWEEN DOORS 22 & 24

POINT No. **DATE:** 7-24-96

MAGNETIC NORTH

TYPE: SDCB "E"



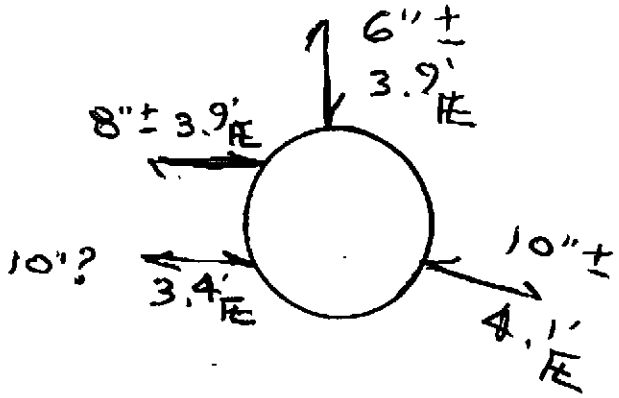
10TH AVE BETWEEN DOORS 32 & 34

CALIFORNIA UTILITY SURVEYS -- (510) 276 - 1972

POINT No. **DATE:** 7-25-96

MAGNETIC NORTH

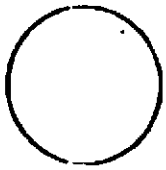
TYPE: SDCB "F"



10TH AVE DOOR 36

POINT No. **DATE:**

MAGNETIC NORTH



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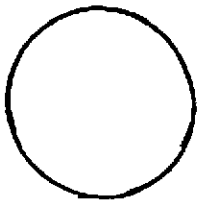


Appendix C

FIELD INVESTIGATION PROTOCOLS

APPENDIX C

Field Investigation Protocols

A. Monitoring Well Installation

Seventeen monitoring wells (SCIMW-4 through SCIMW-20) were installed by SCI within the study area. A Modified California Drive Sampler having an outside diameter of 3.0 inches and an inside diameter of 2.5 inches was used to obtain soil samples from each test boring. The samplers were driven by a 140-pound hammer with a drop of 30 inches. The number of blows required to drive the sampler the final 12 inches of each 18-inch penetration was recorded and is presented on the test boring logs. Drilling and sampling equipment was thoroughly steam-cleaned prior to each sample drive to reduce the likelihood of cross-contamination between samples and/or borings.

Soil samples were retained in 2.5-inch-diameter brass or stainless steel liners. Teflon sheeting was placed over the ends of the soil liners. The liners were subsequently capped and sealed with tape. The sealed liners were placed in an ice-filled cooler and remained iced until delivery to the analytical laboratory. Chain-of-custody records accompanied the samples to the laboratory. Where possible, the shoe sample from each drive was retained in a sealable plastic bag and screened for volatile organic compounds using an Organic Vapor Meter (OVM). OVM measurements are recorded on the test boring logs.

Upon completion of drilling, monitoring wells were installed in the test borings. Well schematics are shown on the test boring logs. In general, the well consists of 2-inch-diameter, Schedule 40 PVC pipe having flush-threaded joints. The lower 15 feet of Wells SCIMW-4 through SCIMW-20

consists of machine-slotted well screen having 0.010-inch slots. The remaining upper portion of the wells consists of Schedule 40 PVC blank pipe. The well was provided with a bottom cap and locking top cap. The well screen is encased in a filter pack composed of Lonestar No. 2/12 washed sand. The filter sand was placed by carefully pouring it through the annulus between the hollow-stem of the auger and the well casing. The filter pack in each well extends from the bottom of the well to about 0.5 feet above the screened section of the well. A 0.5 feet to 1 foot thick bentonite pellet seal was placed above the sand filter. The bentonite pellets were hydrated using clean water. The annulus above the bentonite seal was backfilled with cement grout. The grout mixture consists of Portland cement mixed with clean water. Each monitoring well was completed below grade and is protected by traffic-rated valve boxes encased in concrete.

B. Soil and Groundwater Sampling

In addition to the monitoring wells, subsurface conditions were explored by drilling 8 test borings within the study area. The borings were drilled using a hydraulically driven, 2-3/8 inch diameter, cuttingless soil coring system (Enviro-core). Borings SCI-36 and SCI-37 were located within a concrete slab, therefore 4-inch diameter holes were cored through the slab to facilitate drilling. Upon completion of drilling, temporary 1-inch diameter Schedule 40 PVC well casings, with the lower 10 feet screened, were installed in all boreholes to facilitate free product and groundwater elevation measurements, and groundwater sampling.

Soil samples were obtained using a custom Enviro-core sampler having an outside diameter of 1-7/8 inches and inside diameter of 1-11/16 inches. The samplers were driven using a hydraulically

driven vibrating hammer. Drilling and sampling equipment was thoroughly steam-cleaned prior to each drive to reduce the likelihood of cross-contamination between samples and/or borings.

Soil samples were retained in 1-11/16-inch diameter stainless steel liners. Teflon sheeting was placed over the ends of the soil liners prior to capping and sealing with tape. The sealed liners were placed in ice-filled coolers and remained iced until delivery to the analytical laboratory. Chain-of-custody records accompanied the samples to the laboratory. Where possible, the shoe sample from each drive was retained in a sealable plastic bag and screened for volatile organic compounds using an Organic Vapor Meter (OVM). OVM measurements are recorded on the test boring logs.

Following placement of the temporary wells and allowing groundwater to recharge into the well to a static level, the presence of free product was checked using a steel tape coated with petroleum product sensitive paste. The depth to water below the top of casing (TOC) was then measured in the wells using an electric well sounder. Finally, each temporary well was purged of one bailer full of groundwater before obtaining "grab" groundwater samples. Samples were obtained using either stainless steel bailers steam cleaned before each use or disposable plastic bailers. The water samples were retained in containers pre-cleaned by the supplier in accordance with EPA protocol. The samples were placed in an ice chest chilled with ice cubes and remained iced until delivery to the analytical laboratory. Chain-of-Custody records accompanied soil and groundwater samples to the laboratory.

After drilling and sampling, the temporary well casings were removed and the borings were backfilled with cement grout. The borings located beneath a concrete slab were topped with concrete and made flush with existing grade. All borings located beneath asphalt were topped with cold asphalt patch and also made flush with existing grade.

C. Well Development

Each monitoring well was developed at least 24 hours following placement of the grout seal. Initially, the presence of free product was determined using a steel tape coated with product sensitive paste. If free product was present, a sample was collected for analysis. In order to calculate the volume of water in the well, the depth to water and the depth to the well bottom was measured from the top of casing. A minimum of 10 well volumes was purged and transferred into 55-gallon drums left on site for later removal by others. During purging, conductivity, pH, and temperature of the groundwater was recorded at regular intervals to ensure that they stabilized indicating that fresh water from the aquifer had penetrated the wells. All equipment was thoroughly cleaned between each well to prevent cross-contamination.

D. Well Sampling

At least 48 hours following well development, the monitoring wells were purged of approximately two to three well volumes by bailing with a disposable bailer to ensure that water representative of the aquifer was present prior to sampling. As a general guide, a minimum of three well volumes should be purged prior to sampling unless well recovery rates prohibit it. Standard operating procedure does allow fewer than three purged well volumes if the well does not recover within 24 hours as long as groundwater samples are not collected until field indicator parameters such as pH, temperature, and electrical conductivity stabilize indicating that fresh groundwater from the aquifer has replaced the initial stagnant water. All monitoring wells were purged until pH, temperature, and electrical conductivity stabilized. Well sampling forms are attached. The wells were sampled after they had recharged to within 80% of their initial volume. The samples were retained in glass containers pre-cleaned by the supplier in accordance with EPA protocol.

The samples were placed in an ice chest and remained refrigerated until transmitted to the analytical laboratory. Chain of Custody records accompanied the samples to the laboratory. Soil cuttings, decontamination water and purge water were placed in 55-gallon steel drums and left on-site for later disposal by others.

Appendix D

ANALYTICAL TEST REPORTS
and
CHAIN-OF-CUSTODY FORMS FOR MANHOLE SAMPLES

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

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 04-NOV-96
Lab Job Number: 127155
Project ID: 133.005
Location: KOT

Reviewed by: Damara Moore

Reviewed by:

Curtis & Tompkins, Ltd.

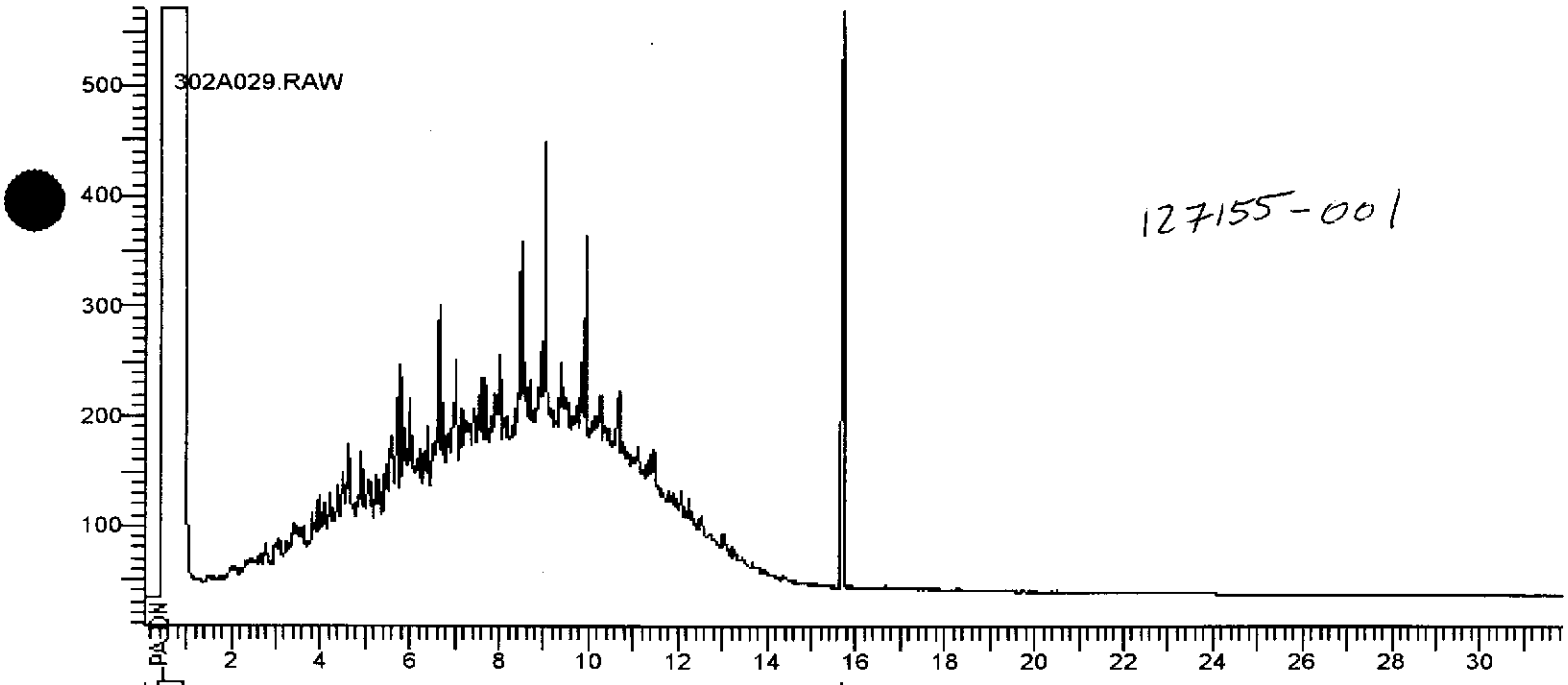
Laboratory Number: **127155**
Client: **Subsurface Consultants**
Project#: **133.005**
Location: **K.O.T**

