

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

VOLUME I OF II

TEXT

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AUGUST 9, 1996

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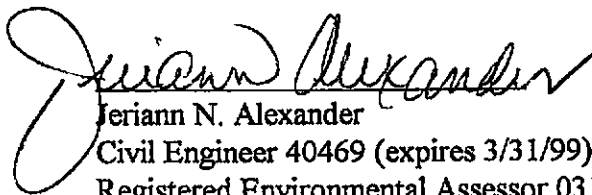
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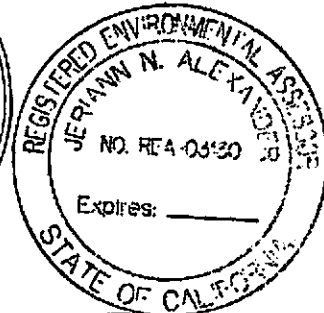
**SECOND INTERIM REPORT
SITE CHARACTERIZATION
EIGHTH AVENUE AREA
NINTH AVENUE TERMINAL
PORT OF OAKLAND, CALIFORNIA
SCI 133.005**

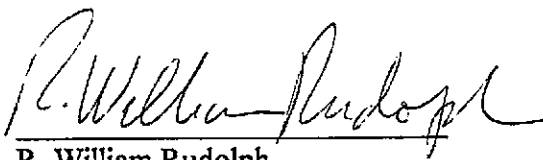
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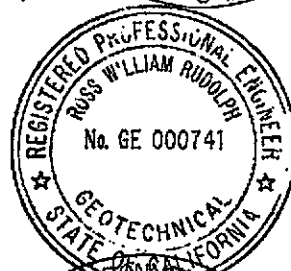
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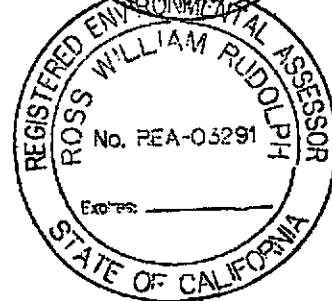

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I EXECUTIVE SUMMARY

During October and November 1992, the United States Coast Guard traced the source of an Oakland Inner Harbor hydrocarbon release to an active, aboveground diesel storage tank system at the Keep on Trucking Company, Inc. (KOT) Facility located at 370 8th Avenue, Oakland, California which is situated within the Port of Oakland's Ninth Avenue Terminal. Investigations conducted subsequent to the 1992 release at the KOT facility were limited to areas immediately adjacent to the point of release identified by the United States Coast Guard. Preliminary investigations and site research suggested there is a likely potential for preferential migration pathways for releases from the KOT spill to impact other locations at the Ninth Avenue Terminal. Site research also suggested that other sources of contamination exist within the Ninth Avenue Terminal area.

Pursuant to an August 2, 1996 written request from the Alameda County Health Care Services Agency (ACHCSA) for a work plan for further site characterization, a site characterization study was implemented. To date, two phases of investigation have been completed by Subsurface Consultants Inc. (SCI). As documented in SCI's Interim Report dated August 9, 1996, petroleum hydrocarbon impacted soils and groundwater were identified throughout the Ninth Avenue Terminal. Other potentially hazardous chemicals were also identified in localized areas. Numerous tenants operating many underground and aboveground storage tanks have also been present at the site. In addition, a myriad of underground utilities were identified in the area. Further site characterization was performed as documented in this report. These latest studies were focused on evaluating impacts to groundwater

as well as investigating areas which had not been investigated previously. New potential source areas which were identified included the following:

- A suspected solvent source release in the vicinity several former tenants including AMCO Chemical Co., C&C Metal Processing Co., Eden National Steel Corp., and Lakeside Non-Ferrous Metals and the former location of the KOT vehicle servicing facility. Operations by these former and current tenants likely included the use/and or storage of solvents.
- PCB and heavy metal concentrations in shallow soils near a metal working and recycling facility operated within a building formerly owned by Sam Kalman & Company. C&C Metal Processing Co., Eden National Steel Corp., and Lakeside Non-Ferrous Metals companies are known to have occupied the Kalman building and performed metal working and recycling activities.
- Free floating petroleum product was identified at several additional locations.

Additional investigation is necessary to better define areas of impact, as well as to complete site characterization. These studies need to be completed prior to preparing the Corrective Action Plan requested by the ACHCSA in their letter dated December 2, 1996.

II INTRODUCTION

This is the second interim report for a Site Characterization study conducted by Subsurface Consultants, Inc. (SCI) at the Keep on Trucking Company, Inc. (KOT) and other facilities located within the Ninth Avenue Terminal of the Port of Oakland (Port). The Terminal is bordered by Embarcadero Road, 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 streets at the Terminal consist of 7th through 10th Avenues, and DeFremery Avenue. Eighth Avenue, the main entrance to KOT's facility, extends through the western portion of the Ninth Avenue Terminal. The location of the Ninth Avenue Terminal is shown on the Site Vicinity Map, Plate 1, and the Site and Utility Location Plan, Plate 2.

The study described herein was performed in general accordance with a work plan prepared by SCI entitled "Work Plan Addendum for Further Site Characterization, Ninth Avenue Terminal Area" dated August 14, 1996. The work plan addendum was approved by the ACHCSA in their letter dated August 30, 1996. A primary purpose of this phase of study is to further evaluate impacts to the site, identify additional potential source areas and evaluate groundwater flow patterns as required to further understand the site conditions prior to developing the ACHCSA requested Corrective Action Plan. SCI previously prepared a report regarding our initial field investigation entitled "Interim Report, Site Characterization, Eighth Avenue Area, Ninth Avenue Terminal" dated August 9, 1996.

III SITE DESCRIPTION

The Ninth Avenue Terminal area is an irregularly-shaped parcel encompassing approximately 30 acres as shown on the Site and Utility Location Plan, Plate 2. The Terminal is generally flat with elevations ranging from approximately 9 to 14 feet above Port of Oakland datum. The entire study area is currently owned by the Port, however, the majority of the area is either 1) being leased to tenants who presently occupy the following buildings or 2) being used by tenants without a written occupancy agreement:

| | |
|---|------------|
| Keep-on-Trucking Maintenance Shop | H-107 |
| Keep-on-Trucking Offices | H-228 |
| Keep-on-Trucking Warehouse | H-229 |
| National Furniture Liquidators (M&N Trucklines) | H-232 |
| Marine Terminals Corporation | H-309 |
| Lakeside Nonferrous Metals (Sam Kalman & Co.) | H-314 |
| Harbor Forklift Service | H-318 |
| Liquid Carbonic | Unnumbered |

Concrete wharves extend along the southeast and southwest sides of the Terminal, separated from land by a concrete bulkhead (retaining wall). The majority of the Terminal not occupied by buildings is paved with asphaltic concrete. Various aboveground and underground utilities do exist throughout the area. Rail spurs extend partially along 7th Avenue and in between the structures occupied by National Furniture Liquidators (H-232) and Lakeside Nonferrous Metals (H-314). Rail spurs also extend along the south side of Tenth Avenue as shown on the Site Plan.

Storm water runoff from the majority of the Terminal is collected by numerous on-site catch basins and conveyed via below grade storm drains along 8th Avenue to the Inner Harbor and Clinton Basin. Storm water runoff from a segment of the Embarcadero is also conveyed to the 8th Avenue storm drain system. Storm water runoff from the east and southeast sides of the Terminal is collected by a series of catch basins along 9th and 10th Avenues that also drain into the Inner Harbor south of 10th Avenue. Sanitary sewer improvements consist of laterals extending from buildings to a main sewer line below 8th Avenue and another below 10th Avenue. The sanitary sewer mainlines flow toward Embarcadero Road. Other subsurface utilities in the area include, but are not necessarily limited to, the following: gas, electric, water and fire alarm.

IV FIELD INVESTIGATION

A. Purpose and Scope of Work

A primary purpose of this phase of study is to comply with ACHCSA requests to further evaluate impacts to the site resulting from the known KOT pipeline leak, as well as from other identified and as yet, uninvestigated potential sources, so that a Corrective Action Plan can be developed and implemented. The scope of services for this phase of investigation is in general accordance with the Work Plan Addendum dated August 14, 1996 and approved by the ACHCSA in a letter dated August 30, 1996. The rationale for further study is outlined herein.

The preliminary field investigation indicated that shallow groundwater throughout much of the site has been impacted by petroleum hydrocarbons and other contaminants, most notably

heavy metals and methylethylketone (MEK). Therefore, monitoring wells were installed near the perimeter and center of the site to evaluate groundwater flow patterns and the extent of dissolved and floating contaminant impacts.

Based on the results of previous studies, as well as to comply with ACHCSA requests, additional exploration was necessary in selected areas to supplement existing chemical data and to provide new data in areas not yet studied by SCI. Monitoring wells and test borings were installed and soil and groundwater samples were collected in the following areas:

- The former Port Petroleum/American Bitumuls leaseholds to further evaluate impacts due to a 1973 oil spill.
- In close proximity to the existing KOT aboveground diesel storage tank where previous analytical results suggested that there were impacts in this area from diesel releases.
- Down-gradient of the suspected locations of two underground fuel oil storage tanks situated west of Building H-232 in the proximity of KOT's current office trailer location.
- In the proximity of observed surface staining near a historic metal working and recycling facility operated within Building H-314. Sam Kalman & Company owns this building. C&C Metal Processing Co., Eden National Steel Corp., and Lakeside Non-Ferrous Metals companies are known to have occupied the Kalman building and performed metal working and recycling activities.

SCI continued its investigation of the manhole located south of the American Bitumuls/Port Petroleum leaseholds where floating product has been observed since SCI began its

investigation earlier this year. An attempt was made during this phase of the investigation to drain the manhole to evaluate the orientation of any pipes that may enter or exit it.

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

B. Site Utility Survey

Prior to this phase of the investigation, accessible subsurface utilities within new portions of the study area were located using electronic and acoustic instrumentation by California Utility Surveys (C.U. Surveys). C.U. Surveys began their utility survey by first locating all visible surface appurtenances such as catch basins, manholes, cleanouts, exposed electrical conduits, electrical utility boxes, fire hydrants, 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 surface 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 for this extended study area 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

along its length as far as possible. The alignment of the pipeline was located above ground by a radio frequency receiver. Metal pipes such as water and gas pipes and electrical conduits were similarly located by transmitting a signal either directly from aboveground appurtenances such as valves or through the ground surface directly to the utility below. Other metallic pipes were located using a magnetometer and electromagnetic induction techniques. The location of identified subsurface pipelines and conduits were marked on the ground surface with spray paint.

The horizontal and vertical locations of all visible above-ground utility appurtenances and marked utilities, except for gas pipes and electric lines, were surveyed by A-N West, Inc., a licensed land surveyor. In addition to utilities, A-N West surveyed all recently installed monitoring well and borehole locations. All elevations were referenced to two City of Oakland monuments with known elevations located within the Embarcadero right-of-way. The elevations were adjusted to Port of Oakland datum for consistency with the previous survey. The maps presented in this report are based on the A-N West survey.

C. UST Locating

In addition to locating subsurface utilities, C.U. Surveys screened two additional suspected UST areas using electro-magnetic induction techniques. Metallic anomalies which were located are shown on Plate 2.

Historical research indicated that two gasoline USTs were known to be installed in 1958 just south of Building H-229 (1-5,000 gallon tank and 1-2,000 gallon tank). Research indicates that the tanks were installed for use by the Vic Adelson Drayage company which operated within Building H-208 formally located adjacent to the south side of Building H-229. C.U. Survey's detected a metallic

anomaly approximately 10 feet wide and 22 feet long, near the south corner of Building H-229. Records discovered to date do not indicate whether or not other tenants may also have used the tanks.

Research also indicated that underground oil tanks had existed in the vicinity of the current KOT offices. These tanks may have been associated with boilers which were operated at the former cannery which occupied within Buildings H-211 and H-212. Port of Oakland site maps indicate that United Packing Corp. was operating the cannery as early as 1937. Records indicate that the Oakland Canning Co., Rexford Pre-Pakt, and Safeway Stores, Inc. also operated the cannery. Since the existing KOT offices were constructed over the top of the oil tanks, C.U. Surveys was unable to screen the area for anomalies.

While conducting utility surveys in the area, C.U. Surveys identified an irregularly shaped metallic anomaly just north of the KOT office trailer measuring about 26 feet wide and 24 feet long. Even though the ground surface in this area is composed of heavily reinforced concrete, C.U. Surveys was able to adjust their electro-magnetic induction equipment to tune out the signal reflected by the concrete reinforcement and thereby receive distinct signals from these metallic anomalies. The source of this anomaly is currently unknown.

D. Monitoring Well Installation/Analytical Testing

Monitoring wells were installed previously by others in the area of the 1992 KOT pipeline leak at former Building H-213 (MW-1 through MW-6) and in the area of the former KOT maintenance UST at Building H-107 (MW-7). SCI also previously installed three monitoring wells (SCIMW-1 through SCIMW-3) within the study area. For this phase of the investigation, SCI installed 17 additional monitoring wells (SCIMW-4 through SCIMW-20) within the study area. Twelve monitoring

wells were installed around the perimeter of the study area and two wells were installed within the central portion of the study area to investigate the extent of dissolved and floating contamination, as well as further evaluate groundwater flow direction by measuring groundwater elevations. Three additional monitoring wells were installed specifically within the former American Bitumuls/Port Petroleum leaseholds to further evaluate the impacts to soil and groundwater in this portion of the site. All monitoring 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. Underground Service Alert (USA) was contacted 2 business days before work began so they could contact their subscribers to clear all proposed boring locations for utilities. The field protocols for drilling, sampling, and well installation are presented in Appendix C and a copy of the drilling permit is included 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 4 through 20. Soils are classified in accordance with the Unified Soil Classification System described on Plate 25.