Sample Date: **10/16/96**
Receipt Date: **10/16/96**

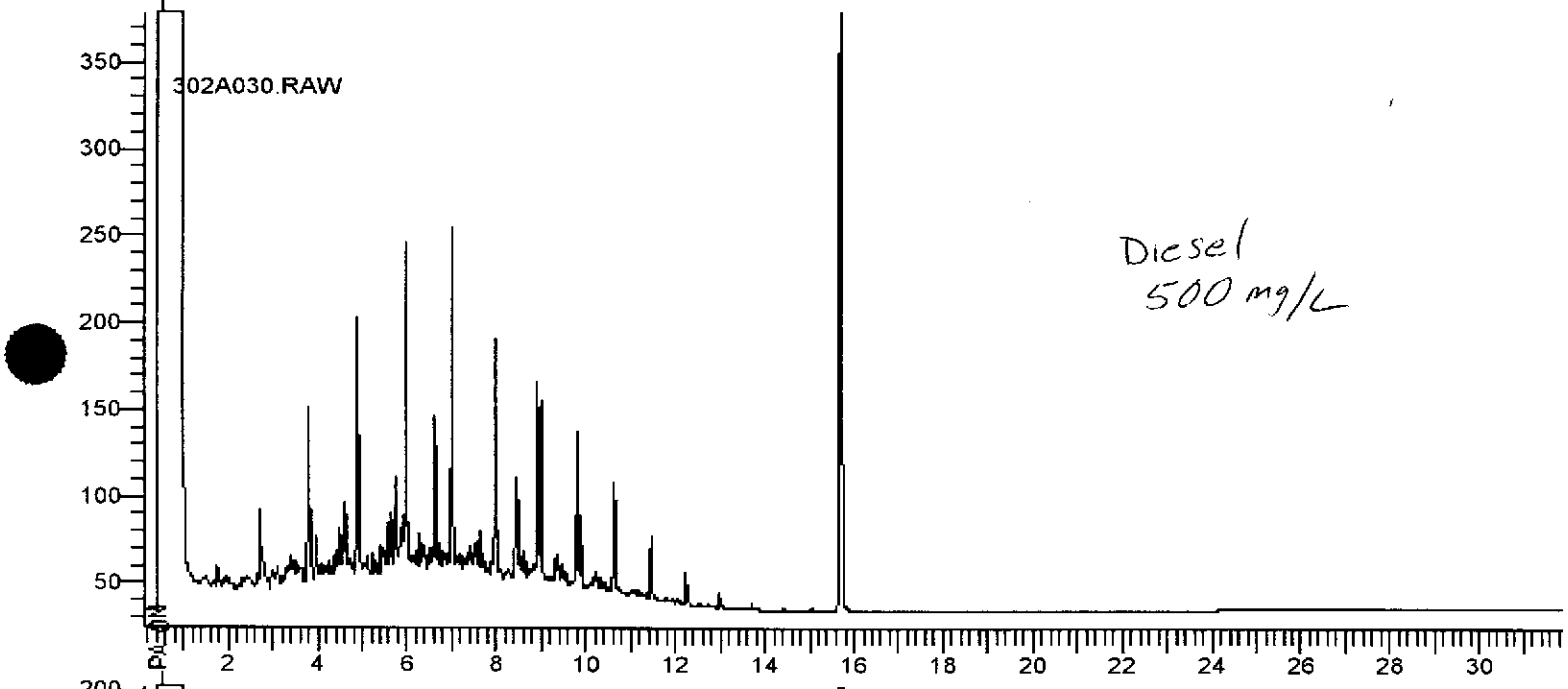
FINGERPRINT - TEH

Client Sample I.D	Curtis & Tompkins I.D
MANHOLE@START	127155-001

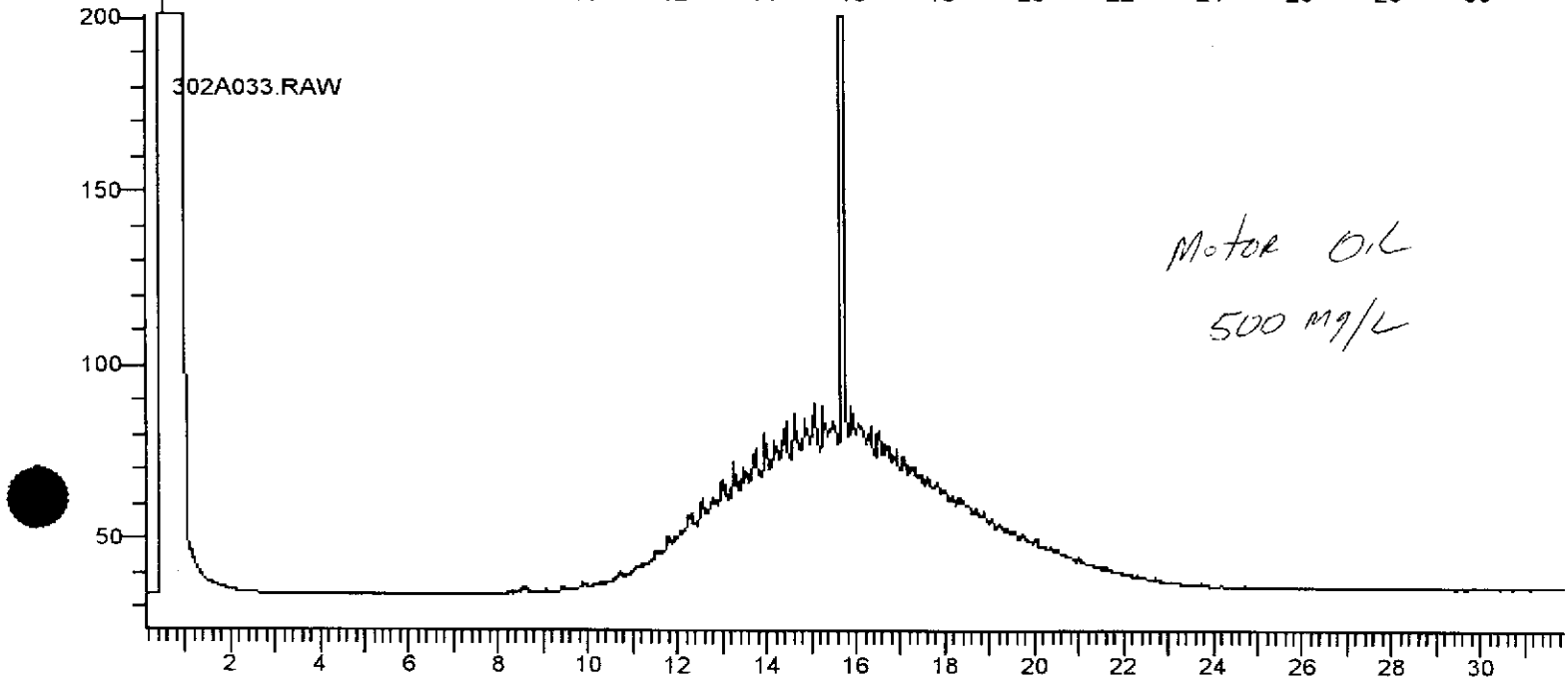
On 10/16/96, the above sample was analyzed by EPA modified 8015. It resembles the extractable fuel standard for diesel. Enclosed you will find the chromatogram for sample MANHOLE@START, and the diesel and motor oil standard chromatograms to which it was compared.



127155-001



Diesel
500 mg/L



Motor Oil
500 mg/L

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
127155-002	MANHOLE @ 2000GAL	30558	10/16/96	10/24/96	10/29/96	
127155-004	MANHOLE @ 8700GAL	30558	10/16/96	10/24/96	10/24/96	

Matrix: Water

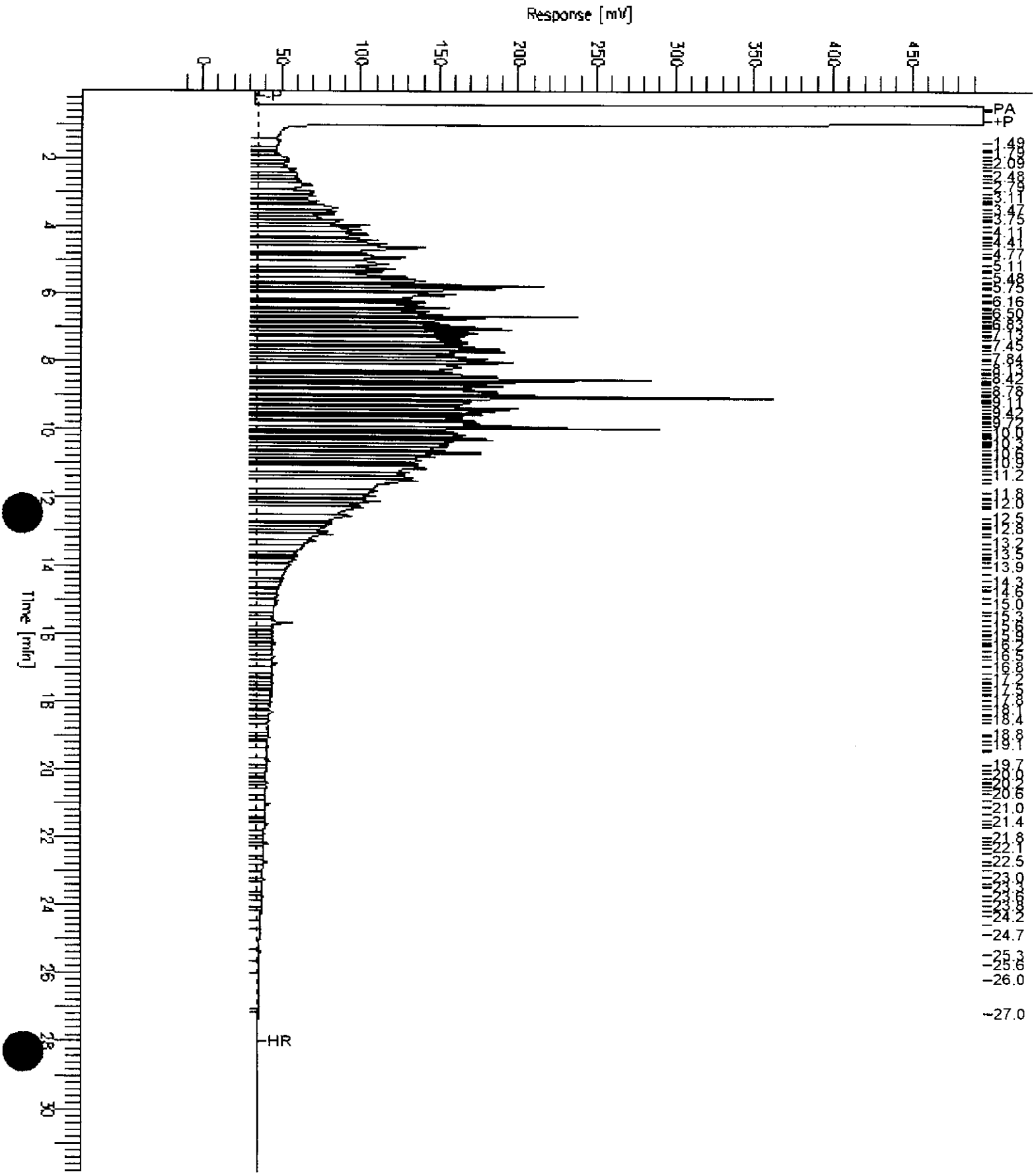
Analyte	Units	127155-002		127155-004
Diln Fac:		100		1
Diesel C12-C22	ug/L	910000		5300
Motor Oil C22-C50	ug/L	100000	YL	<250
Surrogate				
Hexacosane	%REC		DO	139

DO: Surrogate diluted out
Y: Sample exhibits fuel pattern which does not resemble standard
L: Lighter hydrocarbons than indicated standard

Chromatogram

Sample Name : 127155-002
FileName : G:\GC13\CHA\302A034.RAW
Method : ATEH302.MTH
Start Time : 0.01 min End Time : 31.85 min
Scale Factor: 0.0 Plot Offset: -18 mV

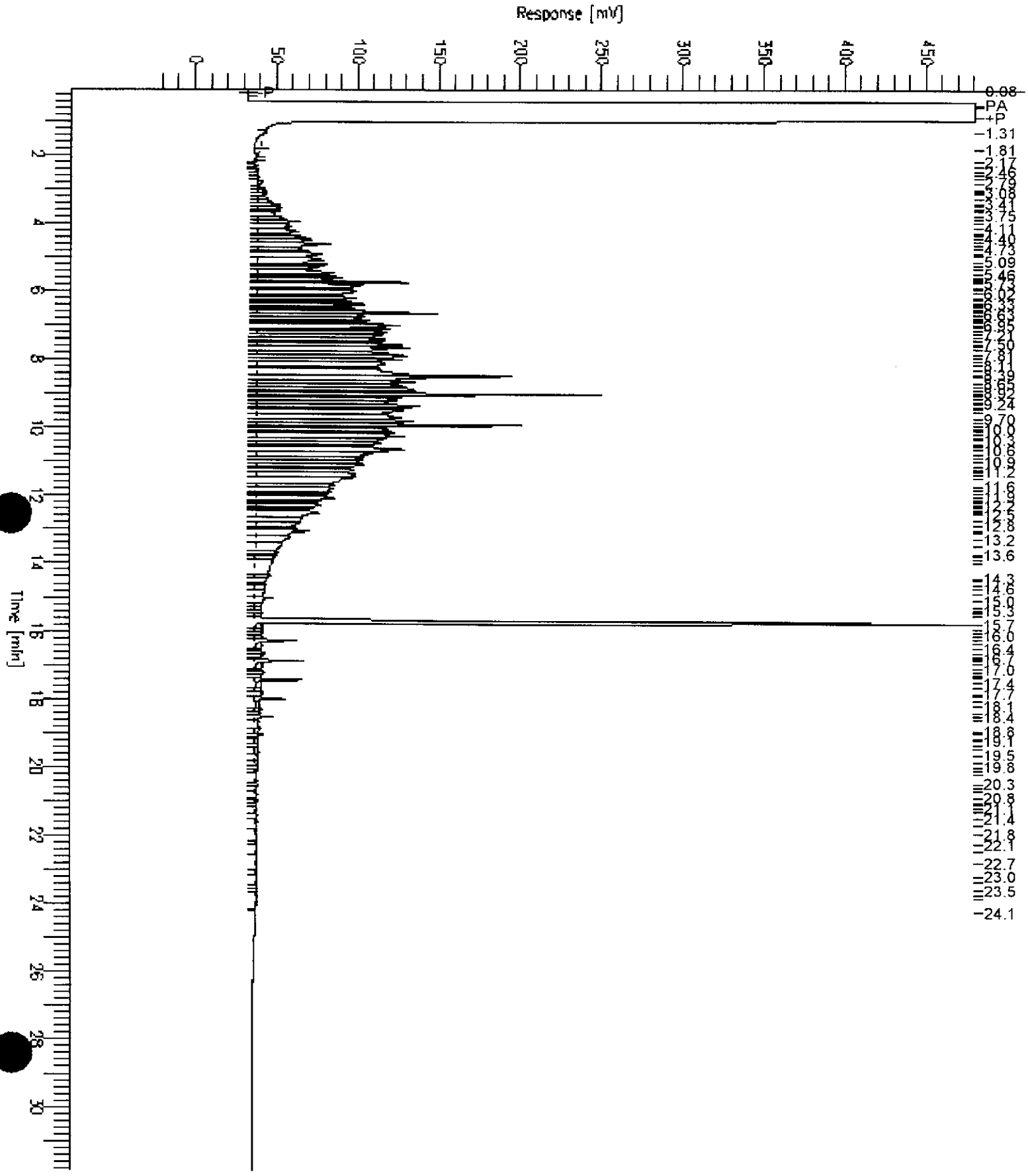
Sample #: 30558 Page 1 of 1
Date : 10/29/96 01:42 PM
Time of Injection: 10/29/96 01:00 PM
Low Point : -18.46 mV High Point : 495.67 mV
Plot Scale: 514.1 mV



Chromatogram

Sample Name : 127155-004
FileName : G:\GC13\CHA\302AC15.RAW
Method : ATEH302.MTH
Start Time : 0.07 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: -20 mV

Sample #: 30558 Page 1 of 1
Date : 10/29/96 01:40 PM
Time of Injection: 10/28/96 08:33 PM
Low Point : -20.04 mV High Point : 480.68 mV
Plot Scale: 500.7 mV



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 30558
Units: ug/L
Diln Fac: 1

Prep Date: 10/24/96
Analysis Date: 10/28/96

MB Lab ID: QC33286

Analyte	Result
Diesel C12-C22	<50
Motor Oil C22-C50	<250

Surrogate	%Rec	Recovery Limits
Hexacosane	92	60-140

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 30558
Units: ug/L
Diln Fac: 1

Prep Date: 10/24/96
Analysis Date: 10/28/96

BS Lab ID: QC33287

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2004	81	60-140
Surrogate	%Rec	Limits		
Hexacosane	95	60-140		

BSD Lab ID: QC33288

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	1786	72	60-140	11	35
Surrogate	%Rec	Limits				
Hexacosane	87	60-140				

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

Volatile Organics by GC/MS

Client:	Subsurface Consultants	Analysis Method:	EPA 8240
Project#:	133.005	Prep Method:	EPA 5030
Location:	KOT		

Field ID:	MANHOLE @ START	Sampled:	10/16/96
Lab ID:	127155-001	Received:	10/16/96
Matrix:	Oil	Extracted:	10/30/96
Batch#:	30613	Analyzed:	10/30/96
Units:	ug/Kg		
Diln Fac:	5000		

Analyte	Result	Reporting Limit
Chloromethane	ND	50000
Bromomethane	ND	50000
Vinyl Chloride	ND	50000
Chloroethane	ND	50000
Methylene Chloride	ND	100000
Acetone	ND	100000
Carbon Disulfide	ND	25000
Trichlorofluoromethane	ND	25000
1,1-Dichloroethene	ND	25000
1,1-Dichloroethane	ND	25000
trans-1,2-Dichloroethene	ND	25000
cis-1,2-Dichloroethene	ND	25000
Chloroform	ND	25000
Freon 113	ND	25000
1,2-Dichloroethane	ND	25000
2-Butanone	ND	50000
1,1,1-Trichloroethane	ND	25000
Carbon Tetrachloride	ND	25000
Vinyl Acetate	ND	250000
Bromodichloromethane	ND	25000
1,2-Dichloropropane	ND	25000
cis-1,3-Dichloropropene	ND	25000
Trichloroethene	ND	25000
Dibromochloromethane	ND	25000
1,1,2-Trichloroethane	ND	25000
Benzene	ND	25000
trans-1,3-Dichloropropene	ND	25000
2-Chloroethylvinylether	ND	50000
Bromoform	ND	25000
2-Hexanone	ND	50000
4-Methyl-2-Pentanone	ND	50000
1,1,2,2-Tetrachloroethane	ND	25000
Tetrachloroethene	ND	25000
Toluene	ND	25000
Chlorobenzene	ND	25000
Ethylbenzene	ND	25000
Styrene	ND	25000
m,p-Xylenes	ND	25000
o-Xylene	ND	25000

Surrogate	%Recovery	Recovery Limits
Toluene-d8	103	87-125
Bromofluorobenzene	97	79-122
1,2-Dichloroethane-d4	103	68-126

Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

Field ID: MANHOLE @ 2000GAL
Lab ID: 127155-002
Matrix: Water
Batch#: 30417
Units: ug/L
Diln Fac: 1

Sampled: 10/16/96
Received: 10/16/96
Extracted: 10/18/96
Analyzed: 10/18/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	5.8	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	113	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	101	79-122

Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

Field ID: MANHOLE @ 8700GAL
Lab ID: 127155-004
Matrix: Water
Batch#: 30417
Units: ug/L
Diln Fac: 1

Sampled: 10/16/96
Received: 10/16/96
Extracted: 10/18/96
Analyzed: 10/18/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	113	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	103	79-122

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 30613
Units: ug/L
Diln Fac: 1

Prep Date: 10/29/96
Analysis Date: 10/29/96

MB Lab ID: QC33474

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	98	68-126
Toluene-d8	99	87-125
Bromofluorobenzene	108	79-122

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 30613
Units: ug/L
Diln Fac: 1

Prep Date: 10/29/96
Analysis Date: 10/29/96

MB Lab ID: QC33475

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	93	68-126
Toluene-d8	100	87-125
Bromofluorobenzene	95	79-122

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 30613
Units: ug/L
Diln Fac: 1

Prep Date: 10/29/96
Analysis Date: 10/29/96

LCS Lab ID: QC33473

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	44.87	50	90	51-180
Trichloroethene	40.94	50	82	73-141
Benzene	46.19	50	92	78-142
Toluene	46.59	50	93	76-150
Chlorobenzene	46.98	50	94	83-129

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	93	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	106	79-122

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 5 outside limits

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
Lab ID: 127211-001
Matrix: Water
Batch#: 30613
Units: ug/L
Diln Fac: 1

Sample Date: 10/21/96
Received Date: 10/22/96
Prep Date: 10/29/96
Analysis Date: 10/29/96

MS Lab ID: QC33497

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	0	51.9	104	51-180
Trichloroethene	50	0	41.71	83	73-141
Benzene	50	0	48.3	97	78-142
Toluene	50	0	47.82	96	76-150
Chlorobenzene	50	0	48.72	97	83-129

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	103	68-126
Toluene-d8	100	87-125
Bromofluorobenzene	111	79-122

MSD Lab ID: QC33498

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	55.84	112	51-180	7	14
Trichloroethene	50	43.72	87	73-141	5	14
Benzene	50	50.01	100	78-142	3	11
Toluene	50	50.28	101	76-150	5	13
Chlorobenzene	50	49.92	100	83-129	2	13

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	107	68-126
Toluene-d8	102	87-125
Bromofluorobenzene	109	79-122

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 30417
Units: ug/L
Diln Fac: 1

Prep Date: 10/17/96
Analysis Date: 10/17/96

MB Lab ID: QC32750

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	99	68-126
Toluene-d8	98	87-125
Bromofluorobenzene	108	79-122

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 30417
Units: ug/L
Diln Fac: 1

Prep Date: 10/17/96
Analysis Date: 10/17/96

LCS Lab ID: QC32749

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	50.03	50	100	51-180
Trichloroethene	49.74	50	100	73-141
Benzene	49.95	50	100	78-142
Toluene	47.74	50	96	76-150
Chlorobenzene	48.8	50	98	83-129

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	96	68-126
Toluene-d8	100	87-125
Bromofluorobenzene	105	79-122

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 5 outside limits

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8240
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
Lab ID: 127147-001
Matrix: Water
Batch#: 30417
Units: ug/L
Diln Fac: 1

Sample Date: 10/16/96
Received Date: 10/16/96
Prep Date: 10/17/96
Analysis Date: 10/17/96

MS Lab ID: QC32751

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5	47.28	95	51-180
Trichloroethene	50	<5	46.13	92	73-141
Benzene	50	<5	49.15	98	78-142
Toluene	50	<5	46.72	93	76-150
Chlorobenzene	50	<5	48.56	97	83-129

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	108	68-126
Toluene-d8	102	87-125
Bromofluorobenzene	108	79-122

MSD Lab ID: QC32752

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	49.73	100	51-180	5	14
Trichloroethene	50	46.99	94	73-141	2	14
Benzene	50	50.47	101	78-142	3	11
Toluene	50	47.27	95	76-150	1	13
Chlorobenzene	50	49.17	98	83-129	1	13

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	109	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	110	79-122

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 127155-001
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 133.005
PROJECT: KOT
SAMPLE ID: MANHOLE @ START

DATE SAMPLED: 10/16/96
DATE RECEIVED: 10/16/96
DATE EXTRACTED: 10/28/96
DATE ANALYZED: 10/29/96
DATE REPORTED: 11/04/96
BATCH NO: 30595

EPA 8270: Base/Neutral and Acid Extractables in Oil

ACID COMPOUNDS	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Phenol	ND	500,000
2-Chlorophenol	ND	500,000
Benzyl Alcohol	ND	500,000
2-Methylphenol	ND	500,000
4-Methylphenol	ND	500,000
2-Nitrophenol	ND	2,500,000
2,4-Dimethylphenol	ND	500,000
Benzoic Acid	ND	2,500,000
2,4-Dichlorophenol	ND	2,500,000
4-Chloro-3-methylphenol	ND	500,000
2,4,6-Trichlorophenol	ND	500,000
2,4,5-Trichlorophenol	ND	2,500,000
2,4-Dinitrophenol	ND	2,500,000
4-Nitrophenol	ND	2,500,000
4,6-Dinitro-2-methylphenol	ND	2,500,000
Pentachlorophenol	ND	2,500,000
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	500,000
Aniline	ND	500,000
Bis(2-chloroethyl)ether	ND	500,000
1,3-Dichlorobenzene	ND	500,000
1,4-Dichlorobenzene	ND	500,000
1,2-Dichlorobenzene	ND	500,000
Bis(2-chloroisopropyl)ether	ND	500,000
N-Nitroso-di-n-propylamine	ND	500,000
Hexachloroethane	ND	500,000
Nitrobenzene	ND	500,000
Isophorone	ND	500,000
Bis(2-chloroethoxy)methane	ND	500,000
1,2,4-Trichlorobenzene	ND	500,000
Naphthalene	ND	500,000
4-Chloroaniline	ND	500,000
Hexachlorobutadiene	ND	500,000
2-Methylnaphthalene	1,200,000	500,000
Hexachlorocyclopentadiene	ND	500,000
2-Chloronaphthalene	ND	500,000
2-Nitroaniline	ND	2,500,000

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 127155-001
SAMPLE ID: MANHOLE @ START

EPA 8270

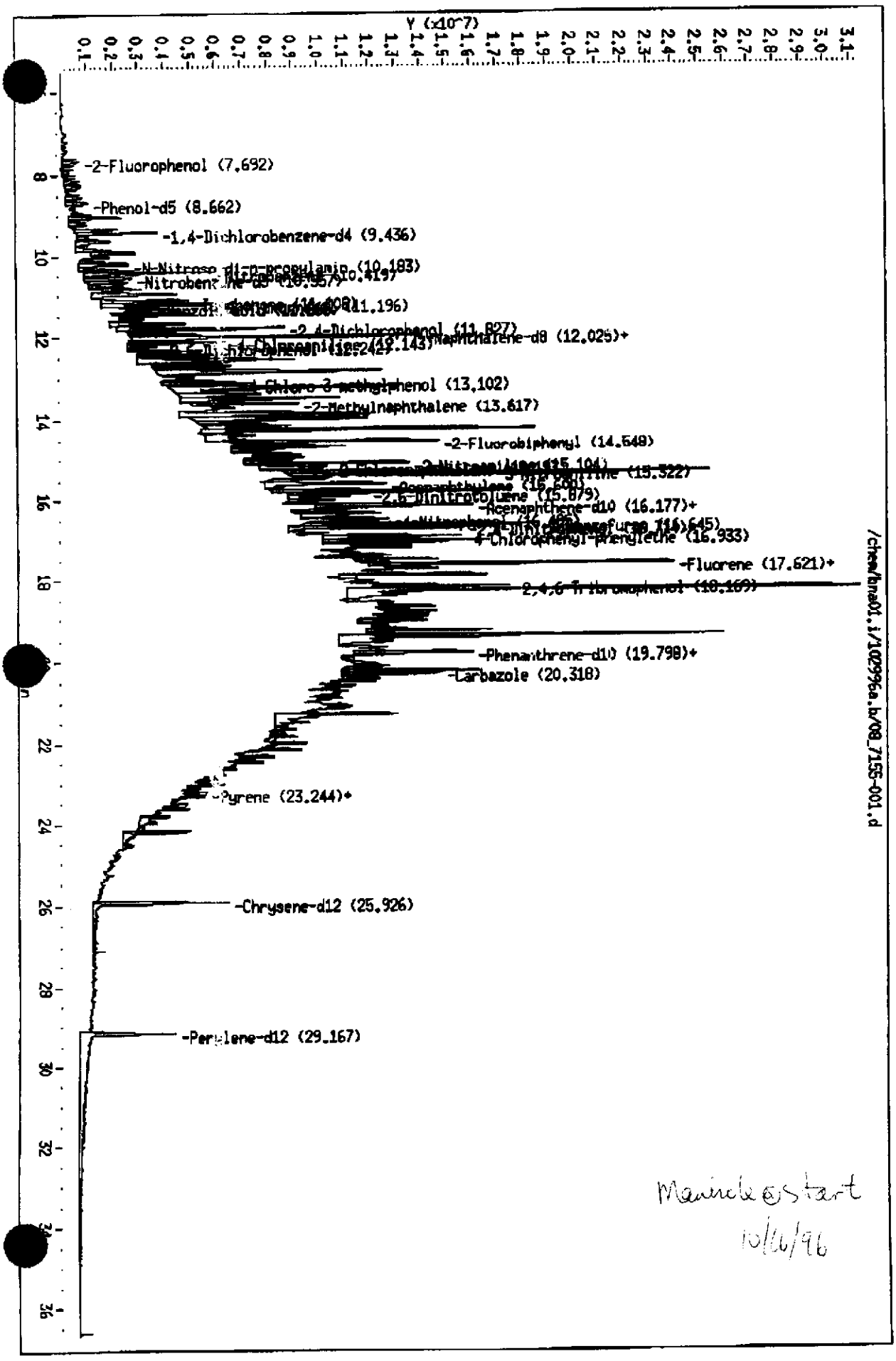
BASE/NEUTRAL COMPOUNDS	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Dimethylphthalate	ND	500,000
Acenaphthylene	ND	500,000
2,6-Dinitrotoluene	ND	500,000
3-Nitroaniline	ND	2,500,000
Acenaphthene	ND	500,000
Dibenzofuran	ND	500,000
2,4-Dinitrotoluene	ND	500,000
Diethylphthalate	ND	500,000
4-Chlorophenyl-phenylether	ND	500,000
Fluorene	ND	500,000
4-Nitroaniline	ND	2,500,000
N-Nitrosodiphenylamine	ND	500,000
Azobenzene	ND	500,000
4-Bromophenyl-phenylether	ND	500,000
Hexachlorobenzene	ND	500,000
Phenanthrene	ND	500,000
Anthracene	ND	500,000
Di-n-butylphthalate	ND	500,000
Fluoranthene	ND	500,000
Pyrene	ND	500,000
Butylbenzylphthalate	ND	500,000
3,3'-Dichlorobenzidine	ND	2,500,000
Benzo(a)anthracene	ND	500,000
Chrysene	ND	500,000
Bis(2-ethylhexyl)phthalate	ND	500,000
Di-n-octylphthalate	ND	500,000
Benzo(b)fluoranthene	ND	500,000
Benzo(k)fluoranthene	ND	500,000
Benzo(a)pyrene	ND	500,000
Indeno(1,2,3-cd)pyrene	ND	500,000
Dibenzo(a,h)anthracene	ND	500,000
Benzo(g,h,i)perylene	ND	500,000

ND = Not detected at or above reporting limit.
DO = Diluted Out

SURROGATE RECOVERIES

2-Fluorophenol	DO	Nitrobenzene-d5	DO
Phenol-d5	DO	2-Fluorobiphenyl	DO
2,4,6-Tribromophenol	DO	Terphenyl-d14	DO

127155-1



Manual @ start
10/26/96

Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: MANHOLE @ 2000GAL
Lab ID: 127155-002
Matrix: Water
Batch#: 30528
Units: ug/L
Diln Fac: 20

Sampled: 10/16/96
Received: 10/16/96
Extracted: 10/23/96
Analyzed: 10/31/96

Analyte	Result	Reporting Limit
Phenol	ND	1900
2-Chlorophenol	ND	1900
Benzyl alcohol	ND	1900
2-Methylphenol	ND	1900
4-Methylphenol	ND	1900
2-Nitrophenol	ND	9400
2,4-Dimethylphenol	ND	1900
Benzoic acid	ND	9400
2,4-Dichlorophenol	ND	1900
4-Chloro-3-methylphenol	ND	1900
2,4,6-Trichlorophenol	ND	1900
2,4,5-Trichlorophenol	ND	9400
2,4-Dinitrophenol	ND	9400
4-Nitrophenol	ND	9400
4,6-Dinitro-2-methylphenol	ND	9400
Pentachlorophenol	ND	9400
N-Nitrosodimethylamine	ND	1900
Aniline	ND	1900
bis(2-Chloroethyl)ether	ND	1900
1,3-Dichlorobenzene	ND	1900
1,4-Dichlorobenzene	ND	1900
1,2-Dichlorobenzene	ND	1900
bis(2-Chloroisopropyl) ether	ND	1900
N-Nitroso-di-n-propylamine	ND	1900
Hexachloroethane	ND	1900
Nitrobenzene	ND	1900
Isophorone	ND	1900
bis(2-Chloroethoxy)methane	ND	1900
1,2,4-Trichlorobenzene	ND	1900
Naphthalene	ND	1900
4-Chloroaniline	ND	1900
Hexachlorobutadiene	ND	1900
2-Methylnaphthalene	2500	1900
Hexachlorocyclopentadiene	ND	1900
2-Chloronaphthalene	ND	1900
2-Nitroaniline	ND	9400
Dimethylphthalate	ND	1900
Acenaphthylene	ND	1900

Semivolatile Organics by GC/MS

Field ID:	MANHOLE @ 2000GAL	Sampled:	10/16/96
Lab ID:	127155-002	Received:	10/16/96
Matrix:	Water	Extracted:	10/23/96
Batch#:	30528	Analyzed:	10/31/96
Units:	ug/L		
Diln Fac:	20		