Following well installation and development, groundwater samples were collected from all SCI monitoring wells (SCIMW-1 through SCIMW-20) and existing wells MW-6 and MW-7. The samples were transported under Chain-of-Custody documents to Curtis & Tompkins, Ltd., an analytical laboratory certified by the State of California Department of Toxic Substances Control (DTSC). All samples were analyzed for petroleum hydrocarbons, volatile and semi-volatile organic compounds, heavy metals and PCBs. The analytical 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 7.

Groundwater elevations were measured in the aforementioned wells on a weekly basis for one month and then on a monthly basis for 2 months following development to determine groundwater flow direction trends over time. Initially, the wells were checked for free floating product using a steel tape coated with petroleum 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 8. Well development and groundwater measurement forms are presented in Appendix E.

E. Soil and Groundwater Sampling/Analytical Testing

Test borings have been drilled previously by others throughout the Ninth Avenue Terminal (B-1 through B-21). SCI also previously drilled 31 test borings (SCI-1 through SCI-31) throughout the study area to assess contamination at various locations. For this phase of study, subsurface conditions were explored by drilling 8 additional test borings (SCI-32 through SCI-39) at the locations shown on Plate 2. The locations were selected to provide preliminary coverage of uninvestigated areas of potential impact and to supplement existing data as required to comply with ACHCSA requests to commence evaluation of appropriate remedial response actions. Drilling and sampling protocol is described in Appendix C.

SCI's 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

Are there analytical results?

of groundwater samples and the resulting boreholes were backfilled with cement grout and finished to match the surrounding pavement. The test boring logs are presented on Plates 21 through 24. Soils are classified in accordance with the Unified Soil Classification System described on Plate 25.

Selected soil and grab groundwater samples were collected from the temporary borings. These samples were transported under Chain-of-Custody documentation to Curtis & Tompkins, Ltd. 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 7.

F. Petroleum Based Liquid Removal From Manhole/Cannery Line Investigation

In May 1996, during the utility locating phase of SCI's initial investigation, approximately 17 inches of floating diesel was observed in a manhole south of the American Bitumuls/Port Petroleum area as shown on the Site and Utility Location Plan. Historical Port maps indicate that the manhole may be connected to an abandoned concrete storm drain line referred to as the "Cannery Line" which extends along 8th Avenue and parallel to the KOT Pipeline Leak area. C.U. Surveys observed two 4-inch steel pipes entering near the top of the manhole. One pipe entered from the northeast and the other pipe entered from the southeast as shown on Plate 2. The extent or use of these lines has not been determined. C.U. Surveys also observed that the Cannery Line was blocked with bricks and concrete in the area of the KOT pipeline leak. Records are unclear as to when the line was blocked. However, references are made in several Uribe &

Associates reports to the blocking of various drain lines in an attempt to prevent further migration of diesel to the estuary immediately following the KOT 1992 release.

Dillard Environmental Services (Dillard), a certified hazardous materials transporter, was retained by the Port to remove the petroleum liquids from the manhole. On May 13, 1996, about two weeks after the diesel was discovered, more than 700 gallons of free product and water were removed. However, the level of the liquid inside the manhole remained static due to inflow from undetermined sources below the liquid surface. A Dillard employee probed and located two possible 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 and duplicated on Plate 2. The actual existence and location of the pipes could not be confirmed since the liquid level could not be drawn down enough to expose them due to the rate of liquid recharge into the manhole.

On October 16, 1996, Dillard removed an additional 8,700 gallons of free product and water from the manhole. The petroleum based liquid and water removed from the manhole, including that originally stored on site in fourteen 55 gallon drums, was pumped into two 4,800 gallon vacuum trucks. Once again, the level of the liquid inside the manhole could not be drawn down enough to expose the suspected inflow/outflow pipes even though the vacuum trucks were filling at more than 200 gallons per minute. Dillard noted that inflow could be seen in the manhole below the liquid level.

Samples of the free product and water were collected from the manhole at the following intervals: before pumping began, and after the removal of 2,000 gallons, 6,500 gallons, and 8,700

gallons. The samples were transported under Chain-of-Custody to Curtis & Tompkins, Ltd. The samples were analyzed for petroleum hydrocarbons, volatile and semi-volatile organics, and PCBs. The sample collected before pumping began was also tested for heavy metals, boiling point, and bottom sediment and water. Chain-of-Custody forms and analytical test reports are presented in Appendix F. ^{F.P.} Analytical data is presented in Tables 5 through 7. All liquids removed from the manhole were subsequently removed from the site and properly disposed of at an environmental facility in Southern California.

SCI originally planned to dig four test pits along the Cannery Line to confirm its existence. In addition, SCI planned to inspect its condition by breaking it, observing its contents, collecting sediment and/or water samples, and analyzing the samples for the contaminants of concern found at the site. Because the suspected inflow/outflow pipes could not be located and probed and because SCI was concerned that free product may still be present within the pipe, the investigation regarding the Cannery Line was suspended. Further plans to investigate, and remove debris and wastes from the storm drain lines will be considered by the Port at a later date, once it has fully evaluated the site, developed a corrective action plan and discussed mitigation measures with its' insurance carriers.

V SUBSURFACE CONDITIONS

The study area is blanketed by miscellaneous, non-homogeneous fill. The fill typically ranges from 3 feet to 7 feet thick, but measures more than 10 feet thick in localized areas toward Clinton Basin and the 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 depths drilled, which ranged from 13 feet to 18 feet bgs.

Groundwater was encountered within the monitoring wells at depths ranging typically from less than 4 feet to more than 7 feet bgs in September and October 1996. These depths correlate to groundwater elevations ranging from about 4 feet to about 7 feet above the Port of Oakland Datum. The approximate groundwater elevation contours for September 1996 are presented on Plate 3.

Generally, groundwater elevations were found to be approximately 1-1/2 to 2-1/2 feet higher near the center of the site as compared to those measured near Clinton Basin and Embarcadero Road. The groundwater elevation contours shown on Plate 3 suggest that the concrete may be acting as a barrier to significant groundwater leaching to the estuary. Groundwater is however flowing toward Clinton Basin and toward the Embarcadero where an 84 inch diameter sanitary sewer interceptor pipe is located.

VI RECENT STUDY BY R. MORRISON & ASSOCIATES FOR KEEP-ON-TRUCKING

In November 1996, KOT retained the services of R. Morrison & Associates, Inc. (RMA) to conduct additional subsurface investigation at the Ninth Avenue Terminal. As we understand, the purpose was to study areas not investigated by consultants retained by KOT and to confirm existing analytical data. RMA subcontracted Transglobal Environmental Geochemistry (TEG) to collect soil and groundwater sample from 28 locations. RMA concentrated their study in the following areas:

- Chemical Warehouse (Building H-215) (P)
- Two gasoline USTs at Building H-209 (C - next to D)
- KOT pipeline leak at Building H-213 (R)
- Suspected oil tanks west of Building H-232 (H) (KOT office) beneath
- 10,000 gallon UST northeast of Building H-227 (A)
- American Bitumuls/Port Petroleum bulk fuel processing facilities (J)
- Bay City/East Bay Oil Company bulk fuel processing facilities (N)
- Britz Chemical Company chemical warehouse and fertilizer manufacturing at Buildings H-206 and H-207 (C)

The Port retained SCI to observe the field investigation and collect selected split soil and groundwater samples for additional analytical testing. SCI observed the presence of free floating petroleum product in 15 of the 28 sampling locations. The analytical results of the RMA study have not been released to the Port by KOT, and therefore we are unable to comment further on

the study. The analytical results of the selected samples obtained by SCI have not been reviewed by the date of this report.

VII FINDINGS AND CONCLUSIONS

On a preliminary basis it appears that soil and groundwater conditions in the areas investigated by SCI to date have been impacted by petroleum hydrocarbons. In addition, other chemicals of concern including solvents have been detected in localized areas. Our conclusions regarding the significance of the investigation findings to date are as follows.

- 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. The extent of impacts have not been defined.
- Free floating petroleum product and sheen were observed in several monitoring wells and temporary well points. The sources and extent of impacts have not been fully defined.
- Groundwater samples from SCIMW-7 contain solvents. The source and extent of impacts has not been defined.
- Groundwater samples from wells along Clinton Basin contain selected heavy metals and petroleum hydrocarbons. Free floating product has not been observed in these wells to date.
- Groundwater samples from interior selectively tested temporary well points and monitoring wells also contain several heavy metals and 2-Butanone (a.k.a. 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.

possible source of F.P.

- Studies performed by RMA indicated the presence of free floating product in the area west of the current AST that KOT is operating, in the area of the former bulk fuel processing facilities operated by Port Petroleum and American Bitumuls, in the area of the former bulk fuel processing facilities operated by Bay City Fuel Company/East Bay Oil Company, and along the former rail line spur extending toward the bulk fuel processing facility.
- Given the varied use of the terminal, suspected USTs and ASTs, as well as chemical storage areas may have been situated in areas not yet investigated to date.

VIII RECOMMENDATIONS

This report should be submitted to the Alameda County Environmental Health Services. In addition, we recommend the following tasks be performed, so that among other studies and submittals, a Corrective Action Plan can be developed in accordance with the ACHCSA requests:

- The floating product within the manhole located south of the former bulk fuel processing area should be periodically checked to measure the recovery of floating diesel. *& removed as accumulated*
- Additional research and investigation should be conducted of the areas of newly discovered contamination and or potential source areas to 1) identify potentially responsible parties, 2) determine the extent of contamination and 3) determine impacts to other areas. *to continue monitoring the perimeter wells.*
- A tidal influence study should be conducted to evaluate the bulkheads response to tidal fluctuations and its apparent ability to limit groundwater migration. *- what about*
- *Sampling + analysis.*
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. *- possible containment zone. - also need KWACB for estimate C.V. levels*
- 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.
- *properly close or permit* all non-permitted USTs.

IX 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 prepared this report in a professional manner, using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. SCI shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the report was prepared. SCI also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report. SCI believes that conclusions stated herein to be factual, but no guarantee is made or implied.

This report has been prepared for the benefit of Port of Oakland and its counsel. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express written consent of SCI.

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TABLE 1
ANALYTICAL TESTING PROGRAM
NINTH AVENUE TERMINAL

| SITE REF AREA | AREA | DESIGNATION | OIL & GREASE | TVH | TEH | BTEX | PCBs | HERBICIDES/ PESTICIDES | METALS | VOCs | SEMI-VOCs | PNAs |
|---------------|-----------------------|--------------|--------------|-----|-----|------|------|------------------------|--------|------|-----------|------|
| A/K | Pacific Lumber Well/ | SCI-5@3.5 | X | X | X | X | | | | | | |
| | H-227 Yard UST | SCI-5 | X | X | X | | | | X | X | X | X |
| B/C | H-205/H-207 Area | SCI-27@3.5 | X | X | X | X | | | | | | |
| | | SCI-27 | X | X | X | | | X | X | X | X | X |
| | | SCI-30 | X | X | X | X | | | | | | |
| D | H-209 Drayage Tanks | SCI-31@4.0 | X | X | X | X | X | | | | | |
| | | SCI-31 | | X | X | | X | | | X | | |
| E | H-211/H-232 | SCI-MW-1@4.5 | X | X | X | X | | | | | | |
| | Lateral Loop | SCI-13@4.5 | X | X | X | X | | | | | | |
| | | SCI-MW-1 | X | X | X | | X | X | X | X | X | X |
| | | SCI-13 | X | X | X | X | | | | | | |
| F | KOT H-213 | SCI-22@3.5 | | X | X | X | | | | | | |
| | AST Pipe Leak | SCI-23@6.5 | | X | X | X | | | | | | |
| | | SCI-24@4.5 | | X | X | X | | | | | | |
| | | SCI-25@6.0 | | X | X | X | | | | | | |
| | | SCI-22 | X | X | X | | | | | X | | |
| | | SCI-23 | | X | X | | | X | X | | | |
| | | SCI-24 | | X | X | X | | | | | | |
| | | SCI-25 | | X | X | | | | | X | | |
| G | KOT Current H-213 AST | SCI-21 | | X | X | | | | | X | | |
| H | H-232 Oil Tanks | SCI-20@3.5 | X | | X | | X | | | | | |
| | | SCI-20@6.5 | X | | X | | | | | | | |
| | | SCI-20 | X | | X | | X | | X | X | X | X |
| I | American Bitumuls/ | SCI-MW-3@4.5 | X | | X | | X | | | X | | |
| | Port Petroleum | SCI-2@3.5 | X | | X | | | | | | | |
| | | SCI-2@6.0 | X | | X | | | | | | | |
| | | SCI-4@4.0 | X | | X | | | | | | | |
| | | SCI-MW-3 | X | | X | | X | | X | X | X | X |
| | | SCI-2 | X | | X | | X | | | X | | |
| | | SCI-4 | | | X | | X | | X | X | X | X |

TABLE I
ANALYTICAL TESTING PROGRAM
NINTH AVENUE TERMINAL

| SITE REF AREA | AREA | DESIGNATION | OIL & GREASE | TVH | TEH | BTEX | PCBs | HERBICIDES/ PESTICIDES | METALS | VOCs | SEMI-VOCs | PNAs |
|---------------|--------------------|-------------|--------------|-----|-----|------|------|------------------------|--------|------|-----------|------|
| J | Fuel Lines | SCI-1@3.0 | X | | X | | | | | | | |
| | American Bitumuls/ | SCI-1@6.0 | X | | X | | | | | | | |
| | Port Petroleum | SCI-3@6.0 | X | | X | | | | | | | |
| | | SCI-1 | | | X | | X | | | X | X | X |
| | | SCI-3 | X | | X | | X | | | X | X | X |
| | | SCI-6@3.5 | | X | X | X | | | | | | |
| | | SCI-6 | X | X | X | | | | | X | X | X |
| L | Storm Drains along | SCI-7@6.0 | | | X | X | | | | | | |
| | 8th Avenue | SCI-8@5.5 | | | X | X | | | | | | |
| | | SCI-9@5.5 | | | X | X | | | | | | |
| | | SCI-10@5.0 | | | X | X | | | | | | |
| | | SCI-16@2.5 | X | X | X | X | | | | | | |
| | | SCI-19@3.5 | X | X | X | X | | | | | | |
| | | SCI-26@3.5 | X | X | X | X | | | | | | |
| | | SCI-28@3.5 | | | X | X | | | | | | |
| | | SCI-29@5.5 | X | | X | X | | | | | | |
| | | SCI-7 | | | X | X | | | | | | |
| | | SCI-8 | | | X | X | | | | | | |
| | | SCI-9 | | | X | X | | | | | | |
| | | SCI-10 | | | X | X | | | | | | |
| | | SCI-16 | X | X | X | | | | X | X | | |
| | | SCI-19 | X | X | X | | X | | X | X | X | X |
| | | SCI-26 | | | X | | | | | X | | |
| | | SCI-28 | | X | | X | | | | | | |
| | | SCI-29 | X | X | X | X | | | | | | |

TABLE 1
ANALYTICAL TESTING PROGRAM
NINTH AVENUE TERMINAL

| SITE REF AREA | AREA | DESIGNATION | OIL & GREASE | TVH | TEH | BTEX | PCBs | HERBICIDES/ PESTICIDES | METALS | VOCs | SEMI-VOCs | PNAs |
|---------------|--------------------|--------------|--------------|-----|-----|------|------|------------------------|--------|------|-----------|------|
| M | Storm Drains near | SCI-14@3.5 | X | X | X | | | | | | | |
| | H-107 | SCI-14@6.0 | X | X | X | | | | | | | |
| | | SCI-15@3.0 | X | X | X | | | | | | | |
| | | SCI-17@3.5 | X | X | X | | | | | | | |
| | | SCI-18@3.5 | X | X | X | | | | | | | |
| | | SCI-14 | X | X | X | | | | X | X | X | X |
| | | SCI-15 | X | X | X | | | | X | X | X | X |
| | | SCI-17 | X | X | X | | X | | X | X | X | X |
| | | SCI-18 | X | X | X | X | | | | | | |
| N | Bay Cities/ | SCI-MW-2@4.5 | X | | X | X | | | | | | |
| | East Bay Oil Co. | SCI-12@6.5 | | X | X | X | | | | | | |
| | | SCI-MW-2 | X | | X | X | | | X | | X | X |
| | | SCI-12 | | X | X | | | | | X | | |
| O | H-203 Truck Repair | SCI-11@3.5 | | | X | X | | | | | | |
| | | SCI-11 | X | | X | X | | | X | | X | X |

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

| SAMPLE DESIGNATION | CONSULTANT | DESCRIPTION | SITE REF AREA | AREA | DATE SAMPLED | FLASH POINT (deg. C) | 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) | PCBs (mg/kg) | ACETONE (mg/kg) | OTHER 8240s (mg/kg) | FLUORENE (mg/kg) | 2-METHYL-NAPHTHALENE (mg/kg) | PHENANTHRENE (mg/kg) | OTHER 8270s (mg/kg) |
|--------------------|------------|---------------------------|---------------|--------------------|--------------|----------------------|----------------------|--------------------|-----------------------|--------------------------|--------------|-----------------|-----------------------|-----------------|-----------------------|--------------|-----------------|---------------------|------------------|------------------------------|----------------------|---------------------|
| 96-203-1 | Uribe | Excav NW of Clinton Basin | M | Storm Drains | 11/9/92 | -- | -- | -- | 1,400 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 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 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 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 | -- | -- | -- | -- |
| 1217-1-5.0 | Uribe | Boring B-8 | L | Storm Drains | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-1-10.0 | Uribe | Boring B-8 | L | Storm Drains | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-1-16.0 | Uribe | Boring B-8 | L | Storm Drains | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-2-5.5 | Uribe | Boring B-9 | L | Storm Drains | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-2-10.5 | Uribe | Boring B-9 | L | Storm Drains | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-2-16.0 | Uribe | Boring B-9 | L | Storm Drains | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-3-5.0 | Uribe | Boring B-10 | L | Storm Drains | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-3-10.0 | Uribe | Boring B-10 | L | Storm Drains | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

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

PAH = Polynuclear Aromatic Hydrocarbons
 <50 = Compound not detected at or above reporting limit
 -- = Not tested
 y = Sample exhibits fuel pattern which does not resemble standard
 l = Lighter hydrocarbons than indicated standard

h = Heavier hydrocarbons than indicated standard
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 † = Results not reported due to lab error in sample preparation
 * = Possibly contaminated due to laboratory extraction compound

TABLE 2
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|--------------------|------------|-------------|---------------|-------------------------|--------------|----------------------|----------------------|--------------------|-----------------------|--------------------------|--------------|-----------------|-----------------------|-----------------|-----------------------|--------------|-----------------|---------------------|------------------|------------------------------|----------------------|---------------------|
| 1217-3-15.5 | Uribe | Boring B-10 | L | Storm Drains | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-4-4.0 | Uribe | Boring B-11 | F | H-213 KOT AST Pipe Leak | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-4-5.5 | Uribe | Boring B-11 | F | H-213 KOT AST Pipe Leak | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-4-7.5 | Uribe | Boring B-11 | F | H-213 KOT AST Pipe Leak | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-5-4.5 | Uribe | Boring B-12 | F | H-213 KOT AST Pipe Leak | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-5-6.0 | Uribe | Boring B-12 | F | H-213 KOT AST Pipe Leak | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-5-8.0 | Uribe | Boring B-12 | F | H-213 KOT AST Pipe Leak | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 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 | -- | -- | -- | -- | -- | -- | -- |
| 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 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

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|--------------------|------------|-----------------------|---------------|---------------------------------|--------------|----------------------|----------------------|--------------------|-----------------------|--------------------------|--------------|-----------------|-----------------------|-----------------|-----------------------|--------------|-----------------|---------------------|------------------|------------------------------|----------------------|---------------------|
| 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 | -- | -- | -- | -- | -- | -- | -- |
| 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-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-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-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-X1-1 | Uribe | Excavation at surface | F | KOT H-213 Dispenser Pipe Excav. | 2/12/93 | -- | -- | -- | 36,000 | -- | -- | 2.00 | 4.40 | 12.0 | 19.2 | -- | -- | -- | -- | -- | -- | -- |
| 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 | -- | -- | -- | -- | -- | -- | -- |

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 PCBs = Polychlorinated Biphenyls

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 y = Sample exhibits fuel pattern which does not resemble standard
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TABLE 2
 PETROLEUM HYDROCARBON, BTEX, PCB, VOC, AND PAH CONCENTRATIONS IN SOIL
 EIGHTH AVENUE STUDY AREA

| SAMPLE DESIGNATION | CONSULTANT | DESCRIPTION | SITE REF AREA | AREA | DATE SAMPLED | FLASH POINT (deg. C) | 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) | PCBs (mg/kg) | ACETONE (mg/kg) | OTHER 8240s (mg/kg) | FLUORENE (mg/kg) | 2-METHYL-NAPHTHALENE (mg/kg) | PHENANTHRENE (mg/kg) | OTHER 8270s (mg/kg) |
|--------------------|------------|------------------------|---------------|---------------------------------|--------------|----------------------|----------------------|--------------------|-----------------------|--------------------------|--------------|-----------------|-----------------------|-----------------|-----------------------|--------------|-----------------|---------------------|------------------|------------------------------|----------------------|---------------------|
| 9AV-X1-2 | Uribe | Excavation at 1-1.5 | F | KOT H-213 Dispenser Pipe Excav. | 2/12/93 | -- | -- | -- | 3,800 | -- | -- | 0.780 | 1.60 | 5.70 | 14.7 | -- | -- | -- | -- | -- | -- | -- |
| 9AV-X1-2 | Uribe | Trench 1 at 5.0 | L | Storm Drains | 3/2/93 | -- | -- | -- | 890h | -- | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| 9AV-X1-3 | Uribe | Excavation at 0.5 | F | KOT H-213 Dispenser 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 Dispenser Pipe Excav. | 2/12/93 | -- | -- | -- | 130,000 | -- | -- | 9.80 | 30.0 | 81.0 | 129 | -- | -- | -- | -- | -- | -- | -- |
| 9AV-X1-5 | Uribe | Excavation at 3.0 | F | KOT H-213 Dispenser Pipe Excav. | 2/12/93 | -- | -- | -- | 48,000 | -- | -- | 1.80 | 4.40 | 14.0 | 20.0 | -- | -- | -- | -- | -- | -- | -- |
| 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 | -- | -- | -- | -- | -- | -- | -- |
| 1217-DRUMS | Uribe | Corner Sump Solids | F | H-213 KOT AST Pipe Leak | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1217-SLUDGE | Uribe | Catch Basin Sludge | F | H-213 KOT AST Pipe Leak | 12/17/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SP-1 | ERM-West | stockpile | M | KOT H-107 UST Excav. | 10/12/94 | >100 | -- | 590 | -- | -- | 6,700 | <0.005 | 4.60 | <0.005 | 8.60 | -- | <10 | ND | 2.00 | 6.90 | 2.90 | ND |
| 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 | -- | -- | -- | -- | -- | -- | -- |

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| SAMPLE DESIGNATION | CONSULTANT | DESCRIPTION | SITE REF AREA | AREA | DATE SAMPLED | FLASH POINT (deg. C) | 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) | PCBs (mg/kg) | ACETONE (mg/kg) | OTHER 8240s (mg/kg) | FLUORENE (mg/kg) | 2-METHYL-NAPHTHALENE (mg/kg) | PHENANTHRENE (mg/kg) | OTHER 8270s (mg/kg) |
|--------------------|------------|-------------|---------------|---------------------------------|--------------|----------------------|----------------------|--------------------|-----------------------|--------------------------|--------------|-----------------|-----------------------|-----------------|-----------------------|--------------|-----------------|---------------------|------------------|------------------------------|----------------------|---------------------|
| 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 | -- | -- | -- | -- | -- | -- | -- |
| 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 | -- | -- | -- | -- | -- | -- | -- |
| SCI-MW-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 | -- | -- | -- | -- | -- | -- | -- |
| SCI-MW-2@4.5 | SCI | Soil boring | N | Bay Cities/ East Bay Oil Co. | 5/14/96 | -- | 680 | 19y | 40yh | 160yh | -- | <0.005 | <0.005 | <0.005 | 0.860 | -- | -- | -- | -- | -- | -- | -- |
| SCI-MW-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 | ND | 0.028* | ND | -- | -- | -- | -- |
| SCI-1@3.0 | SCI | Enviro-Core | J | Amer Bitumuls/ Port Petroleum | 5/21/96 | -- | 5,900 | -- | 720yh | 2,300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-1@6.0 | SCI | Enviro-Core | J | Amer Bitumuls/ Port Petroleum | 5/21/96 | -- | 17,000 | -- | 5,500yh | 17,000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-2@3.5 | SCI | Enviro-Core | I | Amer Bitumuls/ Port Petroleum | 5/21/96 | -- | 4,000 | -- | 170yh | 5,400yh | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-2@6.0 | SCI | Enviro-Core | I | Amer Bitumuls/ Port Petroleum | 5/21/96 | -- | 6,000 | -- | 45yh | 750h | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-3@6.0 | SCI | Enviro-Core | J | Amer Bitumuls/ Port Petroleum | 5/21/96 | -- | 570 | -- | 1,300yh | 4,900lh | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-4@4.0 | SCI | Enviro-Core | I | Amer Bitumuls/ Port Petroleum | 5/21/96 | -- | 84 | -- | 7.4yh | 37y | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-5@3.5 | SCI | Enviro-Core | 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 | Enviro-Core | 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 | Enviro-Core | L | Storm Drains | 5/22/96 | -- | -- | -- | 15yh | 100yh | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| SCI-8@5.5 | SCI | Enviro-Core | L | Storm Drains | 5/22/96 | -- | -- | -- | 7.4yh | 120yh | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| SCI-9@5.5 | SCI | Enviro-Core | L | Storm Drains | 5/22/96 | -- | -- | -- | <1 | <5 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| SCI-10@5.0 | SCI | Enviro-Core | L | Storm Drains | 5/22/96 | -- | -- | -- | 28yh | 370yh | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| SCI-11@3.5 | SCI | Enviro-Core | O | H-203 Truck Repair | 5/22/96 | -- | -- | -- | <1 | <5 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |