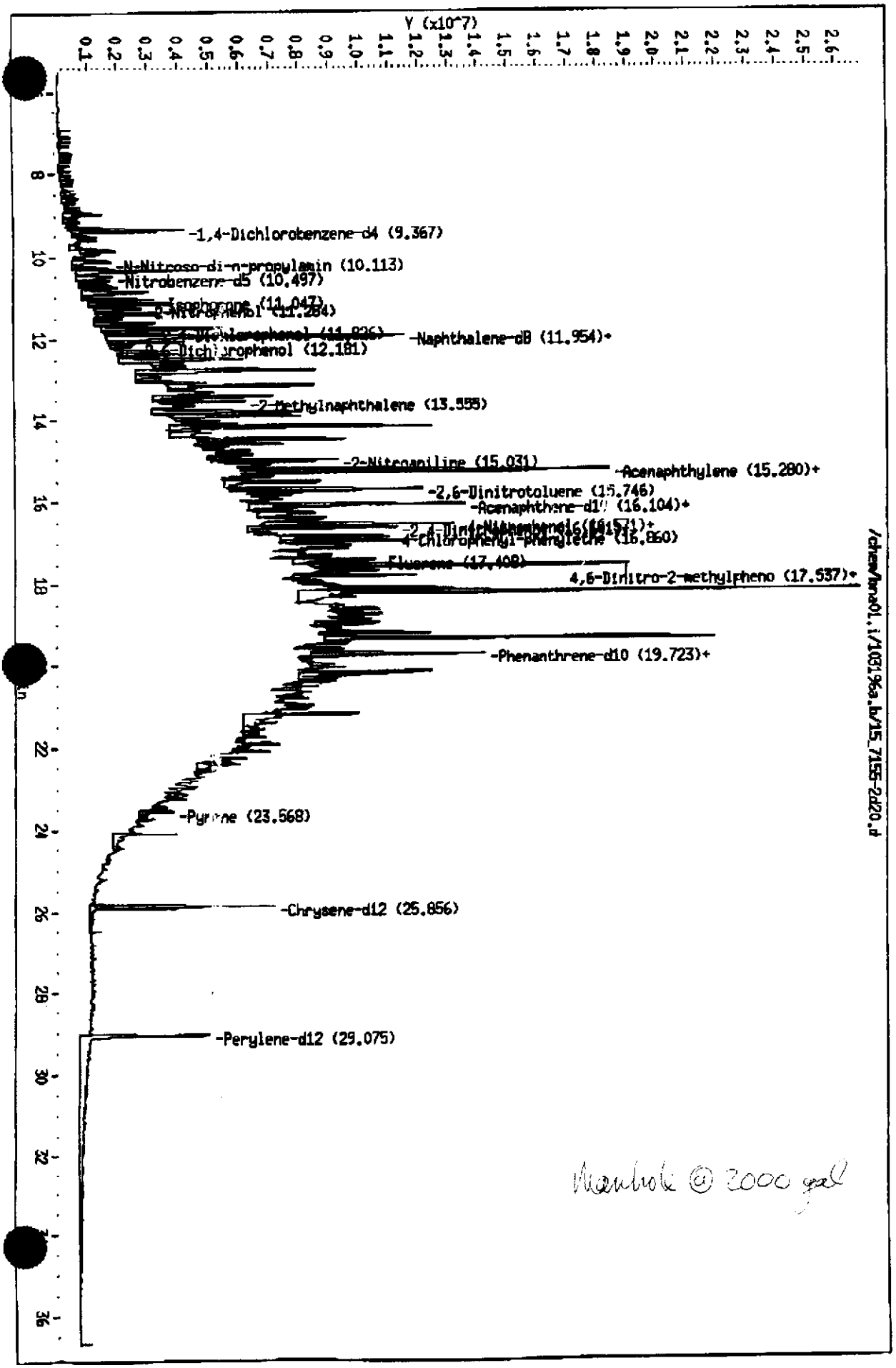
Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	1900
3-Nitroaniline	ND	9400
Acenaphthene	ND	1900
Dibenzofuran	ND	1900
2,4-Dinitrotoluene	ND	1900
Diethylphthalate	ND	1900
4-Chlorophenyl-phenylether	ND	1900
Fluorene	ND	1900
4-Nitroaniline	ND	9400
N-Nitrosodiphenylamine	ND	1900
Azobenzene	ND	1900
4-Bromophenyl-phenylether	ND	1900
Hexachlorobenzene	ND	1900
Phenanthrene	ND	1900
Anthracene	ND	1900
Di-n-butylphthalate	ND	1900
Fluoranthene	ND	1900
Pyrene	ND	1900
Butylbenzylphthalate	ND	1900
3,3'-Dichlorobenzidine	ND	9400
Benzo(a)anthracene	ND	1900
Chrysene	ND	1900
bis(2-Ethylhexyl)phthalate	ND	1900
Di-n-octylphthalate	ND	1900
Benzo(b)fluoranthene	ND	1900
Benzo(k)fluoranthene	ND	1900
Benzo(a)pyrene	ND	1900
Indeno(1,2,3-cd)pyrene	ND	1900
Dibenz(a,h)anthracene	ND	1900
Benzo(g,h,i)perylene	ND	1900

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	DO*	21-110
Phenol-d5	DO*	10-110
2,4,6-Tribromophenol	DO*	10-123
Nitrobenzene-d5	DO*	35-114
2-Fluorobiphenyl	DO*	43-116
Terphenyl-d14	DO*	33-141

* Values outside of QC limits

DO: Surrogate diluted out

125155-2



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Date : 31-OCT-1996 23:08
Client ID: CURTIS&TOMPKINS,LTD
Sample Info:
Volume Injected (ul): 1.0
Column phase: Rti 5 x .5 u

Instrument: bna01.i
Operator: dsh
Column diameter: 0.25

Manbrok @ 2000 gal

Semivolatile Organics by GC/MS

Client:	Subsurface Consultants	Analysis Method:	EPA 8270
Project#:	133.005	Prep Method:	EPA 3520
Location:	KOT		

Field ID:	MANHOLE @ 8700GAL	Sampled:	10/16/96
Lab ID:	127155-004	Received:	10/16/96
Matrix:	Water	Extracted:	10/23/96
Batch#:	30528	Analyzed:	10/30/96
Units:	ug/L		
Diln Fac:	1		

Analyte	Result	Reporting Limit
Phenol	ND	9.4
2-Chlorophenol	ND	9.4
Benzyl alcohol	ND	9.4
2-Methylphenol	ND	9.4
4-Methylphenol	ND	9.4
2-Nitrophenol	ND	47
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
2,4-Dichlorophenol	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	47
2,4-Dinitrophenol	ND	47
4-Nitrophenol	ND	47
4,6-Dinitro-2-methylphenol	ND	47
Pentachlorophenol	ND	47
N-Nitrosodimethylamine	ND	9.4
Aniline	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
1,2-Dichlorobenzene	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
bis(2-Chloroethoxy)methane	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	47
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4

Semivolatile Organics by GC/MS

Field ID:	MANHOLE @ 8700GAL	Sampled:	10/16/96
Lab ID:	127155-004	Received:	10/16/96
Matrix:	Water	Extracted:	10/23/96
Batch#:	30528	Analyzed:	10/30/96
Units:	ug/L		
Diln Fac:	1		

Analyte	Result	Reporting Limit
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	47
Acenaphthene	ND	9.4
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
Fluorene	ND	9.4
4-Nitroaniline	ND	47
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	47
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	78	21-110
Phenol-d5	79	10-110
2,4,6-Tribromophenol	77	10-123
Nitrobenzene-d5	75	35-114
2-Fluorobiphenyl	70	43-116
Terphenyl-d14	63	33-141

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 127155-MB
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 133.005
PROJECT: KOT
SAMPLE ID: METHOD BLANK

DATE EXTRACTED: 10/28/96
DATE ANALYZED: 10/29/96
DATE REPORTED: 11/04/96
BATCH NO: 30595

EPA 8270: Base/Neutral and Acid Extractables in Oil

ACID COMPOUNDS	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Phenol	ND	100,000
2-Chlorophenol	ND	100,000
Benzyl Alcohol	ND	100,000
2-Methylphenol	ND	100,000
4-Methylphenol	ND	100,000
2-Nitrophenol	ND	500,000
2,4-Dimethylphenol	ND	100,000
Benzoic Acid	ND	500,000
2,4-Dichlorophenol	ND	100,000
4-Chloro-3-methylphenol	ND	500,000
2,4,6-Trichlorophenol	ND	100,000
2,4,5-Trichlorophenol	ND	500,000
2,4-Dinitrophenol	ND	500,000
4-Nitrophenol	ND	500,000
4,6-Dinitro-2-methylphenol	ND	500,000
Pentachlorophenol	ND	500,000
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	100,000
Aniline	ND	100,000
Bis(2-chloroethyl)ether	ND	100,000
1,3-Dichlorobenzene	ND	100,000
1,4-Dichlorobenzene	ND	100,000
1,2-Dichlorobenzene	ND	100,000
Bis(2-chloroisopropyl)ether	ND	100,000
N-Nitroso-di-n-propylamine	ND	100,000
Hexachloroethane	ND	100,000
Nitrobenzene	ND	100,000
Isophorone	ND	100,000
Bis(2-chloroethoxy)methane	ND	100,000
1,2,4-Trichlorobenzene	ND	100,000
Naphthalene	ND	100,000
4-Chloroaniline	ND	100,000
Hexachlorobutadiene	ND	100,000
2-Methylnaphthalene	ND	100,000
Hexachlorocyclopentadiene	ND	100,000
2-Chloronaphthalene	ND	100,000
2-Nitroaniline	ND	500,000

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 127155-MB
SAMPLE ID: METHOD BLANK

EPA 8270

BASE/NEUTRAL COMPOUNDS	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Dimethylphthalate	ND	100,000
Acenaphthylene	ND	100,000
2,6-Dinitrotoluene	ND	100,000
3-Nitroaniline	ND	500,000
Acenaphthene	ND	100,000
Dibenzofuran	ND	100,000
2,4-Dinitrotoluene	ND	100,000
Diethylphthalate	ND	100,000
4-Chlorophenyl-phenylether	ND	100,000
Fluorene	ND	100,000
4-Nitroaniline	ND	500,000
N-Nitrosodiphenylamine	ND	100,000
Azobenzene	ND	100,000
4-Bromophenyl-phenylether	ND	100,000
Hexachlorobenzene	ND	100,000
Phenanthrene	ND	100,000
Anthracene	ND	100,000
Di-n-butylphthalate	ND	100,000
Fluoranthene	ND	100,000
Pyrene	ND	100,000
Butylbenzylphthalate	ND	100,000
3,3'-Dichlorobenzidine	ND	500,000
Benzo(a)anthracene	ND	100,000
Chrysene	ND	100,000
Bis(2-ethylhexyl)phthalate	ND	100,000
Di-n-octylphthalate	ND	100,000
Benzo(b)fluoranthene	ND	100,000
Benzo(k)fluoranthene	ND	100,000
Benzo(a)pyrene	ND	100,000
Indeno(1,2,3-cd)pyrene	ND	100,000
Dibenzo(a,h)anthracene	ND	100,000
Benzo(g,h,i)perylene	ND	100,000

ND = Not detected at or above reporting limit.

SURROGATE RECOVERIES, %

2-Fluorophenol	100	Nitrobenzene-d5	77
Phenol-d5	92	2-Fluorobiphenyl	79
2,4,6-Tribromophenol	54	Terphenyl-d14	75

EPA 8270
SEMIVOLATILE BLANK SPIKE\BLANK SPIKE DUPLICATE RECOVERY

Curtis & Tompkins, Ltd.

Lab Name: CURTIS & TOMPKINS, LTD Batchnum: 30595

Matrix Spike Sample No : QC33415

Percent moisture: %

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	BS CONCENTRATION (ug/Kg)	% REC #	QC LIMITS REC.
Phenol	200000	0	142700	71	26-90
2-Chlorophenol	200000	0	160700	80	25-102
1,4-Dichlorobenzene	100000	0	81240	81	28-104
N-Nitroso-di-n-prop.(1)	100000	0	57400	57	41-126
1,2,4-Trichlorobenzene	100000	0	79170	79	38-107
4-Chloro-3-methylphenol	200000	0	147200	74	26-103
Acenaphthene	100000	0	68390	68	31-137
4-Nitrophenol	200000	0	76170	38	11-114
2,4-Dinitrotoluene	100000	0	51460	51	28-89
Pentachlorophenol	200000	0	56530	28	17-109
Pyrene	100000	0	59040	59	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	BSD CONCENTRATION (ug/Kg)	BSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	200000	151300	76	7	35	26-90
2-Chlorophenol	200000	177200	89	11	50	25-102
1,4-Dichlorobenzene	100000	86840	87	7	27	28-104
N-Nitroso-di-n-prop.(1)	100000	62220	62	8	38	41-126
1,2,4-Trichlorobenzene	100000	86850	87	10	23	38-107
4-Chloro-3-methylphenol	200000	148000	74	0	33	26-103
Acenaphthene	100000	72650	73	7	19	31-137
4-Nitrophenol	200000	75080	38	0	50	11-114
2,4-Dinitrotoluene	100000	54200	54	6	47	28-89
Pentachlorophenol	200000	48300	24	15	47	17-109
Pyrene	100000	62040	62	5	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 30528
Units: ug/L
Diln Fac: 1

Prep Date: 10/23/96
Analysis Date: 10/25/96

MB Lab ID: QC33175

Analyte	Result	Reporting Limit
Phenol	ND	10
2-Chlorophenol	ND	10
Benzyl alcohol	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
2,4-Dichlorophenol	ND	10
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	50
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
4,6-Dinitro-2-methylphenol	ND	50
Pentachlorophenol	ND	10
N-Nitrosodimethylamine	ND	10
Aniline	ND	10
bis(2-Chloroethyl)ether	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10
bis(2-Chloroisopropyl) ether	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
bis(2-Chloroethoxy)methane	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 30528
Units: ug/L
Diln Fac: 1

Prep Date: 10/23/96
Analysis Date: 10/25/96

MB Lab ID: QC33175

Analyte	Result	Reporting Limit
Acenaphthene	ND	10
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
4-Chlorophenyl-phenylether	ND	10
Fluorene	ND	10
4-Nitroaniline	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10

Surrogate	%Rec	Recovery Limits
2-Fluorophenol	73	21-110
Phenol-d5	84	10-110
2,4,6-Tribromophenol	82	10-123
Nitrobenzene-d5	70	35-114
2-Fluorobiphenyl	73	43-116
Terphenyl-d14	64	33-141

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 30528
Units: ug/L
Diln Fac: 1

Prep Date: 10/23/96
Analysis Date: 10/25/96

BS Lab ID: QC33176

Analyte	Spike Added	BS	%Rec #	Limits
Phenol	100	59.41	59	12-110
2-Chlorophenol	100	66.35	66	27-123
4-Chloro-3-methylphenol	100	60.76	61	23-97
4-Nitrophenol	100	48.51	49	10-80
Pentachlorophenol	100	51.23	51	9-103
1,4-Dichlorobenzene	50	26.21	52	36-97
N-Nitroso-di-n-propylamine	50	23.74	47	41-116
1,2,4-Trichlorobenzene	50	28.11	56	39-98
Acenaphthene	50	29.24	58	46-118
2,4-Dinitrotoluene	50	26.8	54	24-96
Pyrene	50	25.98	52	26-127

Surrogate	%Rec	Limits
2-Fluorophenol	64	21-110
Phenol-d5	74	10-110
2,4,6-Tribromophenol	82	10-123
Nitrobenzene-d5	62	35-114
2-Fluorobiphenyl	65	43-116
Terphenyl-d14	60	33-141