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|--------------------|------------|-------------|---------------|---------------------------------|--------------|----------------------|----------------------|--------------------|-----------------------|--------------------------|--------------|-----------------|-----------------------|-----------------|-----------------------|--------------|-----------------|---------------------|------------------|------------------------------|----------------------|---------------------|
| SCI-12@6.5 | SCI | Enviro-Core | N | Bay Cities/ East Bay Oil Co. | 5/22/96 | -- | -- | 800 | 330yh | 940yh | -- | 12.0 | 13.0 | 34.0 | 48.1 | -- | -- | -- | -- | -- | -- | -- |
| SCI-13@4.5 | SCI | Enviro-Core | 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 | Enviro-Core | M | Storm Drains | 5/23/96 | -- | 920 | <1 | 3,800h | 10,000yh | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-14@6.0 | SCI | Enviro-Core | M | Storm Drains | 5/23/96 | -- | 3,100 | <1 | 32yh | 510yh | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-15@3.0 | SCI | Enviro-Core | M | Storm Drains | 5/23/96 | -- | 400 | <1 | 10yh | 540yh | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-16@2.5 | SCI | Enviro-Core | L | Storm Drains | 5/23/96 | -- | 570 | <1 | 40yh | 1,700yh | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| SCI-17@3.5 | SCI | Enviro-Core | M | Outfall East of H-107 | 5/24/96 | -- | 72 | <1 | 610yhz | 3,900yh | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-18@3.5 | SCI | Enviro-Core | M | Storm Drains | 5/24/96 | -- | 1,400 | <1 | 780yh | 37,000yh | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-19@3.5 | SCI | Enviro-Core | L | Storm Drains | 5/24/96 | -- | <50 | <1 | 5,600 | <200 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| SCI-20@3.5 | SCI | Enviro-Core | H | H-232 Oil Tanks | 5/24/96 | -- | <50 | -- | <1 | <5 | -- | -- | -- | -- | -- | ND | -- | -- | -- | -- | -- | -- |
| SCI-20@6.5 | SCI | Enviro-Core | H | H-232 Oil Tanks | 5/24/96 | -- | 52 | -- | 240yh | 210yh | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SCI-22@3.5 | SCI | Enviro-Core | 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 | Enviro-Core | 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 | Enviro-Core | 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 | Enviro-Core | F | H-213 KOT AST Pipe Leak | 5/31/96 | -- | -- | 24yh | 2,400 | <150 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| SCI-26@3.5 | SCI | Enviro-Core | L | Storm Drains | 5/31/96 | -- | 120 | <1 | 1,300 | 84yhl | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| SCI-27@3.5 | SCI | Enviro-Core | B/C | H-205/H-207 Area | 6/3/96 | -- | 480 | † | 1,900yh | 4,600y | -- | † | † | † | † | -- | -- | -- | -- | -- | -- | -- |
| SCI-28@3.5 | SCI | Enviro-Core | L | Storm Drains | 6/3/96 | -- | -- | -- | 3.1yh | 22yh | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| SCI-29@5.5 | SCI | Enviro-Core | L | Storm Drains | 6/3/96 | -- | 52 | -- | 10yh | 78yh | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- | -- | -- | -- | -- | -- | -- |
| SCI-31@4.0 | SCI | Enviro-Core | D | H-209 Drayage Tanks | 6/3/96 | -- | 2,800 | <1 | 2,500yh | 3,100y | -- | <0.005 | <0.005 | <0.005 | <0.005 | ND | -- | -- | -- | -- | -- | -- |

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|--------------------|------------|-------------|---------------|--------------------|--------------|-----------------|----------------|-----------------|------------------------|--------------|-----------------|------------------|----------------|
| 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-B10-10 | Uribe | Boring B-7 | L | Storm Drains | 11/19/92 | 3.8 | 22 | 0.4 | 36 | 12 | <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 |

TABLE 4
 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 | SALINITY (pss) | O&G (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) | HERB./PEST. (ug/L) |
|--------------------------------|------------|--------------------|---------------|---------------------------|--------------|----------------|------------|-------------------|----------------------|-------------------------|----------------|----------------------|----------------|----------------------|----------------------|-------------------|-----------------|-----------------|--------------------|
| 9AV-UST-2 | Uribe | Free Product/UST | F | H-213 KOT AST Pipe Leak | 2/12/93 | <1 | -- | -- | 1,000,000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 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 ₂ O 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 | -- | -- | -- |
| 9AV-W-1 | Uribe | Grab (Soil Boring) | L | Storm Drains | 3/3/93 | -- | -- | -- | 2,200 | -- | 1.2 | 1.1 | 2.8 | 4.9 | -- | -- | -- | -- | -- |
| 9AV-W-2 | Uribe | Grab (Soil Boring) | L | Storm Drains | 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 (Soil Boring) | O | H-203 Truck Repair | 11/20/92 | -- | -- | -- | <1,000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B3-W1 | Uribe | Grab (Soil Boring) | L | Storm Drains | 11/20/92 | -- | -- | -- | <500 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B5-W1 | Uribe | Grab (Soil Boring) | L | Storm Drains | 11/20/92 | -- | -- | -- | <100 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B5-W2 | Uribe | Grab (Soil Boring) | L | Storm Drains | 11/21/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B10-W1 | Uribe | Grab (Boring B-7) | L | Storm Drains | 11/21/92 | -- | -- | -- | <800 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B10-W2 | Uribe | Grab (Boring B-7) | L | Storm Drains | 11/20/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B13-W1 | Uribe | Grab (Soil Boring) | L | Storm Drains | 3/3/93 | -- | -- | -- | 2,000,000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B13-W2 | Uribe | Grab (Soil Boring) | L | Storm Drains | 3/1/93 | -- | -- | -- | -- | -- | 300 | <200 | 400 | 400 | -- | -- | -- | -- | -- |
| 9AV-B14-W1 | Uribe | Grab (Soil Boring) | L | Storm Drains | 3/1/93 | -- | -- | -- | 940 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B14-W2 | Uribe | Grab (Soil Boring) | L | Storm Drains | 3/1/93 | -- | -- | -- | -- | -- | <0.4 | <0.3 | 0.4 | <0.4 | -- | -- | -- | -- | -- |
| 9AV-B15-W1 | Uribe | Grab (Soil Boring) | F | KOT H-213 AST Pipe Leak | 3/1/93 | -- | -- | -- | 2,900 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B15-W2 | Uribe | Grab (Soil Boring) | F | KOT H-213 AST Pipe Leak | 3/1/93 | -- | -- | -- | -- | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| 9AV-B16-W1 | Uribe | Grab (Soil Boring) | F | KOT H-213 AST Pipe Leak | 3/2/93 | -- | -- | -- | 310,000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B16-W2 | Uribe | Grab (Soil Boring) | F | KOT H-213 AST Pipe Leak | 3/2/93 | -- | -- | -- | -- | -- | <40 | <30 | <30 | <40 | -- | -- | -- | -- | -- |
| 9AV-B17-W1 | Uribe | Grab (Soil Boring) | F | KOT H-213 AST Pipe Leak | 3/2/93 | -- | -- | -- | 59,000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B17-W2 | Uribe | Grab (Soil Boring) | F | KOT H-213 AST Pipe Leak | 3/2/93 | -- | -- | -- | -- | -- | 2 | <2 | <2 | <2 | -- | -- | -- | -- | -- |
| 9AV-B18-W1 | Uribe | Grab (Soil Boring) | E | H-211/232 Lateral Loop | 3/2/93 | -- | -- | -- | 590h | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B18-W2 | Uribe | Grab (Soil Boring) | E | H-211/232 Lateral Loop | 3/2/93 | -- | -- | -- | -- | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |

G = Oil and Grease
 H = Total Volatile Hydrocarbons
 TEH = Total Extractable Hydrocarbons
 PCBs = Polychlorinated Biphenyls

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

-- = Not tested
 J = estimated value
 ND = Not detected
 <5 = Compound not detected at or above stated reporting limit

† = Could not be quantified - Laboratory indicated 98.80% petroleum characterized as diesel

TABLE 4
 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 | SALINITY (pss) | O&G (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) | HERB./PEST. (ug/L) |
|--------------------|------------|------------------|---------------|-------------------------|--------------|----------------|------------|-------------------|----------------------|-------------------------|----------------|----------------------|----------------|----------------------|----------------------|-------------------|-----------------|-----------------|--------------------|
| SCI-25 | SCI | Temp. Well Point | F | KOT H-213 AST Pipe Leak | 5/31/96 | -- | -- | 2,700yh | 210,000 | 6,200y1 | 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 | <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 | 6/4/96 | -- | <5 | <50 | 2,000yhz | 1,600 | <0.5 | <0.5 | <0.5 | 13.7 | -- | -- | -- | -- | -- |
| SCI-30 | SCI | Temp. Well Point | B/C | H-205/H-207 | 6/3/96 | -- | <5 | <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 | -- | -- | -- |
| MW-1 | Uribe | 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 | Well | F | KOT H-213 AST Pipe Leak | 10/3/94 | -- | -- | -- | 390y | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-1 | Clayton | Well | F | KOT H-213 AST Pipe Leak | 4/10/95 | -- | -- | <50 | 330 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-1 | Clayton | Well | F | KOT H-213 AST Pipe Leak | 7/24/95 | -- | -- | <50 | 230 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-1 | Clayton | Well | F | KOT H-213 AST Pipe Leak | 11/10/95 | -- | -- | <50 | 430 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-1 | SCI | Well | F | KOT H-213 AST Pipe Leak | 2/20/96 | -- | -- | <50 | 590 | -- | <0.5 | <0.5 | <0.5 | <1 | -- | -- | -- | -- | -- |
| MW-1 | SCI | Well | F | KOT H-213 AST Pipe Leak | 5/24/96 | -- | -- | <50 | 870yh | 630y | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | -- | -- |
| MW-2 | Uribe | 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 | Well | F | KOT H-213 AST Pipe Leak | 10/5/94 | -- | -- | -- | 1,200y | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-2 | Clayton | Well | F | KOT H-213 AST Pipe Leak | 4/10/95 | -- | -- | <50 | 550 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-2 | Clayton | Well | F | KOT H-213 AST Pipe Leak | 7/24/95 | -- | -- | 70 | 960 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-2 | Clayton | Well | F | KOT H-213 AST Pipe Leak | 11/10/95 | -- | -- | <50 | 920 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-2 | SCI | Well | F | KOT H-213 AST Pipe Leak | 2/20/96 | -- | -- | <50 | 1,700 | -- | <0.5 | <0.5 | <0.5 | <1 | -- | -- | -- | -- | -- |
| MW-2 | SCI | 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-3 | Uribe | 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 | Well | F | KOT H-213 AST Pipe Leak | 10/4/94 | -- | -- | -- | 480y | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-3 | Clayton | Well | F | KOT H-213 AST Pipe Leak | 4/10/95 | -- | -- | <50 | 830 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-3 | Clayton | Well | F | KOT H-213 AST Pipe Leak | 7/24/95 | -- | -- | <50 | 460 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-3 | Clayton | Well | F | KOT H-213 AST Pipe Leak | 11/10/95 | -- | -- | <50 | 2,100 | -- | <0.4 | <0.3 | 0.7 | <0.4 | -- | -- | -- | -- | -- |
| MW-3 | SCI | Well | F | KOT H-213 AST Pipe Leak | 2/20/96 | -- | -- | <50 | 620 | -- | <0.5 | <0.5 | <0.5 | <1 | -- | -- | -- | -- | -- |
| MW-3 | SCI | 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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 PCBs = Polychlorinated Biphenyls

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| SAMPLE DESIGNATION | CONSULTANT | DESCRIPTION | SITE REF AREA | AREA | DATE SAMPLED | SALINITY (pss) | O&G (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) | HERB./PEST. (ug/L) |
|--------------------|------------|----------------------|---------------|-----------------------------|--------------|----------------|------------|-------------------|----------------------|-------------------------|----------------|----------------------|----------------|----------------------|----------------------|-------------------|-----------------|-----------------|--------------------|
| MW-4 | Uribe | Well | F | KOT H-213 AST Pipe Leak | 4/4/94 | -- | -- | 6,200 | 410,000 | -- | 140 | 47 | 20 | 310 | -- | -- | -- | -- | -- |
| MW-4 | Clayton | Well | F | KOT H-213 AST Pipe Leak | 7/24/95 | -- | -- | 2,400 | 21,000 | -- | 140 | 34 | 74 | 40 | -- | -- | -- | -- | -- |
| MW-4 | SCI | Well | F | KOT H-213 AST Pipe Leak | 2/20/96 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-4 | SCI | Well | F | KOT H-213 AST Pipe Leak | 5/24/96 | -- | -- | 690y | 37,000 | 2,800yl | 44 | 18 | <2.5 | 7.7 | -- | -- | -- | -- | -- |
| MW-5 | Clayton | 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 | 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 | Well | F | KOT H-213 AST Pipe Leak | 11/10/95 | -- | -- | 260 | 3,700 | -- | 0.8 | 0.6 | 0.5 | 1.9 | -- | -- | -- | -- | -- |
| MW-5 | SCI | Well | F | KOT H-213 AST Pipe Leak | 2/20/96 | -- | -- | 150 | 440 | -- | 0.5 | <0.5 | <0.5 | <1 | -- | -- | -- | -- | -- |
| MW-5 | SCI | 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-6 | Clayton | 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 | Well | F | KOT H-213 AST Pipe Leak | 2/20/96 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-6 | SCI | Well | F | KOT H-213 AST Pipe Leak | 5/24/96 | -- | -- | 280,000yh | 240,000 | 5,500yl | <250 | <250 | <250 | <250 | -- | -- | -- | -- | -- |
| MW-7 | Clayton | Well | M | KOT H-107 UST Excav. | 4/10/95 | -- | -- | <50 | 370 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-7 | Clayton | Well | M | KOT H-107 UST Excav. | 7/24/95 | -- | -- | <50 | 260 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-7 | Clayton | Well | M | KOT H-107 UST Excav. | 11/10/95 | -- | -- | <50 | 270 | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |
| MW-7 | SCI | Well | M | KOT H-107 UST | 2/20/96 | -- | -- | <50 | 6,100 | -- | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | -- | -- |
| MW-7 | SCI | Well | M | KOT H-107 UST | 5/24/96 | -- | -- | <50 | 750yh | 750y | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | -- | -- |
| SCI-MW-1 | SCI | Well | E | H-211/H-232 Lateral Loop | 5/24/96 | -- | <5 | <50 | 560yh | 280y | <5.0 | <5.0 | <5.0 | <5.0 | <0.5 | ND | <0.09 | <0.09 | ND |
| SCI-MW-2 | SCI | Well | N | Bay Cities/East Bay Oil Co. | 5/23/96 | -- | 5.6 | -- | 2,600l | 360yl | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | -- | -- |
| SCI-MW-3 | SCI | Well | I | Amer. Bitum./Port Petrol. | 5/23/96 | -- | <5 | -- | 8,000yh | 7,400y | <5.0 | <5.0 | <5.0 | <5.0 | <1.0 | ND | -- | -- | -- |
| 9AV-B0-W1 | Uribe | Fld. Blnk. | | Unknown | 11/20/92 | -- | -- | -- | <50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TRIP BLANK | Uribe | Fld. Blnk. | | Unknown | 11/20/92 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B00-W1 | Uribe | Fld. Blnk./tap water | | Unknown | 3/3/93 | -- | -- | -- | <50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 9AV-B00-W2 | Uribe | Fld. Blnk./tap water | | Unknown | 3/3/93 | -- | -- | -- | -- | -- | <0.4 | <0.3 | <0.3 | <0.4 | -- | -- | -- | -- | -- |

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 TVH = Total Volatile Hydrocarbons
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y = Sample exhibits fuel pattern which does not resemble standard
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-- = Not tested
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† = Could not be quantified - Laboratory indicated 98.80% petroleum characterized as diesel

TABLE 5
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) | BERYLLIUM (ug/L) | CADMIUM (ug/L) | TOTAL CHROMIUM (ug/L) | COBALT (ug/L) | COPPER (ug/L) | LEAD (ug/L) | MERCURY (ug/L) | MOLYBDENUM (ug/L) | NICKEL (ug/L) | SELENIUM (ug/L) | SILVER (ug/L) | THALLIUM (ug/L) | VANADIUM (ug/L) | ZINC (ug/L) |
|--------------------------------|------------|------------------------------------|---------------|------------------------------|--------------|-----------------|----------------|---------------|------------------|----------------|-----------------------|---------------|---------------|-------------|----------------|-------------------|---------------|-----------------|---------------|-----------------|-----------------|-------------|
| Manhole-H ₂ O 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 | <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 |
| 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 | <10 | <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 |
| 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 |

TABLE 5
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) | BARIIUM (ug/L) | BERYLLIUM (ug/L) | CADMIUM (ug/L) | TOTAL CHROMIUM (ug/L) | COBALT (ug/L) | COPPER (ug/L) | LEAD (ug/L) | MERCURY (ug/L) | MOLYBDENUM (ug/L) | NICKEL (ug/L) | SELENIUM (ug/L) | SILVER (ug/L) | THALLIUM (ug/L) | VANADIUM (ug/L) | ZINC (ug/L) |
|--------------------|------------|------------------------------------|---------------|-------------------------------|--------------|-----------------|----------------|----------------|------------------|----------------|-----------------------|---------------|---------------|-------------|----------------|-------------------|---------------|-----------------|---------------|-----------------|-----------------|-------------|
| 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-MW-1 | SCI | 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 |
| SCI-MW-1 | SCI | 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 |
| SCI-MW-2 | SCI | Well (Total Conc.) | N | Bay Cities/ 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 |
| SCI-MW-2 | SCI | Well (Dissolved Conc.) | N | Bay Cities/ 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 |
| SCI-MW-3 | SCI | 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 |
| SCI-MW-3 | SCI | 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 |



 = Compound not detected at or above stated reporting limit
 Not tested
 * = Results presented for comparison purposes only - units reported in mg/kg

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-DICHLOROETHANE (ug/L) | cis-1,2-DICHLOROETHENE (ug/L) | 1,1,1-TRICHLOROETHANE (ug/L) | TRICHLOROETHENE (ug/L) | OTHER 8240s | 1,4-DICHLOROBENZENE (ug/L) | PENTA-CHLORO-PHENOL (ug/L) | BENZO(a)-PYRENE (ug/L) | FLUORENE (ug/L) | NAPHTHALENE (ug/L) | 2-METHYLNAPHTHALENE (ug/L) | PHENANTHRENE (ug/L) | OTHER 8270s |
|--------------------|------------|-------------------------|---------------|--------------------------------|--------------|--------------------------|---------------------------|-------------------------------|------------------------------|------------------------|-------------|----------------------------|----------------------------|------------------------|-----------------|--------------------|----------------------------|---------------------|-------------|
| 9AV-B5-W2 | Uribe | Grab (Soil Boring) | 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 | -- | -- | -- | -- | -- | -- | -- |
| M-3 | Uribe | Manhole | L | Storm Drains | 11/17/92 | <10mg/kg | <10mg/kg | <10mg/kg | <10mg/kg | <10mg/kg | ND | -- | -- | -- | -- | -- | -- | -- | -- |
| Manhole-H2O Layer | SCI | Oil-Filled Manhole | J | Amer. Bitum./ Port Petrol. | 5/13/96 | <50 | 45 | 520 | 13J | 28 | ND | <2,400 | <12,000 | <2,400 | <2,400 | <2,400 | <2,400 | <2,400 | ND |
| Manhole-Oil Layer | SCI | Oil-Filled Manhole | J | Amer. Bitum./ Port Petrol. | 5/13/96 | <20,000u | <10,000u | <10,000u | <10,000u | <10,000u | ND | <2,000m | <10,000m | <2,000u | <2,000u | <2,000m | 2,200m | <2,000u | ND |
| SCI-1 | SCI | Temp. Well Point | J | Amer. Bitum./ Port Petrol. | 5/21/96 | <10 | 8 | <5.0 | <5.0 | <5.0 | ND | <9.4 | <47 | <9.4 | <9.4 | <9.4 | <9.4 | <9.4 | ND |
| SCI-2 | SCI | Temp. Well Point | I | Amer. Bitum./ Port Petrol. | 5/22/96 | 38 | <13 | <13 | <13 | <13 | 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 | 36J | <240 | <47 | <47 | <47 | <47 | <47 | 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 | <10 | 70 | <10 | <10 | <10 | <10 | <10 | ND |
| SCI-5 | SCI | Temp. Well Point | A/K | Pac. Lmbr. Well/H-227 Yard UST | 5/22/96 | 210 | <25 | <25 | <25 | <25 | ND | <9.4 | <47 | <9.4 | <9.4 | <9.4 | <9.4 | <9.4 | ND |
| SCI-6 | SCI | Temp. Well Point | J | Amer. Bitum./ Port Petrol. | 5/22/96 | <100 | <50 | <50 | <50 | <50 | ND | <47 | <240 | <47 | 37J | <47 | 110 | 45J | ND |
| SCI-11 | SCI | Temp. Well Point | O | H-203 Truck Repair | 5/23/96 | -- | -- | -- | -- | -- | -- | <9.4 | <47 | <9.4 | <9.4 | <9.4 | <9.4 | <9.4 | ND |
| SCI-12 | SCI | Temp. Well Point | N | Bay Cities/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 | <53 | <11 | <11 | <11 | <11 | <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 | <54 | <11 | <11 | <11 | <11 | <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 | <47 | <9.4 | <9.4 | <9.4 | <9.4 | <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 | <47 | <9.4 | <9.4 | <9.4 | <9.4 | <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 | <47 | <9.4 | <9.4 | <9.4 | <9.4 | <9.4 | ND |
| 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 | -- | -- | -- | -- | -- | -- | -- | -- |

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-DICHLOROETHANE (ug/L) | cis-1,2-DICHLOROETHENE (ug/L) | 1,1,1-TRICHLOROETHANE (ug/L) | TRICHLOROETHENE (ug/L) | OTHER 8240s | 1,4-DICHLOROBENZENE (ug/L) | PENTA-CHLORO-PHENOL (ug/L) | BENZO(a)-PYRENE (ug/L) | FLUORENE (ug/L) | NAPHTHALENE (ug/L) | 2-METHYLNAPHTHALENE (ug/L) | PHENANTHRENE (ug/L) | OTHER 8270s |
|--------------------|------------|------------------|---------------|-----------------------------|--------------|--------------------------|---------------------------|-------------------------------|------------------------------|------------------------|-------------|----------------------------|----------------------------|------------------------|-----------------|--------------------|----------------------------|---------------------|-------------|
| 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 | <9.4 | <47 | 5.3J | <9.4 | <9.4 | <9.4 | <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-MW-1 | SCI | Well | E | H-211/H-232 Lateral Loop | 5/24/96 | <10 | <5.0 | <5.0 | <5.0 | <5.0 | ND | <9.4 | <47 | <9.4 | <9.4 | <9.4 | <9.4 | <9.4 | ND |
| SCI-MW-2 | SCI | Well | N | Bay Cities/East Bay Oil Co. | 5/23/96 | -- | -- | -- | -- | -- | -- | <9.4 | <47 | <9.4 | <9.4 | <9.4 | <9.4 | <9.4 | ND |
| SCI-MW-3 | SCI | Well | I | Amer. Bitum./Port Petrol. | 5/23/96 | <10 | <5.0 | <5.0 | <5.0 | <5.0 | ND | <9.4 | <47 | <9.4 | <9.4 | <9.4 | <9.4 | <9.4 | ND |
| MW-6(FP) | SCI | Free Product | F | H-213 KOT AST Pipe Leak | 5/24/96 | <50,000 | <25,000 | <25,000 | <25,000 | <25,000 | ND | <40 | <200 | <40 | <40 | 49 | 260 | 90 | ND |
| TRIP BLANK | Uribe | Field Blank | | Unknown | 11/20/92 | <20 | <5 | <5 | <5 | <5 | ND | -- | -- | -- | -- | -- | -- | -- | -- |