BSD Lab ID: QC33177

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Phenol	100	57.97	58	12-110	2	42
2-Chlorophenol	100	63.56	64	27-123	3	40
4-Chloro-3-methylphenol	100	65.95	66	23-97	8	42
4-Nitrophenol	100	54.52	55	10-80	12	50
Pentachlorophenol	100	54.47	54	9-103	6	50
1,4-Dichlorobenzene	50	25.03	50	36-97	4	28
N-Nitroso-di-n-propylamine	50	26.1	52	41-116	10	38
1,2,4-Trichlorobenzene	50	27.69	55	39-98	2	28
Acenaphthene	50	32.17	64	46-118	10	31
2,4-Dinitrotoluene	50	29.69	59	24-96	9	38
Pyrene	50	28.53	57	26-127	9	31

Surrogate	%Rec	Limits
2-Fluorophenol	60	21-110
Phenol-d5	72	10-110
2,4,6-Tribromophenol	89	10-123
Nitrobenzene-d5	64	35-114
2-Fluorobiphenyl	70	43-116
Terphenyl-d14	66	33-141

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits
DO: Surrogate diluted out

PCBs

Client:	Subsurface Consultants	Analysis Method:	PCB
Project#:	133.005	Prep Method:	EPA 3580
Location:	KOT	Cleanup Method:	EPA Acid

Field ID:	MANHOLE @ START	Sampled:	10/16/96
Lab ID:	127155-001	Received:	10/16/96
Matrix:	Oil	Extracted:	10/18/96
Batch#:	30422	Analyzed:	10/18/96
Units:	ug/Kg		
Diln Fac:	1		

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1000
Aroclor-1221	ND	1000
Aroclor-1232	ND	1000
Aroclor-1242	ND	1000
Aroclor-1248	ND	1000
Aroclor-1254	ND	1000
Aroclor-1260	22000	1000

Surrogate	%Recovery	Recovery Limits
TCMX	64	60-150
Decachlorobiphenyl	81	30-130

PCBs

Client:	Subsurface Consultants	Analysis Method:	PCB
Project#:	133.005	Prep Method:	EPA 3520
Location:	KOT	Cleanup Method:	EPA acid

Field ID:	MANHOLE @ 2000GAL	Sampled:	10/16/96
Lab ID:	127155-002	Received:	10/16/96
Matrix:	Water	Extracted:	10/18/96
Batch#:	30439	Analyzed:	10/22/96
Units:	ug/L		
Diln Fac:	10		

Analyte	Result	Reporting Limit
Aroclor-1016	ND	10
Aroclor-1221	ND	10
Aroclor-1232	ND	10
Aroclor-1242	ND	10
Aroclor-1248	ND	10
Aroclor-1254	ND	10
Aroclor-1260	40	10

Surrogate	%Recovery	Recovery Limits
TCMX	73	60-150
Decachlorobiphenyl	34	30-130

PCBs

Client:	Subsurface Consultants	Analysis Method:	PCB
Project#:	133.005	Prep Method:	EPA 3520
Location:	KOT	Cleanup Method:	EPA acid

Field ID:	MANHOLE @ 8700GAL	Sampled:	10/16/96
Lab ID:	127155-004	Received:	10/16/96
Matrix:	Water	Extracted:	10/18/96
Batch#:	30439	Analyzed:	10/22/96
Units:	ug/L		
Diln Fac:	1		

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Recovery	Recovery Limits
TCMX	73	60-150
Decachlorobiphenyl	68	30-130

Polychlorinated Biphenyls

Client:	Subsurface Consultants	Analysis Method:	PCB
Project#:	133.005	Prep Method:	EPA 3580
Location:	KOT	Cleanup Method:	EPA Acid

METHOD BLANK

Matrix:	Oil	Prep Date:	10/18/96
Batch#:	30422	Analysis Date:	10/21/96
Units:	ug/Kg		
Diln Fac:	1		

MB Lab ID: QC32772

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1000
Aroclor-1221	ND	1000
Aroclor-1232	ND	1000
Aroclor-1242	ND	1000
Aroclor-1248	ND	1000
Aroclor-1254	ND	1000
Aroclor-1260	ND	1000

Surrogate	%Rec	Recovery Limits
TCMX	86	60-150
Decachlorobiphenyl	87	30-130

Polychlorinated Biphenyls

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3520
Cleanup Method: EPA acid

METHOD BLANK

Matrix: Water
Batch#: 30439
Units: ug/L
Diln Fac: 1

Prep Date: 10/18/96
Analysis Date: 10/21/96

MB Lab ID: QC32842

Analyte	Result	Reporting Limit
Aroclor-1016	ND	1.0
Aroclor-1221	ND	1.0
Aroclor-1232	ND	1.0
Aroclor-1242	ND	1.0
Aroclor-1248	ND	1.0
Aroclor-1254	ND	1.0
Aroclor-1260	ND	1.0

Surrogate	%Rec	Recovery Limits
TCMX	56	60-150
Decachlorobiphenyl	31	30-130

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

Polychlorinated Biphenyls

Client:	Subsurface Consultants	Analysis Method:	PCB
Project#:	133.005	Prep Method:	EPA 3580
Location:	KOT	Cleanup Method:	EPA Acid

LABORATORY CONTROL SAMPLE

Matrix:	Oil	Prep Date:	10/18/96
Batch#:	30422	Analysis Date:	10/18/96
Units:	ug/Kg		
Diln Fac:	1		

LCS Lab ID: QC32773

Analyte	Result	Spike Added	%Rec #	Limits
Aroclor-1260	9902	10000	99	50-128

Surrogate	%Rec	Limits
TCMX	86	60-150
Decachlorobiphenyl	79	30-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 1 outside limits

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

Polychlorinated Biphenyls

Client:	Subsurface Consultants	Analysis Method:	PCB
Project#:	133.005	Prep Method:	EPA 3520
Location:	KOT	Cleanup Method:	EPA acid

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix:	Water	Prep Date:	10/18/96
Batch#:	30439	Analysis Date:	10/21/96
Units:	ug/L		
Diln Fac:	1		

BS Lab ID: QC32843

Analyte	Spike Added	BS	%Rec #	Limits
Aroclor-1260	5	5.1	102	50-128
Surrogate	**%Rec**	**Limits**		
TCMX	54*	60-150		
Decachlorobiphenyl	40	30-130		

BSD Lab ID: QC32844

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Aroclor-1260	5	5.2	105	50-128	3	20
Surrogate	**%Rec**	**Limits**				
TCMX	50*	60-150				
Decachlorobiphenyl	25*	30-130				

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

Curtis & Tompkins, Ltd.

Lab #: 127155 BATCH QC REPORT

Polychlorinated Biphenyls

Client:	Subsurface Consultants	Analysis Method:	PCB
Project#:	133.005	Prep Method:	EPA 3580
Location:	KOT	Cleanup Method:	EPA Acid

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID:	MANHOLE @ START	Sample Date:	10/16/96
Lab ID:	127155-001	Received Date:	10/16/96
Matrix:	Oil	Prep Date:	10/18/96
Batch#:	30422	Analysis Date:	10/18/96
Units:	ug/Kg		
Diln Fac:	1		

MS Lab ID: QC32774

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Aroclor-1260	10000	22400	35290	129 *	50-128

Surrogate	%Rec	Limits
TCMX	61	60-150
Decachlorobiphenyl	81	30-130

MSD Lab ID: QC32775

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Aroclor-1260	10000	32840	104	50-128	7	25

Surrogate	%Rec	Limits
TCMX	61	60-150
Decachlorobiphenyl	83	30-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 1 out of 2 outside limits

CORE LABORATORIES

CORE LABORATORIES
A N A L Y T I C A L R E P O R T

Job Number: 961837
Prepared For:

Curtis & Tompkins, Ltd.
Tracy Babjar
2323 Fifth Street
Berkeley, CA 94710

Date: 10/29/96

Signature _____ Date: 10/29/96

Name: Greg L. Cook

Core Laboratories-Long Beach
3700 Cherry Avenue
Long Beach, CA 90807

Title: Laboratory Manager

CORE LABORATORIES

LABORATORY TESTS RESULTS
10/29/96

JOB NUMBER: 961837 CUSTOMER: Curtis & Tompkins, Ltd. ATTN: Tracy Babjar

CLIENT I.D.....: 127155-001
DATE SAMPLED.....: 10/16/96
TIME SAMPLED.....: :
WORK DESCRIPTION...: 127155-001

LABORATORY I.D...: 961837-0001
DATE RECEIVED....: 10/28/96
TIME RECEIVED....: 08:35
REMARKS.....: 2, 40ml VOA Vials 1,1/2 Full

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Simulated Distillation, Distillate		*1		ASTM D-2887	10/29/96	CSS
IBP	313	1	Deg F	ASTM D-2887		
1 % Off	337	1	Deg F	ASTM D-2887		
2 % Off	361	1	Deg F	ASTM D-2887		
3 % Off	376	1	Deg F	ASTM D-2887		
4 % Off	387	1	Deg F	ASTM D-2887		
5 % Off	396	1	Deg F	ASTM D-2887		
6 % Off	403	1	Deg F	ASTM D-2887		
7 % Off	409	1	Deg F	ASTM D-2887		
8 % Off	415	1	Deg F	ASTM D-2887		
9 % Off	420	1	Deg F	ASTM D-2887		
10 % Off	425	1	Deg F	ASTM D-2887		
11 % Off	430	1	Deg F	ASTM D-2887		
12 % Off	434	1	Deg F	ASTM D-2887		
13 % Off	439	1	Deg F	ASTM D-2887		
14 % Off	443	1	Deg F	ASTM D-2887		
15 % Off	447	1	Deg F	ASTM D-2887		
16 % Off	452	1	Deg F	ASTM D-2887		
17 % Off	457	1	Deg F	ASTM D-2887		
18 % Off	461	1	Deg F	ASTM D-2887		
19 % Off	465	1	Deg F	ASTM D-2887		
20 % Off	468	1	Deg F	ASTM D-2887		
21 % Off	471	1	Deg F	ASTM D-2887		
22 % Off	474	1	Deg F	ASTM D-2887		
23 % Off	477	1	Deg F	ASTM D-2887		
24 % Off	480	1	Deg F	ASTM D-2887		
25 % Off	483	1	Deg F	ASTM D-2887		
26 % Off	487	1	Deg F	ASTM D-2887		
27 % Off	490	1	Deg F	ASTM D-2887		
28 % Off	493	1	Deg F	ASTM D-2887		
29 % Off	496	1	Deg F	ASTM D-2887		
30 % Off	499	1	Deg F	ASTM D-2887		
31 % Off	502	1	Deg F	ASTM D-2887		
32 % Off	505	1	Deg F	ASTM D-2887		
33 % Off	508	1	Deg F	ASTM D-2887		
34 % Off	511	1	Deg F	ASTM D-2887		
35 % Off	513	1	Deg F	ASTM D-2887		
36 % Off	516	1	Deg F	ASTM D-2887		
37 % Off	519	1	Deg F	ASTM D-2887		
38 % Off	522	1	Deg F	ASTM D-2887		
39 % Off	524	1	Deg F	ASTM D-2887		
40 % Off	526	1	Deg F	ASTM D-2887		
41 % Off	529	1	Deg F	ASTM D-2887		
42 % Off	531	1	Deg F	ASTM D-2887		

3700 Cherry Avenue
Long Beach, CA 90807
(310) 595-8401

CORELAB

CORE LABORATORIES

LABORATORY TESTS RESULTS
10/29/96

JOB NUMBER: 961837 CUSTOMER: Curtis & Tompkins, Ltd. ATTN: Tracy Babjar

CLIENT I.D.....: 127155-001
DATE SAMPLED.....: 10/16/96
TIME SAMPLED.....: :
WORK DESCRIPTION...: 127155-001

LABORATORY I.D...: 961837-0001
DATE RECEIVED....: 10/28/96
TIME RECEIVED....: 08:35
REMARKS.....: 2, 40ml VOA Vials 1,1/2 Full

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
43 % Off	533	1	Deg F	ASTM D-2887		
44 % Off	536	1	Deg F	ASTM D-2887		
45 % Off	538	1	Deg F	ASTM D-2887		
46 % Off	540	1	Deg F	ASTM D-2887		
47 % Off	543	1	Deg F	ASTM D-2887		
48 % Off	545	1	Deg F	ASTM D-2887		
49 % Off	548	1	Deg F	ASTM D-2887		
50 % Off	550	1	Deg F	ASTM D-2887		
Simulated Distillation, Continued		*1		ASTM D-2887	10/29/96	CSS
51 % Off	552	1	Deg F	ASTM D-2887		
52 % Off	555	1	Deg F	ASTM D-2887		
53 % Off	557	1	Deg F	ASTM D-2887		
54 % Off	560	1	Deg F	ASTM D-2887		
55 % Off	562	1	Deg F	ASTM D-2887		
56 % Off	565	1	Deg F	ASTM D-2887		
57 % Off	567	1	Deg F	ASTM D-2887		
58 % Off	569	1	Deg F	ASTM D-2887		
59 % Off	571	1	Deg F	ASTM D-2887		
60 % Off	573	1	Deg F	ASTM D-2887		
61 % Off	576	1	Deg F	ASTM D-2887		
62 % Off	578	1	Deg F	ASTM D-2887		
63 % Off	581	1	Deg F	ASTM D-2887		
64 % Off	583	1	Deg F	ASTM D-2887		
65 % Off	586	1	Deg F	ASTM D-2887		
66 % Off	589	1	Deg F	ASTM D-2887		
67 % Off	591	1	Deg F	ASTM D-2887		
68 % Off	593	1	Deg F	ASTM D-2887		
69 % Off	596	1	Deg F	ASTM D-2887		
70 % Off	598	1	Deg F	ASTM D-2887		
71 % Off	601	1	Deg F	ASTM D-2887		
72 % Off	603	1	Deg F	ASTM D-2887		
73 % Off	606	1	Deg F	ASTM D-2887		
74 % Off	609	1	Deg F	ASTM D-2887		
75 % Off	611	1	Deg F	ASTM D-2887		
76 % Off	614	1	Deg F	ASTM D-2887		
77 % Off	617	1	Deg F	ASTM D-2887		
78 % Off	620	1	Deg F	ASTM D-2887		
79 % Off	623	1	Deg F	ASTM D-2887		
80 % Off	626	1	Deg F	ASTM D-2887		
81 % Off	629	1	Deg F	ASTM D-2887		
82 % Off	633	1	Deg F	ASTM D-2887		
83 % Off	636	1	Deg F	ASTM D-2887		
84 % Off	640	1	Deg F	ASTM D-2887		

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CORE LABORATORIES

LABORATORY TESTS RESULTS
10/29/96

JOB NUMBER: 961837 CUSTOMER: Curtis & Tompkins, Ltd. ATTN: Tracy Babjar

CLIENT I.D.....: 127155-001
DATE SAMPLED.....: 10/16/96
TIME SAMPLED.....: :
WORK DESCRIPTION...: 127155-001

LABORATORY I.D...: 961837-0001
DATE RECEIVED....: 10/28/96
TIME RECEIVED....: 08:35
REMARKS.....: 2, 40ml VOA Vials 1,1/2 Full

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
85 % Off	643	1	Deg F	ASTM D-2887		
86 % Off	647	1	Deg F	ASTM D-2887		
87 % Off	651	1	Deg F	ASTM D-2887		
88 % Off	656	1	Deg F	ASTM D-2887		
89 % Off	661	1	Deg F	ASTM D-2887		
90 % Off	666	1	Deg F	ASTM D-2887		
91 % Off	671	1	Deg F	ASTM D-2887		
92 % Off	678	1	Deg F	ASTM D-2887		
93 % Off	685	1	Deg F	ASTM D-2887		
94 % Off	693	1	Deg F	ASTM D-2887		
95 % Off	704	1	Deg F	ASTM D-2887		
96 % Off	719	1	Deg F	ASTM D-2887		
97 % Off	740	1	Deg F	ASTM D-2887		
98 % Off	773	1	Deg F	ASTM D-2887		
99 % Off	812	1	Deg F	ASTM D-2887		
FBP	834	1	Deg F	ASTM D-2887		
Bottom Sediment & Water		*1		ASTM D-96	10/29/96	SJ
B.S. & W. - Water Fraction	3.6	0.05	Volume %	ASTM D-96		
B.S. & W. - Sediment Fraction	<.05	0.05	Volume %	ASTM D-96		
B.S. & W. - Oil Fraction	96.4	0.05	Volume %	ASTM D-96		

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CORE LABORATORIES

QUALITY ASSURANCE REPORT
10/29/96

JOB NUMBER: 961837 CUSTOMER: Curtis & Tompkins, Ltd. ATTN: Tracy Babjar

Bottom Sediment And Water DATE ANALYZED: 10/29/96 TIME ANALYZED: 11:23 METHOD: ASTM D-96 QC NUMBER:953133

DUPLICATES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	DETECTION LIMITS	UNITS OF MEASURE
B.S. & W. - Water Fraction	Analytical	961621-1	1	2.8	2.8	0	0.00	Volume %
B.S. & W. - Sediment Fraction	Analytical	961621-1	1	0.000	0.000	0	0.00	Volume %
B.S. & W. - Oil Fraction	Analytical	961621-1	1	97.2	97.2	0	0.00	Volume %

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CORE LABORATORIES

QUALITY ASSURANCE REPORT
10/29/96

JOB NUMBER: 961837 CUSTOMER: Curtis & Tompkins, Ltd. ATTN: Tracy Babjar

Simulated Distillation, Distillate DATE ANALYZED: 10/29/96 TIME ANALYZED: 10:36 METHOD: ASTM D-2887 QC NUMBER:953134

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
IBP	Reagent	Helium	1	<1	1	Deg F
5 % Off	"	"	1	<1	1	Deg F
10 % Off	"	"	1	<1	1	Deg F
15 % Off	"	"	1	<1	1	Deg F
20 % Off	"	"	1	<1	1	Deg F
25 % Off	"	"	1	<1	1	Deg F
30 % Off	"	"	1	<1	1	Deg F
35 % Off	"	"	1	<1	1	Deg F
40 % Off	"	"	1	<1	1	Deg F
45 % Off	"	"	1	<1	1	Deg F
50 % Off	"	"	1	<1	1	Deg F
55 % Off	"	"	1	<1	1	Deg F
60 % Off	"	"	1	<1	1	Deg F
65 % Off	"	"	1	<1	1	Deg F
70 % Off	"	"	1	<1	1	Deg F
75 % Off	"	"	1	<1	1	Deg F
80 % Off	"	"	1	<1	1	Deg F
85 % Off	"	"	1	<1	1	Deg F
90 % Off	"	"	1	<1	1	Deg F
95 % Off	"	"	1	<1	1	Deg F
FBP	"	"	1	<1	1	Deg F

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CORE LABORATORIES

QUALITY ASSURANCE REPORT
10/29/96

JOB NUMBER: 961837 CUSTOMER: Curtis & Tompkins, Ltd. ATTN: Tracy Babjar

Simulated Distillation, Distillate DATE ANALYZED: 10/29/96 TIME ANALYZED: 10:36 METHOD: ASTM D-2887 QC NUMBER:953134

REFERENCE STANDARDS

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE	TRUE VALUE	PERCENT RECOVERY	DETECTION LIMITS	UNITS OF MEASURE
IBP	Reference	RGO#1 B-2	1	234	240	98	1	Deg F
5 % Off	"	"	1	296	304	97	1	Deg F
10 % Off	"	"	1	342	348	98	1	Deg F
15 % Off	"	"	1	388	393	99	1	Deg F
20 % Off	"	"	1	427	435	98	1	Deg F
25 % Off	"	"	1	462	470	98	1	Deg F
30 % Off	"	"	1	491	499	98	1	Deg F
35 % Off	"	"	1	520	527	99	1	Deg F
40 % Off	"	"	1	544	552	99	1	Deg F
45 % Off	"	"	1	567	576	98	1	Deg F
50 % Off	"	"	1	588	594	99	1	Deg F
55 % Off	"	"	1	604	611	99	1	Deg F
60 % Off	"	"	1	622	629	99	1	Deg F
65 % Off	"	"	1	642	649	99	1	Deg F
[illegible] % Off	"	"	1	662	668	99	1	Deg F
[illegible] % Off	"	"	1	683	690	99	1	Deg F
[illegible] % Off	"	"	1	706	712	99	1	Deg F
85 % Off	"	"	1	730	736	99	1	Deg F
90 % Off	"	"	1	759	764	99	1	Deg F
95 % Off	"	"	1	799	803	100	1	Deg F
FBP	"	"	1	886	888	100	1	Deg F

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QUALITY ASSURANCE REPORT
10/29/96

JOB NUMBER: 961837 CUSTOMER: Curtis & Tompkins, Ltd. ATTN: Tracy Babjar

Simulated Distillation, Distillate DATE ANALYZED: 10/29/96 TIME ANALYZED: 10:36 METHOD: ASTM D-2887 QC NUMBER:953134

DUPLICATES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	DETECTION LIMITS	UNITS OF MEASURE
IBP	Analytical	961837-1	1	313	314	0	1	Deg F
5 % Off	"	961837-1	1	396	396	0	1	Deg F
10 % Off	"	961837-1	1	425	425	0	1	Deg F
15 % Off	"	961837-1	1	447	448	0	1	Deg F
20 % Off	"	961837-1	1	468	468	0	1	Deg F
25 % Off	"	961837-1	1	483	484	0	1	Deg F
30 % Off	"	961837-1	1	499	500	0	1	Deg F
35 % Off	"	961837-1	1	513	514	0	1	Deg F
40 % Off	"	961837-1	1	526	527	0	1	Deg F
45 % Off	"	961837-1	1	538	538	0	1	Deg F
50 % Off	"	961837-1	1	550	550	0	1	Deg F
55 % Off	"	961837-1	1	562	563	0	1	Deg F
60 % Off	"	961837-1	1	573	573	0	1	Deg F
65 % Off	"	961837-1	1	586	586	0	1	Deg F
70 % Off	"	961837-1	1	598	598	0	1	Deg F
75 % Off	"	961837-1	1	611	612	0	1	Deg F
80 % Off	"	961837-1	1	626	626	0	1	Deg F
85 % Off	"	961837-1	1	643	643	0	1	Deg F
90 % Off	"	961837-1	1	666	666	0	1	Deg F
95 % Off	"	961837-1	1	704	705	0	1	Deg F
FBP	"	961837-1	1	834	835	0	1	Deg F

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CORE LABORATORIES

QUALITY ASSURANCE FOOTER
10/29/96

Analyses performed in accordance with ASTM Testing Procedures. Samples are retained for thirty days after report submission. After thirty days, samples are disposed in accordance with Core Laboratories' Disposal Policies. Samples will be retained longer with prior arrangement. Storage fees may apply. Due to batching of quality control data, the "Date Analyzed" and "Time Analyzed" in the QA Report may not reflect the actual date and time of analysis for quality control data. The dates analyzed for Laboratory Tests Results are the actual date of analysis.

All methods of chemical analysis have a statistical uncertainty associated with the results. Unless otherwise indicated, the data in this report are within the limits of uncertainty as specified in the referenced method. Quality control acceptance criteria are based either on actual laboratory performance or on limits specified in the referenced method.

SUBCONTRACTED LABORATORY LOCATIONS - For analyses performed by a subcontract laboratory, a "*" and the designated laboratory code is indicated in the "TECHN" column of the laboratory test results report.

Core Laboratories:	Anaheim, California	*AN	Casper, Wyoming	*CA
	Aurora, Colorado	*AU	Houston, Texas	*HP

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CHAIN OF CUSTODY FORM

PAGE ____ OF ____

PROJECT NAME: Keep On Tracking
JOB NUMBER: 133.005
PROJECT CONTACT: Jerome de Verrier
SAMPLED BY: Jerome de Verrier
LAB: Curtis & Tompkins
TURNAROUND: Standard
REQUESTED BY: Jerome de Verrier

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR	Free Prod.	CONTAINERS: VOA	LITER	PINT	TUBE	METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED
	Manhole @ Start					X	2							X		10	16	96	1200	X	
	Manhole @ 3000 gal	X					2	2						X						X	
	Manhole @ 6500 gal	X					2	2						X						X	
	Manhole @ 9700 gal	X					2	2						X						X	

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
Jerome	10/16/96 1515		
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
		10/16/96	1515

COMMENTS & NOTES:
Please hold.

Subsurface Consultants, Inc.
171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
(510) 268-0461 • FAX: 510-268-0137

CHAIN OF CUSTODY FORM

12715

PAGE ___ OF ___

PROJECT NAME: Keep On Tracking
JOB NUMBER: 133.005
PROJECT CONTACT: Jerome deLorier
SAMPLED BY: Jerome deLorier

LAB: Curtis & Tompkins
TURNAROUND: Standard
REQUESTED BY: Jerome deLorier

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR	Free Prod.	CONTAINERS: VOA	LITER	PINT	TUBE		METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: Boiling Point	TEH (Diesel + Motor Oil)	TPH as Gasoline (5 + 8 Filter)	8240	8270	PCB	Bottom Sediment, Filter		
-1	Manhole ① Start					X	2								X		10	16	96	1200	X	X	X	X	X	X	X	X			
-2	Manhole ② 2000 gal	X					2	2							X								X		X	X	X			
-3	Manhole ③ 6500 gal	X					2	2							X						*	do not analyze								
-4	Manhole ④ 8500 gal	X					2	2							X						X		X		X	X	X			

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
Jerome	10/16/96 1515		
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
			10/16/96 515

COMMENTS & NOTES:
Rear hold.

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Appendix E

WELL DEVELOPMENT AND GROUNDWATER MEASUREMENT FORMS
PERMITS

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI MW-4
Job No.: 133005
Well Casing Diameter: ~~4~~ 2 inches
Developed By: DA
Date: 8/21/96 / 8/22/96 3:18pm
TOC Elevation: ____
Weather: sunny, warm

Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater (below TOC) 4.24 4.96 on 8/27/96 feet
Feet of Water in Well 13.76 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.3 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Development Method disposable bailer

slow recharge rate = 1ft/45min.

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (F)	Conductivity (micromhos/cm)	Salinity S%	Comments
3	7.33	73.8	1610		murky/no odor
6	7.27	71.9	1940		"
9	7.33	70.5	2330		"
12	7.64	69.1	2450		Dry @ 12 gals.
3/22/96 15 12 Tim Bate	7.66	75.8	2320		clear
15	7.49	74.2	1815		"
18	7.34	72.4	1895		"
21	7.36	70.4	2400		dewatered

Total Gallons Removed 12 21 gallons
Depth to Groundwater After Development (below TOC) 4.10 feet

This well sampled w/ 3 volumes purged

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCJ MW-5
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DA / JR / MM
Date: 8/21/96 9:40
8/22/96 2:55
TOC Elevation:
Weather: Sunny, warm

Depth to Casing Bottom (below TOC) 16.43 feet
16.82 8/22/96 10.39 8/26/96
Depth to Groundwater (below TOC) 18.24 feet
Feet of Water in Well 1.81 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) .29 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Development Method bailing disposable bailer

very slow recharge
NO product

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1/4	7.81	67.7	2620		slightly murky no odor
1/2	7.71	66.2	2590		
3/4	7.54	66.4	2660		
1	7.41	65.9	2680		
1 1/2	7.39	66.8	2740		
8/22/96 Tim BAE 1.5	7.15	76.5	3000		clear
1.75	7.08	72.2	2770		dewatered
2.00	7.00	70.7	2830		

Total Gallons Removed 2.0 gallons
Depth to Groundwater After Development (below TOC) 17.97 feet

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JOB NUMBER DATE APPROVED PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCE MW-6
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DA
Date: 8/21/96
TOC Elevation:
Weather: sunny, warm

Depth to Casing Bottom (below TOC) 6.78 feet
Depth to Groundwater (below TOC) 19.27 feet
Feet of Water in Well 12.49 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.04 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Development Method bailing (disposable bailer)

last recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
3 1/2	7.92	68	3110		slightly murky no odor
5 2	7.86	66	2960		
9 4	7.73	69	3000		
8	7.69	67	2910		spotty sheen
12	7.67	69.1	2900		
15	7.64	66.9	2960		
20	7.58	67.1	2960		

Total Gallons Removed 20 gallons
Depth to Groundwater After Development (below TOC) 7.06 feet

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JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SC1 MW-7
Job No.: 133605
Well Casing Diameter: 2" inches
Developed By: TIM DUANE BAE, i
Date: 8-22-96 9:26 AM
TOC Elevation: _____
Weather: PARTLY CLOUDY

Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater (below TOC) 14.76 [(10.25) on 8/26/96] feet
Feet of Water in Well 3.24 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) ~~.89~~ .53 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Development Method disposable bailer

NO Free Product
very slow recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S‰	Comments
.25	7.67	69.4	2830		clear/no odor
.5	7.43	69.5	2800		
1	7.17	67.5	2680		
1½	7.16	67.2	2650		
2	7.14	66.6	2650		
2½	7.23	66.4	2710		
2½	7.15	67.6	2750		
5	7.65	72.7	3610		clear/slight odor
8	7.48	71.9	3700		

8/26/96

Total Gallons Removed ~~24~~ 8 gallons
Depth to Groundwater After Development (below TOC) 17.76 feet

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI MW-8
Job No.: 133005
Well Casing Diameter: 2" inches
Developed By: T. DUNNE BAILER
Date: 8-22-96 10:15 AM
TOC Elevation:
Weather: SUNNY

Depth to Casing Bottom (below TOC) 17.76 feet
Depth to Groundwater (below TOC) 5.58 feet
Feet of Water in Well 12.18 feet
Casing Volume (feet of water x Casing DIA ² x 0.0408) 2.12 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Development Method BAILER
NO FREE PRODUCT

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
.25	7.76	75.1	2340		FAIRLY CLEAR
1.00	7.47	74.9	1940		
2.00	7.17	73.7	1760		
4.00	7.03	72.0	1716		
6.00	6.91	69.3	1848		MURKY
8.00	6.86	68.9	1848		
10.00	6.73	69.2	1960		
12.00	6.66	67.9	20.50		REAL MURKY
14.00	7.08	73.1	21.10		CLEARED UP
15.00	6.93	74.2	21.30		

Total Gallons Removed 15.0 GAL. gallons
Depth to Groundwater After Development (below TOC) 17.04 (5.58 when sampled 8/26/96) feet

This well sampled w/o 3 volumes purged

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCIMW-9
Job No.: 133.005
Well Casing Diameter: 2" inches
Developed By: TIM DUNNE RAE, i. DWA (Sc!)
Date: 8-22-96 12:00PM
TOC Elevation:
Weather: SUNNY

Depth to Casing Bottom (below TOC) 18.16 feet
Depth to Groundwater (below TOC) 7.18 (4.85' on 8/26/96) feet
Feet of Water in Well 10.98 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.8 gallons
Depth Measurement Method Tape & Paste / ~~Electronic Sounder~~ / Other
Development Method BAILER
NO FREE PRODUCT

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0.25	7.00	77.5	2500		MOD. CLEAR
1.00	6.93	77.3	2130		
2.50	6.82	75.6	2130		
4.50	6.83	74.9	2130		
6.5	6.89	74.1	2240		CLEAR
8.0	7.15	75.2	2560		
8.25	7.02	73.7	2400		Dry @ 8.5 gals.
8/26/96 13	7.10	72.2	3200		clear/no odor
18	7.62	69.2	3110		Dry @ 18 gals.