MEK = Methyl ethyl ketone

<25 = Compound not detected at or above stated reporting limit

-- = Not tested

ND = Not detected

J = Estimated value

u = Units reported in ug/kg

h = Units reported in mg/kg

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
EIGHTH AVENUE STUDY AREA

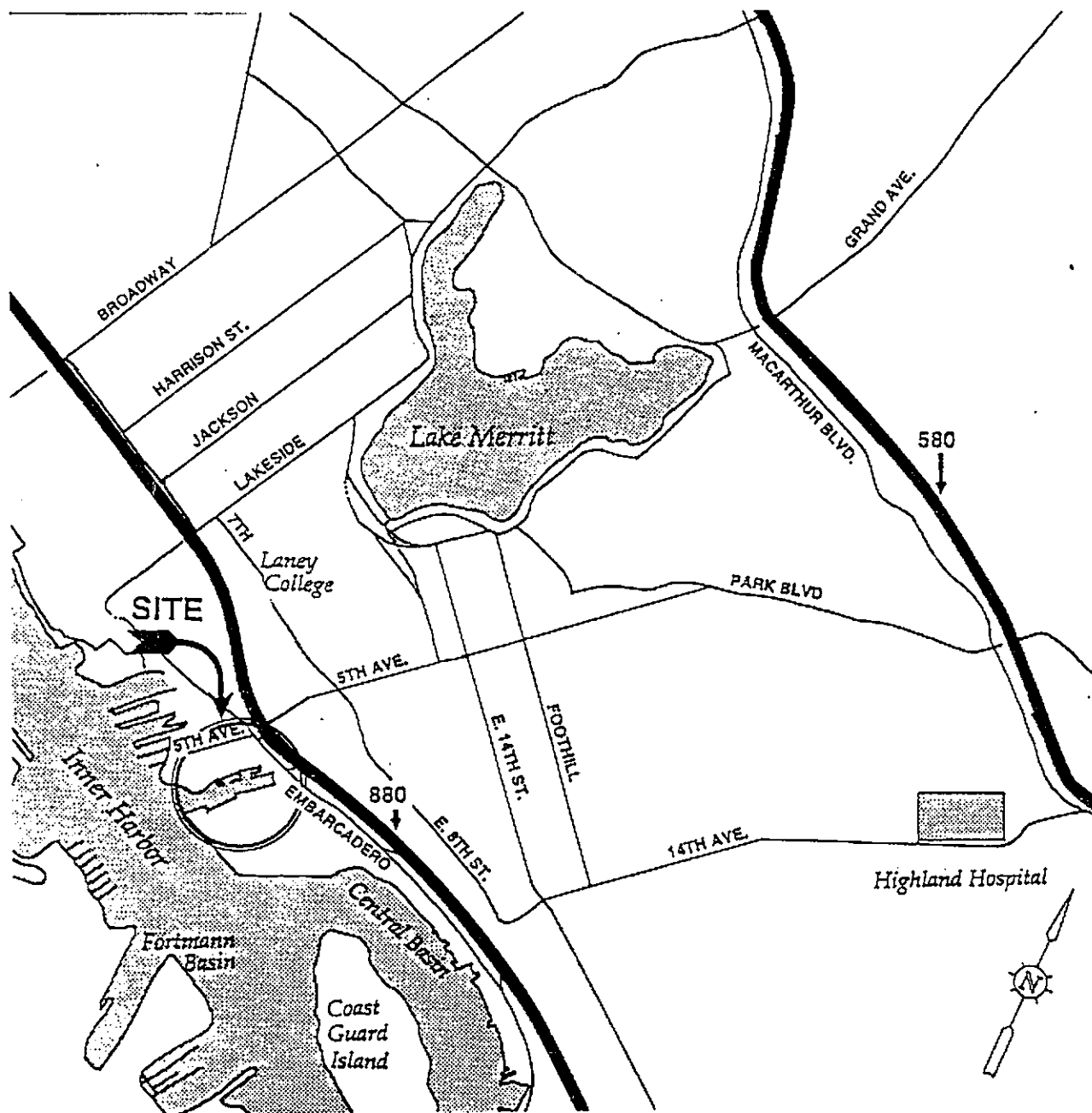
| MONITORING WELL | DATE | TOP OF CASING ELEVATION | GROUNDWATER DEPTH (feet) | GROUNDWATER ELEVATION* (feet) |
|-----------------|----------|-------------------------|--------------------------|-------------------------------|
| MW-1 | 9/20/93 | 9.99 | 5.20 | 4.79 |
| MW-1 | 12/1/93 | 9.99 | 5.15 | 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-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-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 |
| 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-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 |

* = Port of Oakland Datum
GWELVATN.TBL

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
EIGHTH AVENUE STUDY AREA

| MONITORING WELL | DATE | TOP OF CASING ELEVATION | GROUNDWATER DEPTH (feet) | GROUNDWATER ELEVATION* (feet) |
|-----------------|----------|-------------------------|--------------------------|-------------------------------|
| 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-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-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-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 |
| | | | | |
| 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-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-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 |

* = Port of Oakland Datum
GWELVATN.TBL



SITE VICINITY MAP

Subsurface Consultants

8TH AVENUE STUDY AREA—OAKLAND, CA
 JOB NUMBER 133.005 DATE 6/21/96 APPROVED *SP*

PLATE

1

| SCI-27 | | |
|------------------|---------|-------|
| Arsenic | 4,300 | <5.0 |
| Barium | 37,000 | 190 |
| Beryllium | 65 | 2.3 |
| Cadmium | 990 | 130 |
| (total) Chromium | 3,600 | <10 |
| Cobalt | 1,000 | 130 |
| Copper | 100,000 | 180 |
| Lead | 140,000 | 13 |
| Mercury | 350 | 0.23 |
| Molybdenum | 29 | 32 |
| Nickel | 2,900 | 67 |
| Selenium | 110 | 19 |
| Vandium | 3,100 | <10 |
| Zinc | 250,000 | 2,000 |

| SCI-19 | | |
|------------------|--------|--|
| Arsenic | 690 | |
| Barium | 17,000 | |
| Beryllium | 80 | |
| Cadmium | 130 | |
| (total) Chromium | 1,400 | |
| Cobalt | 1,000 | |
| Copper | 2,100 | |
| Lead | 2,500 | |
| Mercury | 13 | |
| Molybdenum | 34 | |
| Nickel | 2,000 | |
| Selenium | 200 | |
| Thallium | 22 | |
| Vandium | 3,200 | |
| Zinc | 17,000 | |

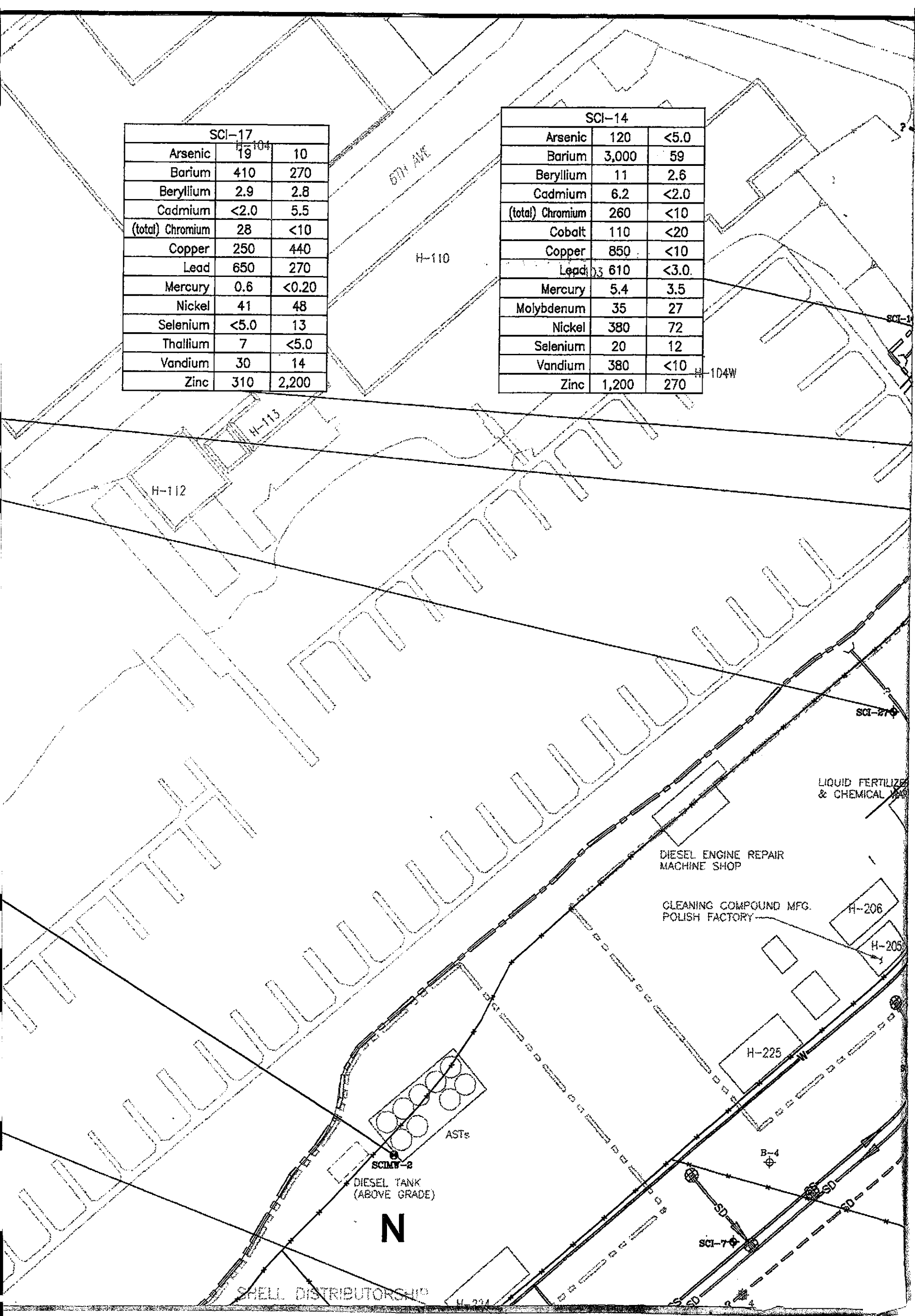
| SCI-MW-2 | | |
|------------------|-------|-------|
| Arsenic | 14 | 11 |
| Barium | 90 | 490 |
| (total) Chromium | 12 | <10 |
| Copper | <10 | 69 |
| Lead | 2,300 | 62 |
| Mercury | 0.64 | <0.20 |
| Selenium | 14 | 22 |
| Zinc | 38 | 110 |

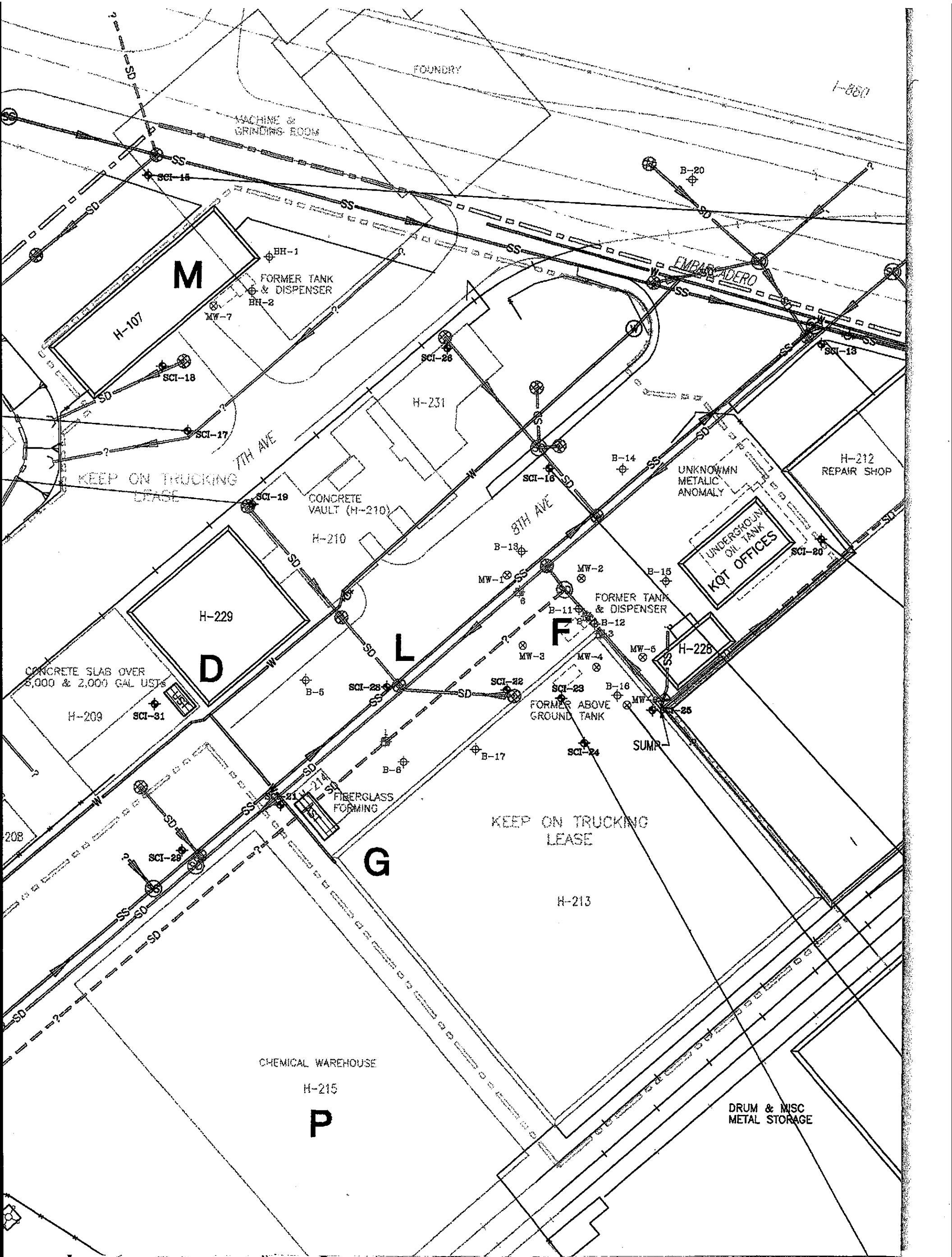
| SCI-5 | | |
|------------------|------|------|
| Arsenic | 15 | <5.0 |
| Barium | 270 | 240 |
| (total) Chromium | 12 | <10 |
| Lead | 11 | <3.0 |
| Mercury | 0.59 | 2.8 |
| Nickel | 24 | 32 |
| Selenium | 8.5 | 6.9 |
| Vandium | 12 | <10 |
| Zinc | 49 | 80 |