Total Gallons Removed 18 gallons
Depth to Groundwater After Development (below TOC) 18.06 feet

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI MW-10

Job No.: 133.005
Well Casing Diameter: 2" inches

Developed By: T. DUANE BAEJ.
Date: 8-22-96 1:30 PM

TOC Elevation: _____
Weather: _____

Depth to Casing Bottom (below TOC) 18.02 feet

Depth to Groundwater (below TOC) 4.56 feet

Feet of Water in Well 13.46 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.2 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Development Method BAILER

NO FREE PRODUCT
moderate recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0.25	6.82	80.3	2950		MURKY
2.00	6.88	78.4	2720		CLEARED
4.00	6.76	79.2	2620		
6.00	6.72	79.8	2600		
8.00	6.84	76.4	2510		
10.00	6.86	75.0	2550		MURKY
12.00	7.07	76.2	2700		
13.00	6.96	74.3	2460		
8/26/96 18	7.55	72.0	3170		murky
22	7.36	70.6	3000		

Total Gallons Removed ~~13.00~~ 22 gallons

Depth to Groundwater After Development (below TOC) 16.57 feet

This well sampled w/o 3 volumes purged

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SC1-MW-11
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DWA
Date: 8/26/96
TOC Elevation:
Weather: foggy

Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater (below TOC) 4.70 feet
Feet of Water in Well 13.30 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.2 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Development Method disposable bailer
fast recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
3	8.31	75.2	2330		murky/no odor/spotty sh
6	7.98	74.0	1930		
9	7.92	73.4	2040		
12	7.78	73.1	2010		
15	7.68	73.8	1950		
18	7.66	73.8	2030		
22	7.66	74.6	2030		

Total Gallons Removed 22 gallons
Depth to Groundwater After Development (below TOC) feet

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI-MW-12
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DWA
Date: 8/27/96
TOC Elevation:
Weather: foggy

Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater (below TOC) 7.26 feet
Feet of Water in Well 10.74 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.8 gallons
Depth Measurement Method (Tape & Paste) / Electronic Sounder / Other
Development Method disposable bailer

no free product
fast recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
3	7.95	64.8	3130		murky/no odor
6	7.62	65.8	3090		
9	7.56	67.7	3170		
12	7.52	68.1	3290		
15	7.50	68.1	3330		
18	7.53	67.8	3340		

Total Gallons Removed 18 gallons
Depth to Groundwater After Development (below TOC) 7.36 feet

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCT-MW-13
Job No.: 133005
Well Casing Diameter: 2 inches
Developed By: DWA
Date: 8/27/96
TOC Elevation: ____
Weather: Sunny

Depth to Casing Bottom (below TOC) 18.50 feet
Depth to Groundwater (below TOC) 5.26 feet
Feet of Water in Well 13.24 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.2 gallons
Depth Measurement Method (Tape & Paste) / (Electronic Sounder) / Other
Development Method disposable bailer

no free product
slow / moderate recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
3	7.63	69.4	2620		semi clear/no odor
6	7.19	68.7	2260		murky
9	7.22	66.3	2410		increasing sediments
12	7.23	65.9	2420		drawn down to 1' repeatedly
15	7.82	66.7	2280		
18	7.86	66.3	2050		decreasing turbidity
21	7.45	65.2	1980		

Total Gallons Removed 22 gallons
Depth to Groundwater After Development (below TOC) 17.03 feet

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI-MW-14
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DWA
Date: 8/27/96
TOC Elevation:
Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater (below TOC) 8.04 feet
Feet of Water in Well 9.96 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.6 gallons
Depth Measurement Method (Tape & Paste) / (Electronic Sounder) / Other
Development Method disposable bailer

No Free Product
slow/moderate recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1	7.96	68.4	1460		clear/slight odor
3	7.63	70.2	1660		semi-clear
5	7.50	69.4	1830		↓
7	7.57	69.4	1810		↓
9	7.54	67.0	1880		murky/decreasing odor
12	7.46	65.8	1970		
15	7.62	66.2	1730		

Total Gallons Removed 16 gallons
Depth to Groundwater After Development (below TOC) 15.47' feet

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI-MW-15
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DWA
Date: 8/27/96
TOC Elevation:
Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater (below TOC) 8.48 feet
Feet of Water in Well 9.52 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.6 gallons
Depth Measurement Method (Tape & Paste) / (Electronic Sounder) / Other
Development Method disposable bailer

NO FREE PRODUCT
fast recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1	7.64	70.2	1640		murky/no odor
3	7.59	69.9	1580		
5	7.41	69.8	1580		
7	7.37	72.9	1610		
9	7.50	70.7	1590		
12	7.61	70.3	1560		
15	7.51	70.0	1600		

Total Gallons Removed 16 gallons
Depth to Groundwater After Development (below TOC) 8.68 feet

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI-MW-16
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DWH
Date: 8/27/96
TOC Elevation:
Weather: sunny

Depth to Casing Bottom (below TOC) 18.50 feet
Depth to Groundwater (below TOC) 7.34 feet
Feet of Water in Well 11.16 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.8 gallons
Depth Measurement Method (Tape & Paste) / (Electronic Sounder) / Other
Development Method disposable bailer

No Free Product
slow Recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
3	7.19	73.7	3020		semi-clear/no odor
6	7.40	73.3	3430		↓
9	7.61	72.3	3540		↓ Dry @ 9 gals.
12					
15					
18					

Total Gallons Removed ~~18~~ 9 gallons
Depth to Groundwater After Development (below TOC) 7.61' feet

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI-MW-17
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DWA
Date: 8/27/96
TOC Elevation:
Weather: Sunny

Depth to Casing Bottom (below TOC) 18.50 feet
Depth to Groundwater (below TOC) 5.72 feet
Feet of Water in Well 12.78 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.1 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder Other
Development Method disposable bailer

slow recharge
NO FREE PRODUCT

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
3	7.90	74.8	3360		semi-clear/no odor
6	7.78	73.4	3020		murky
9	7.67	71.5	2910		
12	7.77	70.8	2930		DRY@13 gals.

Total Gallons Removed 13 gallons
Depth to Groundwater After Development (below TOC) feet

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI-MW-18
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DWA
Date: ~~8/27/96~~ 9/3/96
TOC Elevation: _____
Weather: ~~Sunny~~ Foggy

Depth to Casing Bottom (below TOC) 18.50 feet
Depth to Groundwater (below TOC) 3.93 feet
Feet of Water in Well 14.57 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.4 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Development Method disposable bailer

No Free Product

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
3	7.24	68.6	2420		clear/slight odor
6	7.02	67.0	2360		↓
9	7.09	65.5	2450		semi-clear
12	7.13	64.1	2430		dry @ 12 gals.

Total Gallons Removed 12 gallons
Depth to Groundwater After Development (below TOC) 17.11 feet

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI-MW-19
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DWA
Date: 8/28/96
TOC Elevation:
Weather: Sunny

Depth to Casing Bottom (below TOC) 18.50 feet
Depth to Groundwater (below TOC) 4.06 feet
Feet of Water in Well 14.44 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.4 gallons
Depth Measurement Method (Tape & Paste) / (Electronic Sounder) / Other
Development Method disposable bailer
No Free Product

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
3	8.02	80.0	1840		murky/no odor
6	7.70	79.6	1760		
9	7.63	75.3	1870		
12	7.66	74.2	1980		
15	7.67	73.2	2130		Dry @ 15 gals.
18					
21					
24					

Total Gallons Removed ~~24~~ 15 gallons
Depth to Groundwater After Development (below TOC) feet

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL DEVELOPMENT FORM

Project Name: KOT
Well Number: SCI-MW-20
Job No.: 133.005
Well Casing Diameter: 2 inches
Developed By: DWA
Date: 8/28/96
TOC Elevation:
Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater (below TOC) 2.57 feet
Feet of Water in Well 15.43 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.5 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Development Method disposable bailer
No Free Product

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
5	7.91	80.1	3510		semi-clear/no odor
10	7.91	77.1	3000		murky
15	7.93	76.9	3250		dry@15gals.
20					
25					

Total Gallons Removed 15 gallons
Depth to Groundwater After Development (below TOC) feet

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: MW-6
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: 9/4/96
TOC Elevation:
Weather: Sunny
Depth to Casing Bottom (below TOC) 20.50 feet
Depth to Groundwater Before Purging (below TOC) 5.19 feet
Feet of Water in Well 15.31 feet
Depth to Groundwater When 80% Recovered 8.25 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.5 gallons
Depth Measurement Method (Tape & Paste) / (Electronic Sounder) / Other
Free Product
Purge Method disposable bailer
slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2		7.40	71.1	1480		
4		7.40	70.5	1604		
6		7.06	68.9	1718		
8		7.10	68.0	1890		

Total Gallons Purged 8 gallons
Depth to Groundwater Before Sampling (below TOC) 4.26 on 9/5/96 feet
Sampling Method disposable bailer
Containers Used 5 (40 ml) 5 (liter) (pint)

DRUM STATUS

Number of drums at the site
Date and Content
Condition

Subsurface Consultants

JOB NUMBER DATE APPROVED PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: MW-7
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: 9/4/96
TOC Elevation:
Weather: Sunny
Depth to Casing Bottom (below TOC) 20.50 feet
Depth to Groundwater Before Purging (below TOC) 4.65 feet
Feet of Water in Well 15.85 feet
Depth to Groundwater When 80% Recovered 7.82 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.6 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer
slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / (°F))	Conductivity (micromhos/cm)	Salinity S%	Comments
2		7.51	70.4	1790		clear/slight odor
4		7.11	68.7	1880		
6		7.24	67.6	1920		
8		7.20	67.2	1970		

Total Gallons Purged 8 gallons
Depth to Groundwater Before Sampling (below TOC) feet
Sampling Method disposible bailer
Containers Used 5 (40 ml) 5 (liter) (pint)

DRUM STATUS

Number of drums at the site
Date and Content
Condition

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: SCI-MW-1
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: ~~9/5/96~~ 9/5/96
TOC Elevation:
Weather: sunny
Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater Before Purging (below TOC) 5.98 feet
Feet of Water in Well 12.02 feet
Depth to Groundwater When 80% Recovered 8.38 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.0 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

slow recharge (overnight)

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
0		7.61	73.8	1710		clear/no odor
2		7.35	67.8	1720		
4		7.31	65.5	1740		
6		7.28	64.0	1820		

Total Gallons Purged 6 gallons
Depth to Groundwater Before Sampling (below TOC) 6.02' on 9/6/96 @ 0820 feet
Sampling Method disposable bailer
Containers Used 5 (40 ml) 5 (liter) (pint)

DRUM STATUS

Number of drums at the site
Date and Content
Condition

Subsurface Consultants

JOB NUMBER DATE APPROVED PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: SCI-MW-2
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: 9/4/96
TOC Elevation:
Weather:
Depth to Casing Bottom (below TOC) 18.50 feet
Depth to Groundwater Before Purging (below TOC) 6.54 feet
Feet of Water in Well 11.96 feet
Depth to Groundwater When 80% Recovered 8.93 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.0 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer
last recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C (°F))	Conductivity (micromhos/cm)	Salinity S%	Comments
0		7.76	70.9	1990		clear/strong odor w/sheen
2		7.56	69.2	1730		
4		7.57	68.5	1710		
6		7.57	68.0	1760		

Total Gallons Purged 6 gallons
Depth to Groundwater Before Sampling (below TOC) 6.68' feet
Sampling Method disposable bailer
Containers Used 5 (40 ml) 5 (liter) (pint)

DRUM STATUS

Number of drums at the site
Date and Content
Condition

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: SCI-MW-3
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: ~~9/6/96~~ 9/5/96
TOC Elevation:
Weather: sunny
Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater Before Purging (below TOC) 5.20 feet
Feet of Water in Well 12.80 feet
Depth to Groundwater When 80% Recovered 7.76 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.1 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer
moderate recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / (°F))	Conductivity (micromhos/cm)	Salinity S%	Comments
1		7.54	76.6	1550		clear/slight odor
3		7.34	76.3	1450		
5		7.07	73.3	1800		
7		7.14	72.2	2000		

Total Gallons Purged 7 gallons
Depth to Groundwater Before Sampling (below TOC) 7.71 feet
Sampling Method disposable bailer
Containers Used 8 (40 ml) 5 (liter) (pint)

DRUM STATUS

Number of drums at the site
Date and Content
Condition
Duplicate labelled XB (3 VOAs)

Subsurface Consultants

JOB NUMBER DATE APPROVED PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: SC-MW-5

Job No.: 133.005 Well Casing Diameter: 2 inches

Sampled By: DWA Date: 8/28/96

TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.50 feet

Depth to Groundwater Before Purging (below TOC) 6.01 feet

Feet of Water in Well 12.49 feet

Depth to Groundwater When 80% Recovered 8.58 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.0 gallons

Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other

Free Product none

Purge Method disposable bailer

Very slow recharge (overnight)

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / (F))	Conductivity (micromhos/cm)	Salinity S%	Comments
0		8.09	64.1	2770		clear/no odor
2		7.89	64.6	2960		
4		7.62	64.1	2980		
6		7.40	63.2	3040		

Total Gallons Purged 6 gallons

Depth to Groundwater Before Sampling (below TOC) 5.73' on 9/3/96 @ 11:45 a.m. feet

Sampling Method disposable bailer

Containers Used 5 (40 ml) 5 (liter) _____ (pint) _____

DRUM STATUS

Number of drums at the site _____

Date and Content _____

Condition _____

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: SCI-MW-6
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: 8/28/96
TOC Elevation:
Weather: sunny
Depth to Casing Bottom (below TOC) 19.50 feet
Depth to Groundwater Before Purging (below TOC) 6.00 feet
Feet of Water in Well 13.50 feet
Depth to Groundwater When 80% Recovered 8.70 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.2 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

immediate recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / (°F))	Conductivity (micromhos/cm)	Salinity S%	Comments
1		7.88	76.3	3430		murky/no odor
3		7.92	74.9	3610		slight odor w/ spotty sheen
5		8.00	72.6	3500		↓
7		7.97	72.7	3480		

Total Gallons Purged 7 gallons
Depth to Groundwater Before Sampling (below TOC) 6.00 feet
Sampling Method disposable bailer
Containers Used 5 (40 ml) 5 (liter) (pint)

DRUM STATUS

Number of drums at the site
Date and Content
Condition

Subsurface Consultants

JOB NUMBER DATE APPROVED PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: SCI-MW-7
Job No.: 133005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: ~~9/6/96~~ 9/3/96
TOC Elevation: _____
Weather: ~~Sunny~~ foggy
Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater Before Purging (below TOC) 6.68 feet
Feet of Water in Well 11.32 feet
Depth to Groundwater When 80% Recovered 8.94 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.8 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer
very slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
0		7.52	67.2	2830		clear/slight odor
2		7.08	66.6	2610		
4		6.85	65.1	2680		
6		7.01	64.8	2750		