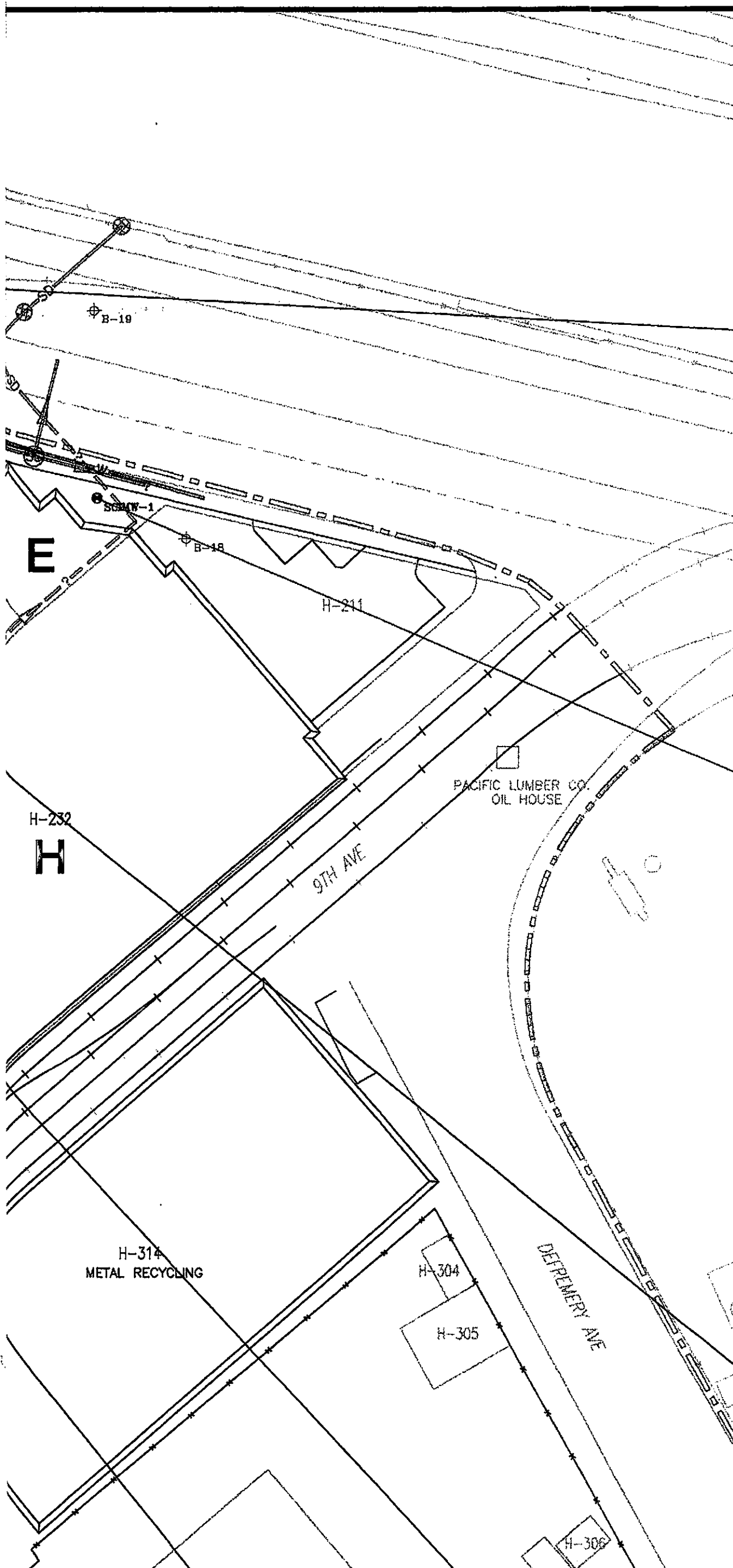
| SCI-11 | | |
|-----------|-------|------|
| Arsenic | 120 | <5.0 |
| Barium | 4,000 | 290 |
| Beryllium | 18 | 2.8 |
| Cadmium | 11 | 3.4 |

| SCI-17 | | |
|------------------|------|-------|
| Arsenic | 19 | 10 |
| Barium | 410 | 270 |
| Beryllium | 2.9 | 2.8 |
| Cadmium | <2.0 | 5.5 |
| (total) Chromium | 28 | <10 |
| Copper | 250 | 440 |
| Lead | 650 | 270 |
| Mercury | 0.6 | <0.20 |
| Nickel | 41 | 48 |
| Selenium | <5.0 | 13 |
| Thallium | 7 | <5.0 |
| Vandium | 30 | 14 |
| Zinc | 310 | 2,200 |

| SCI-14 | | |
|------------------|-------|------|
| Arsenic | 120 | <5.0 |
| Barium | 3,000 | 59 |
| Beryllium | 11 | 2.6 |
| Cadmium | 6.2 | <2.0 |
| (total) Chromium | 260 | <10 |
| Cobalt | 110 | <20 |
| Copper | 850 | <10 |
| Lead | 610 | <3.0 |
| Mercury | 5.4 | 3.5 |
| Molybdenum | 35 | 27 |
| Nickel | 380 | 72 |
| Selenium | 20 | 12 |
| Vandium | 380 | <10 |
| Zinc | 1,200 | 270 |







| SCI-15 | | |
|------------------|-------|------|
| Arsenic | 110 | <5.0 |
| Barium | 2,200 | 93 |
| Beryllium | 11 | 2.0 |
| Cadmium | 8.7 | <2.0 |
| (total) Chromium | 570 | <10 |
| Cobalt | 150 | <20 |
| Copper | 430 | 12 |
| Lead | 1,400 | <3.0 |
| Mercury | 8.2 | 0.32 |
| Nickel | 630 | <20 |
| Selenium | 25 | 12 |
| Vandium | 550 | <10 |
| Zinc | 2,200 | 50 |

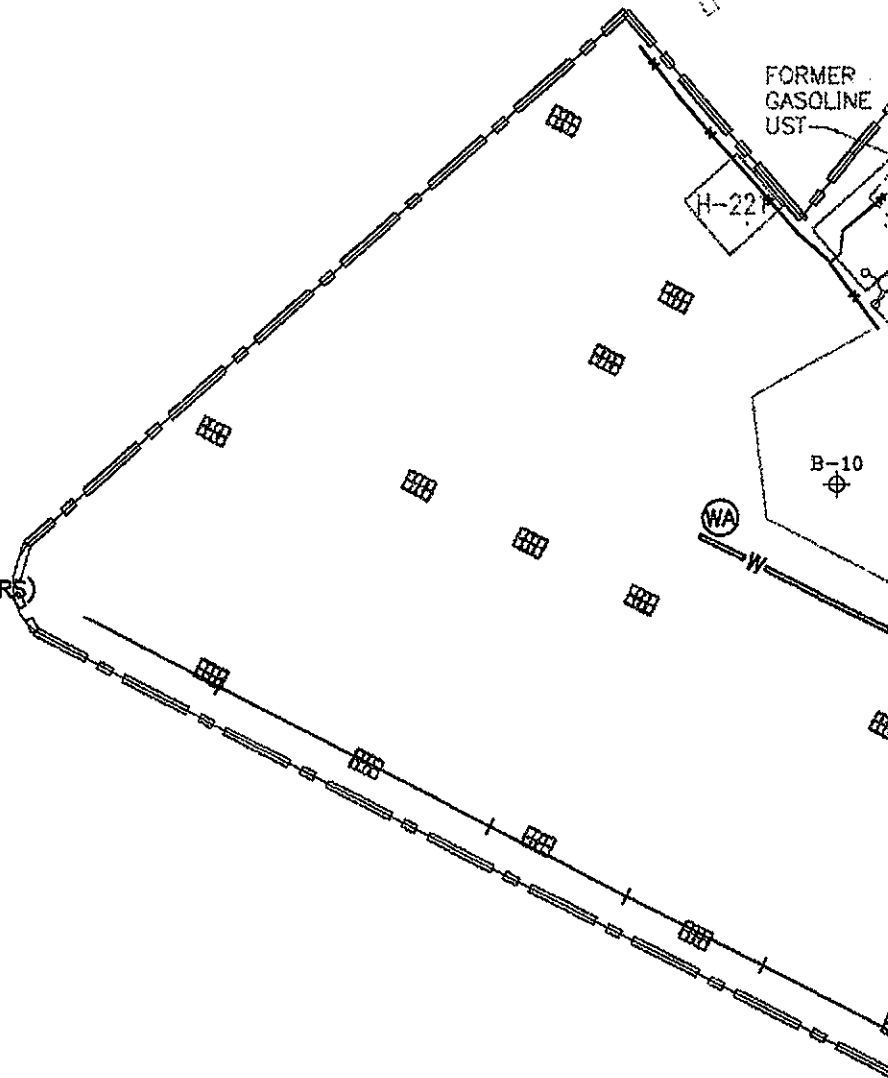
| SCI-MW-1 | | |
|------------------|-------|------|
| Arsenic | 45 | <5.0 |
| Barium | 1,000 | 170 |
| Beryllium | 2.8 | 2.0 |
| Cadmium | 2.3 | <2.0 |
| (total) Chromium | 63 | <10 |
| Copper | 1,800 | <10 |
| Lead | 2,300 | <3.0 |
| Nickel | 68 | <20 |
| Selenium | 7.8 | 8.3 |
| Vandium | 62 | <10 |
| Zinc | 1,000 | <20 |

| SCI-20 | | |
|------------------|-------|-------|
| Arsenic | 350 | 6.1 |
| Barium | 4,400 | 650 |
| Beryllium | 27 | 2.2 |
| Cadmium | 29 | <2.0 |
| (total) Chromium | 1,800 | <10 |
| Cobalt | 760 | <20 |
| Copper | 1,100 | <10 |
| Lead | 1,100 | <3.0 |
| Mercury | 6.5 | <0.20 |
| Molybdenum | 25 | <20 |
| Nickel | 3,000 | 37 |
| Selenium | 99 | 18 |
| Vandium | 1,400 | <10 |
| Zinc | 5300 | 26 |

| | | |
|----------|-------|------|
| Copper | 1,400 | 73 |
| Lead | 1,100 | 4.0 |
| Mercury | 15 | 0.25 |
| Nickel | 1,200 | 180 |
| Selenium | 41 | 23 |
| Vandium | 800 | 11 |
| Zinc | 2,100 | 320 |

LEGEND:

- ◆ SOIL BORING LOCATION (SCI)
- ⊕ SOIL BORING LOCATION (BY OTHERS)
- MONITORING WELL LOCATION (SCI)
- ⊗ MONITORING WELL LOCATION (BY OTHERS)
- ⊕ TRENCH LOCATION (BY OTHERS)
- F— FUEL LINE
- W— WATER LINE
- SS— SANITARY SEWER
- SD— STORM DRAIN
- ? — UNKNOWN DRAINAGE
-) — OUTFALL
- >— FLOW DIRECTION
- ▢ DRAIN GRATE
- ⊕ CATCH BASIN
- ⊙(W) ⊙(SS) ⊙(SD) MANHOLE
- ⊙(WA) WHARF ACCESS MANHOLE
- ⊙(FH) FIRE HYDRANT
- x—x—x— FENCE LINE
- +—+—+— RAILROAD
- ⊙ OVERHEAD LIGHT STANDARD
- APPROXIMATE LEASE BOUNDARY
- STUDY AREA BOUNDARY
- ○ FORMER ABOVE OR UNDERGROUND STORAGE TANK
- ▨ ○ EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- A** SITE REFERENCE AREA



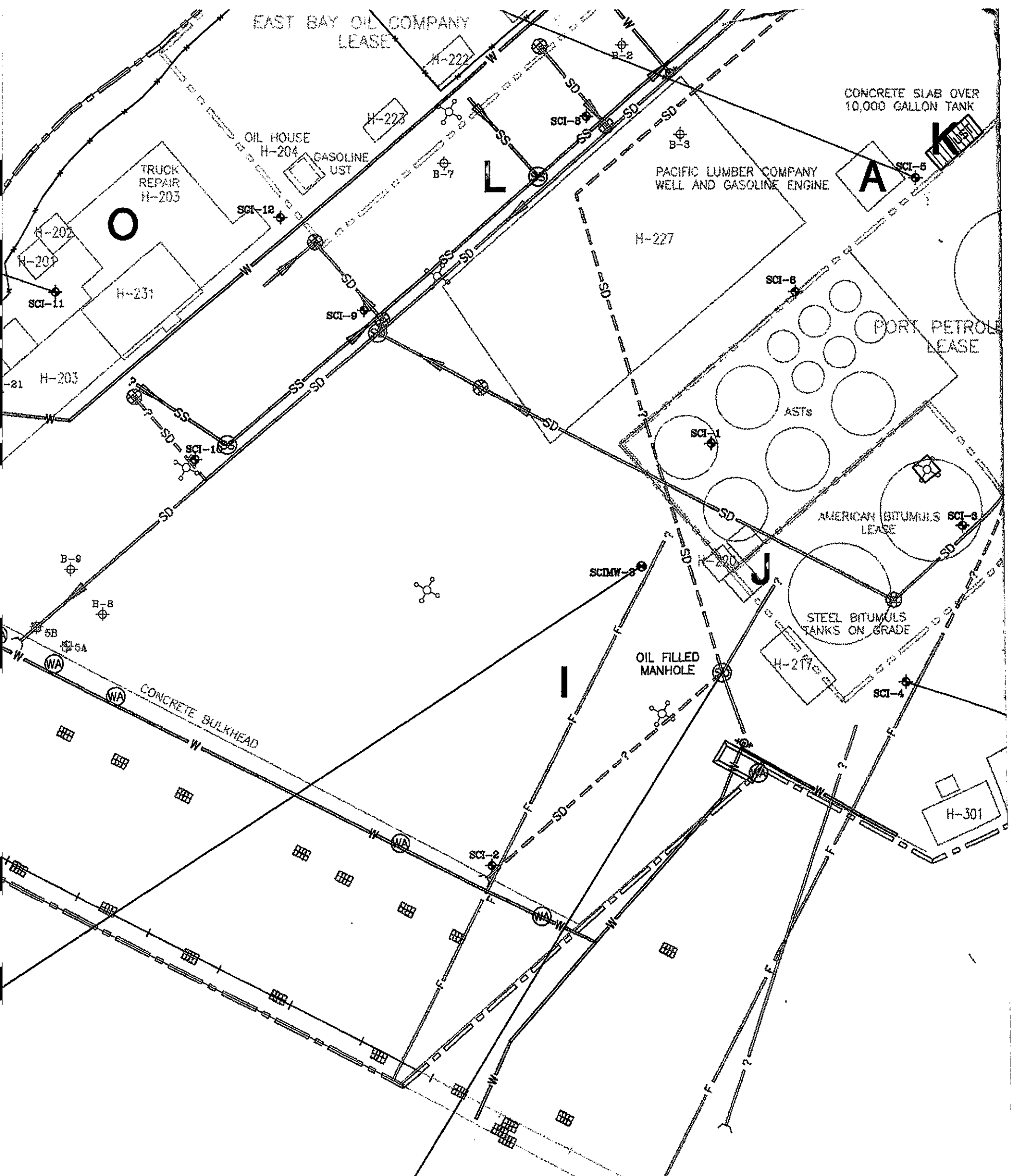
| SCI-MW-3 | | |
|----------|------|-----|
| Barium | <10 | 42 |
| Cobalt | 58 | <20 |
| Selenium | <5.0 | 8.2 |