Total Gallons Purged 6 gallons
Depth to Groundwater Before Sampling (below TOC) 9.08' on 9/6/96 @ 10:00 feet
Sampling Method disposable bailer
Containers Used 5 (40 ml) 5 (liter) _____ (pint) _____

DRUM STATUS

Number of drums at the site _____
Date and Content _____
Condition _____

Subsurface Consultants

JOB NUMBER | DATE | APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: SC1-MW-9
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: 8/28/96
TOC Elevation:
Weather: sunny
Depth to Casing Bottom (below TOC) 18.16 feet
Depth to Groundwater Before Purging (below TOC) 4.99 feet
Feet of Water in Well 13.17 feet
Depth to Groundwater When 80% Recovered 7.62 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.1 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

very slow recharge (overnight)

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1		7.86	73.4	2460		clear/no odor
3		7.57	73.6	2200		
5		7.47	70.8	2280		
7		7.41	69.2	2460		

Total Gallons Purged 7 gallons
Depth to Groundwater Before Sampling (below TOC) 5.71 on 8/29/96 feet
Sampling Method disposable bailer
Containers Used 5 (40 ml) 5 (liter) (pint)

DRUM STATUS

Number of drums at the site
Date and Content
Condition

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: SCI-MW-14

Job No.: 133.005 Well Casing Diameter: 4 inches

Sampled By: DWA Date: 8/28/96

TOC Elevation: _____ Weather: sunny

Depth to Casing Bottom (below TOC) 18.00 feet

Depth to Groundwater Before Purging (below TOC) 6.33 feet

Feet of Water in Well 11.67 feet

Depth to Groundwater When 80% Recovered 8.66 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.0 gallons

Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other

Free Product none

Purge Method disposable bailer
fast recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C (°F))	Conductivity (micromhos/cm)	Salinity S%	Comments
0		8.29	73.5	2080		clear / slight odor
2		8.13	74.3	1970		murky / spotty sheen
4		8.00	74.5	2000		↓
6		7.95	74.3	1980		↓

Total Gallons Purged 6 gallons

Depth to Groundwater Before Sampling (below TOC) 6.33 feet

Sampling Method disposable bailer

Containers Used 5 (40 ml) 5 (liter) _____ (pint) _____

DRUM STATUS

Number of drums at the site _____

Date and Content _____

Condition _____

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: SCI-MW-12
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWH
Date: 8/29/96
TOC Elevation:
Weather: Sunny
Depth to Casing Bottom (below TOC) 18.00 feet
Depth to Groundwater Before Purging (below TOC) 7.26 feet
Feet of Water in Well 10.74 feet
Depth to Groundwater When 80% Recovered 9.41 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.8 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer
fast recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / (°F))	Conductivity (micromhos/cm)	Salinity S%	Comments
0		8.16	68.9	4450		clear/no odor
2		8.05	68.6	3700		murky
4		7.94	68.5	3580		↓
6		7.84	67.6	3430		↓

Total Gallons Purged 6 gallons
Depth to Groundwater Before Sampling (below TOC) 7.30 feet
Sampling Method disposable bailer
Containers Used 5 (40 ml) 5 (liter) (pint)

DRUM STATUS

Number of drums at the site
Date and Content
Condition

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: SC1-MW-13
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: 8/29/96
TOC Elevation:
Weather: sunny
Depth to Casing Bottom (below TOC) 18.50 feet
Depth to Groundwater Before Purging (below TOC) 5.30 feet
Feet of Water in Well 13.20 feet
Depth to Groundwater When 80% Recovered 7.94 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.1 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

moderate recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C (°F))	Conductivity (micromhos/cm)	Salinity S%	Comments
1		7.88	69.6	2420		semi-clear / no odor
3		7.29	72.5	2300		
5		7.20	72.6	2250		
7		7.28	70.7	2290		

Total Gallons Purged 7 gallons
Depth to Groundwater Before Sampling (below TOC) 7.91 feet
Sampling Method disposable bailer
Containers Used 5 (40 ml) 5 (liter) (pint)

DRUM STATUS

Number of drums at the site
Date and Content
Condition

Subsurface Consultants

JOB NUMBER DATE APPROVED PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: SCI-MW-14

Job No.: 133.005 Well Casing Diameter: 2 inches

Sampled By: DWA Date: 8/29/96

TOC Elevation: _____ Weather: sunny

Depth to Casing Bottom (below TOC) 18.00 feet

Depth to Groundwater Before Purging (below TOC) 7.92 feet

Feet of Water in Well 10.08 feet

Depth to Groundwater When 80% Recovered 9.94 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.6 gallons

Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other

Free Product none

Purge Method disposable bailer

moderate recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / (°F))	Conductivity (micromhos/cm)	Salinity S%	Comments
1		8.44	72.5	1850		clear/slight odor
2		8.00	72.1	1660		
3		7.79	71.6	1610		
4		7.71	70.7	1610		
5		7.66	69.8	1650		

Total Gallons Purged 5 gallons

Depth to Groundwater Before Sampling (below TOC) 9.92 feet

Sampling Method disposable bailer

Containers Used 5 (40 ml) 5 (liter) _____ (pint) _____

DRUM STATUS

Number of drums at the site _____

Date and Content _____

Condition _____

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: SC1-MW-15

Job No.: 133.005 Well Casing Diameter: 2 inches

Sampled By: DWA Date: 8/29/96

TOC Elevation: _____ Weather: sunny

Depth to Casing Bottom (below TOC) 18.00 feet

Depth to Groundwater Before Purging (below TOC) 8.51 feet

Feet of Water in Well 9.49 feet

Depth to Groundwater When 80% Recovered 10.41 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.5 gallons

Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other

Free Product none

Purge Method disposable bailer

fast recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1		7.81	74.8	2260		murky / no odor
2		7.59	73.9	1970		
3		7.52	73.6	1880		
4		7.49	73.5	1850		
5		7.46	73.2	1810		

Total Gallons Purged 5 gallons

Depth to Groundwater Before Sampling (below TOC) 8.51 feet

Sampling Method disposable bailer

Containers Used 5 (40 ml) 5 (liter) _____ (pint) _____

DRUM STATUS

Number of drums at the site _____

Date and Content _____

Condition _____

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: SCI-MW-16
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: 8/29/96
TOC Elevation:
Weather: sunny
Depth to Casing Bottom (below TOC) 18.50 feet
Depth to Groundwater Before Purging (below TOC) 6.05 feet
Feet of Water in Well 12.45 feet
Depth to Groundwater When 80% Recovered 8.54 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.0 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

slow recharge (overnight)

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
0		7.75	76.7	3750		clear/no odor
2		7.38	76.4	3610		
4		7.33	75.1	3550		
6		7.51	73.4	3530		

Total Gallons Purged 6 gallons
Depth to Groundwater Before Sampling (below TOC) 7.23 on 8/30/96 @ 0800 feet
Sampling Method disposable bailer
Containers Used ~~6~~ 10 (40 ml) ~~6~~ 10 (liter) (pint)
Duplicates taken labelled XA

DRUM STATUS

Number of drums at the site
Date and Content
Condition

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: SCI-MW-17

Job No.: 133.005 Well Casing Diameter: 2 inches

Sampled By: DWA Date: 8/29/96

TOC Elevation: _____ Weather: sunny

Depth to Casing Bottom (below TOC) 18.50 feet

Depth to Groundwater Before Purging (below TOC) 3.00 feet

Feet of Water in Well 15.50 feet

Depth to Groundwater When 80% Recovered 6.10 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.5 gallons

Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other

Free Product none

Purge Method disposable bailer

slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / (F))	Conductivity (micromhos/cm)	Salinity S%	Comments
2		8.20	75.3	2860		clear/no odor
4		7.83	73.9	2740		↓
6		7.50	72.6	2850		↓
8		7.50	71.7	2950		semi-clear ↓

Total Gallons Purged 8 gallons

Depth to Groundwater Before Sampling (below TOC) 5.49 feet

Sampling Method disposable bailer

Containers Used 5 (40 ml) 5 (liter) _____ (pint) _____

DRUM STATUS

Number of drums at the site _____

Date and Content _____

Condition _____

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: SCI-MW-18

Job No.: 133.005 Well Casing Diameter: 2 inches

Sampled By: DWA Date: 9/5/96

TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.50 feet

Depth to Groundwater Before Purging (below TOC) 8.88 feet

Feet of Water in Well 9.62 feet

Depth to Groundwater When 80% Recovered 10.80 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.6 gallons

Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other

Free Product none

Purge Method disposable bailer

slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1		7.59	75.2	1950		clear / slight odor
2		7.28	73.2	1770		
3		7.22	72.0	1790		
4		7.34	71.1	1880		
5		7.42	70.4	1910		

Total Gallons Purged 5 gallons

Depth to Groundwater Before Sampling (below TOC) 10.92' on 9/6/96 @ 0945 feet

Sampling Method disposable bailer

Containers Used 5 (40 ml) 5 (liter) _____ (pint) _____

DRUM STATUS

Number of drums at the site _____

Date and Content _____

Condition _____

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: KOT
Well Number: SC1-MW-19
Job No.: 133.005
Well Casing Diameter: 2 inches
Sampled By: DWA
Date: 8/30/96
TOC Elevation:
Weather: sunny
Depth to Casing Bottom (below TOC) 18.50 feet
Depth to Groundwater Before Purging (below TOC) 4.08 feet
Feet of Water in Well 14.42 feet
Depth to Groundwater When 80% Recovered 6.96 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.4 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer
moderate recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2		8.11	74.8	1850		Semi-clear/faint odor
4		7.64	76.2	1710		
6		7.59	74.2	1860		
8		7.52	72.0	2000		

Total Gallons Purged 8 gallons
Depth to Groundwater Before Sampling (below TOC) 6.90 feet
Sampling Method disposable bailer
Containers Used 5 (40 ml) 5 (liter) (pint)

DRUM STATUS

Number of drums at the site
Date and Content
Condition

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: KOT Well Number: SCI-MW-20

Job No.: 133.005 Well Casing Diameter: 2 inches

Sampled By: DWA Date: 8/30/96

TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet

Depth to Groundwater Before Purging (below TOC) 2.18 feet

Feet of Water in Well 15.82 feet

Depth to Groundwater When 80% Recovered 5.34 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.6 gallons

Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other

Free Product none

Purge Method disposable bailer

slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / (°F))	Conductivity (micromhos/cm)	Salinity S%	Comments
2		8.08	83.0	2496		semi-clear / no odor
4		7.76	77.5	2250		↓
6		7.83	75.0	2170		↓
8		7.62	72.3	2130		murky

Total Gallons Purged 8 gallons

Depth to Groundwater Before Sampling (below TOC) 2.12 on 9/3/96 @ 11:000.m. feet

Sampling Method disposable bailer

Containers Used 5 (40 ml) 5 (liter) _____ (pint) _____

DRUM STATUS

Number of drums at the site _____

Date and Content _____

Condition _____

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

GROUNDWATER DEPTHS

Project Name: KOT

Job No.: ~~+33.0C.5~~

Measured by: JP 8/29/96

Well	Date	Time	Groundwater Depth (feet)	Comments
SCI-32	8/29/96	1525	5.90	TOC 1.5" A.G.S. no odor - no sheen no free product
SCI-33	8/29/96	1030	4.20	TOC 2" AGS no F.P, no odor, no sheen
SCI-35	8/29/96	1730	3.45'	TOC 1.25" AGS free product, odor detected (diesel odor) and oily globs.
SCI-36	8/30/96	0900	5.05'	TOC 3" BGS no F.P. odor,
SCI-37	8/30/96	1400	10.90'	TOC=G.S. no F.P., no odor
SCI-34	8/30/96	1530	5.25	TOC=G.S. no odor, no F.P
SCI-38	8/30/96	1445	5.55'	TOC=G.S. odor no F.P or sheen
SCI-39	8/30/96	1455	4.70'	TOC=1 B.G.S. no odor, no F.P. or sheen.

GROUNDWATER DEPTHS

Project Name: KOT

Job No.: 133.005

Measured by: DWA

Well	Date	Time	Groundwater Depth (feet)	Comments
SCI-MW-1	9/3/96	0915	5.98	
SCI-MW-2		1130	6.54	
SCI-MW-3		1005	5.20	
[redacted]-MW-4		12:20	5.37	
[redacted]-MW-5		12:25	3.98	
MW-3		12:55	4.48	
MW-4		12:45	4.65	1/4" product in lower chamber of skimmer / unmeasurable thin sing in bailer w/ floating globs
MW-5		12:30	5.44	
MW-6		13:00	5'2 1/4"	Top of Product = 5' 1 3/4" 1/2" product in skimmer/bailer
MW-7	↓	12:10	4.65	

GROUNDWATER DEPTHS

Project Name: KOT

Job No.: 133.005

Measured by: DWA (Weekly Measurement)

Well	Date	Time	Groundwater Depth (feet)	Comments
MW-1	9/9/96	11:10	5.65	
MW-2		11:00	4.00	
MW-3				
MW-4		10:30	5' 1¾"	½" product in lower chamber of skimmer ¼" product thickness in well - sampled 2 liters
MW-5		10:45	5.45	sampled 2 liters
MW-6		10:15	5' 3½"	floating globs of product - no measurable thickness sampled = liters
MW-7		12:05	4.79	
SCI-MW-1		0810	6.04	
SCI-MW-2		11:25	4.67	sampled 2 liters - a few visible globs of dk. brown product
SCI-MW-3		0930	5.28	sampled 2 liters
SCI-MW-4		11:15	4.53	
SCI-MW-5		11:55	5.56	
SCI-MW-6		11:40	5.06	sampled 2 liters
SCI-MW-7		0945	8.95	* not static ▼
SCI-MW-8		0835	5.70	
SCI-MW-9		0840	4.92	
SCI-MW-10		0850	4.61	
SCI-MW-11		0900	5.66	sampled 2 liters
SCI-MW-12		0915	6.85	
SCI-MW-13		0845	5.35	
SCI-MW-14		0925	8.28	
SCI-MW-15		0920	8.60	
SCI-MW-16		0825	3.59	
SCI-MW-17		0820	3.59	
SCI-MW-18		0855	5.59	
SCI-MW-19		0950	4.30	
SCI-MW-20		0995	2.08	

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600 FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT North Avenue Terminal
7th, 8th, 9th & 10th Avenues / Embarcadero Rd
Oakland

CLIENT
Name Port of Oakland / Michele Heffes
Address 530 Water St. Voice 272-1100
City Oakland, CA Zip 94604-2064

APPLICANT
Name Subsurface Consultants
Jeremy de Vierrier Fax 299-7970
Address 3736 Mt. Diablo Blvd, Ste Voice 299-7960
City Lafayette Zip 94549

TYPE OF PROJECT
Well Construction
Cathodic Protection ___
Water Supply ___
Monitoring X
Geotechnical Investigation
General ___
Contamination ___
Well Destruction ___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other Environcore

DRILLER'S LICENSE NO. 522125 (A&E) / 636387 (Provisional)

WELL PROJECTS
Drill Hole Diameter 8 in. (Environcore 22") Maximum Depth 20 ft. (Environcore 15)
Casing Diameter 2 in. (1" Temp) Depth
Surface Seal Depth 3 ft. (NA) Number 14 (Environcore 6)

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE July 24, 1996
ESTIMATED COMPLETION DATE September 3, 1996

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] Date 7/17/96

2/2 pd

FOR OFFICE USE

PERMIT NUMBER 96543
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 27 Jul 9
Wyman Hong

91992