| DESIGNATION | | |
|-------------|-------|-----------|
| COMPOUND | TOTAL | DISSOLVED |

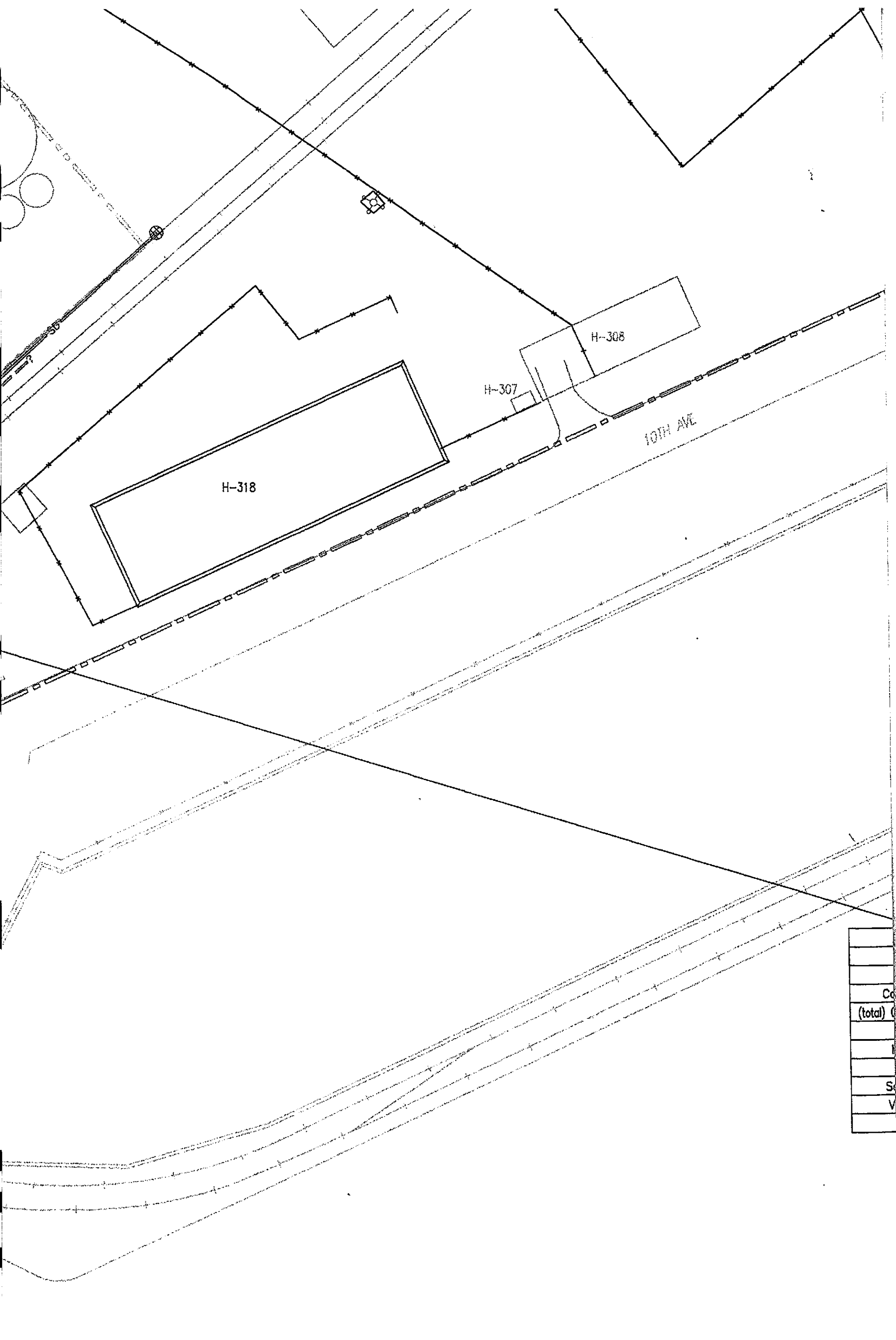
NOTES:

1. UTILITY SURVEY WAS PREPARED BY AN WEST 5-22-96
2. ALL CONCENTRATIONS IN $\mu\text{g/L}$ EXCEPT WHERE NOTED
3. SAMPLES WITH ONLY ONE CONCENTRATION VALUE ARE TOTAL CONCENTRATIONS

REFERENCE DRAWINGS



| Water Layer | | Oil Layer | |
|-------------|-----|------------------|-------------|
| Arsenic | 8.8 | Arsenic | 860ug/Kg |
| Barium | 210 | Barium | 31,000ug/Kg |
| Cadmium | 3.1 | Cadmium | 620ug/Kg |
| Copper | 43 | (total) Chromium | 1,500ug/Kg |
| Lead | 38 | Copper | 3,900ug/Kg |
| Nickel | 63 | Lead | 35,000ug/Kg |
| Selenium | 7.5 | Nickel | 5,000ug/Kg |
| Zinc | 97 | Selenium | 520ug/Kg |
| | | Vandium | 3,700ug/Kg |
| | | Zinc | 9,200ug/Kg |



| |
|-----------|
| |
| |
| |
| Co |
| (total) 0 |
| |
| |
| S |
| V |
| |

SCALE

DESIGNED BY _____
 DRAWN BY RDP/DJP
 CHECKED BY _____



3736 Mt. Diablo Blvd. Ste 2
 Lafayette, CA 945
 (510) 299-79

H-303

TRANSFORMER

| SCI-16 | | |
|------------------|-------|------|
| Arsenic | 130 | 5.1 |
| Barium | 1,700 | 310 |
| Beryllium | 17 | <2.0 |
| Cadmium | 11 | <2.0 |
| (total) Chromium | 990 | <10 |
| Cobalt | 250 | <20 |
| Copper | 390 | <10 |
| Lead | 230 | <3.0 |
| Mercury | 3.6 | <2.0 |
| Molybdenum | <20 | 30 |
| Nickel | 1,100 | <20 |
| Selenium | 31 | 18 |
| Vandium | 780 | 26 |
| Zinc | 1,100 | <20 |

1950 GAS PIPES NOT SHOWN

H-309

| MW-6(FP) | | |
|----------|------|------|
| Barium | 170 | 320 |
| Lead | 3.3 | <3.0 |
| Mercury | 0.28 | 0.43 |
| Selenium | 14 | 13 |
| Zinc | 34 | <20 |

H-932

| SCI-4 | |
|-------|------|
| 33 | <5.0 |
| 230 | 32 |
| 2.2 | <2.0 |
| 62 | <10 |
| 20 | <3.0 |
| <0.20 | 1.3 |
| 60 | <20 |
| 16 | 8.9 |
| 53 | <10 |
| 58 | <20 |

| SCI-23 | | |
|------------------|-------|-------|
| Arsenic | 210 | 6.7 |
| Barium | 4,400 | 440 |
| Beryllium | 22 | 2.2 |
| Cadmium | 23 | <2.0 |
| (total) Chromium | 1,400 | <10 |
| Cobalt | 470 | <20 |
| Copper | 910 | <10 |
| Lead | 570 | <3.0 |
| Mercury | 2.9 | <0.20 |
| Nickel | 1,600 | <20 |
| Selenium | 46 | 22 |
| Vandium | 1,100 | <10 |
| Zinc | 1,900 | <20 |

PORT OF OAKLAND
530 WATER STREET OAKLAND, CALIFORNIA

SCALE
AS SHOWN
PROJECT NO.
13.3.005

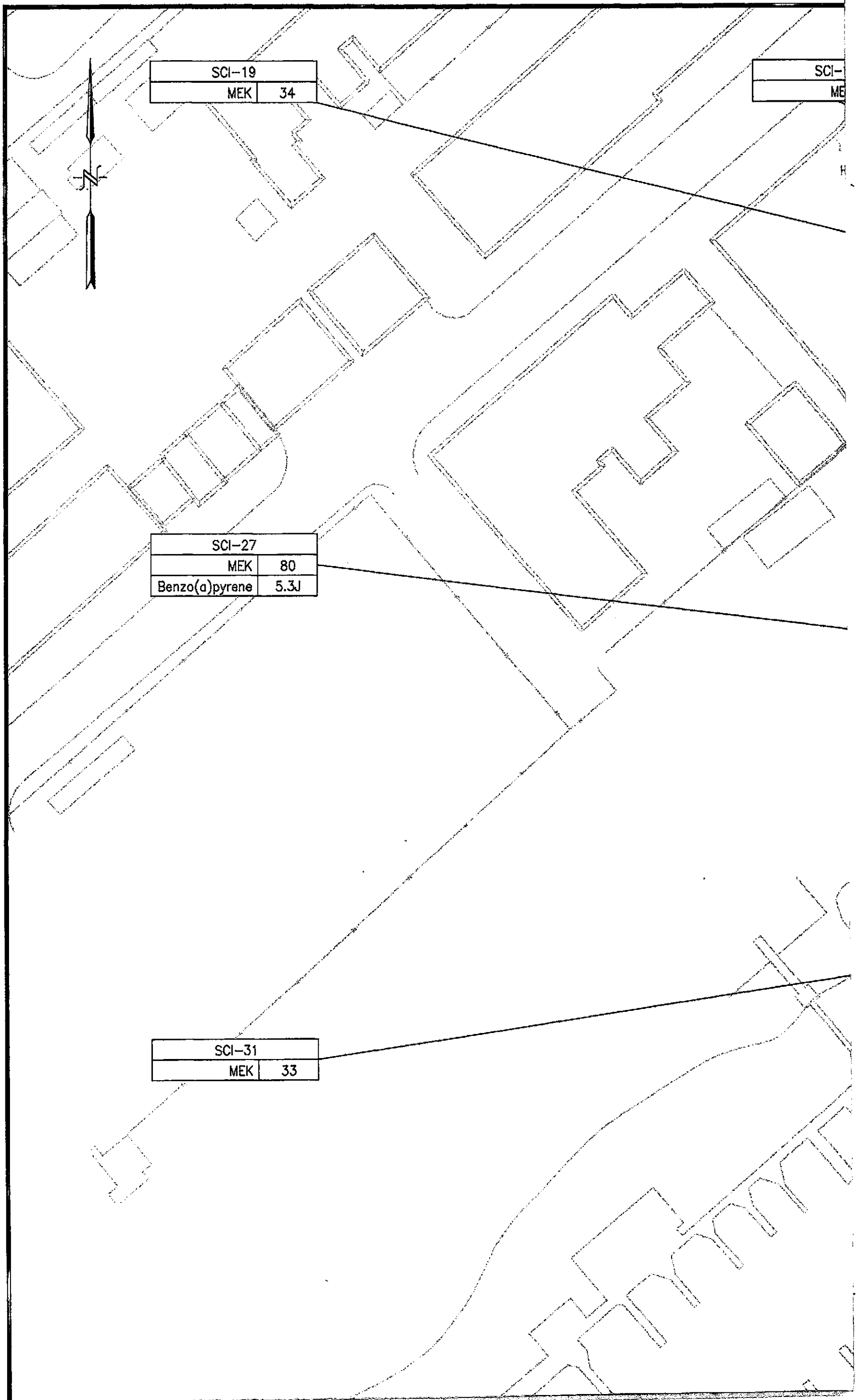


| | |
|--------|----|
| SCI-19 | |
| MEK | 34 |

| | |
|------|--|
| SCI- | |
| ME | |

| | |
|----------------|------|
| SCI-27 | |
| MEK | 80 |
| Benzo(a)pyrene | 5.3J |

| | |
|--------|----|
| SCI-31 | |
| MEK | 33 |



7
K 1,200

SCI-14
MEK 78

SCI-15
MEK

H-101

H-104

6TH AVE

H-110

H-103

H-104W

H-112

H-113

DIESEL ENGINE REPAIR
MACHINE SHOP

CLEANING COMPOUND MFG.
POLISH FACTORY

H-225

ASTs

SCIMV-2

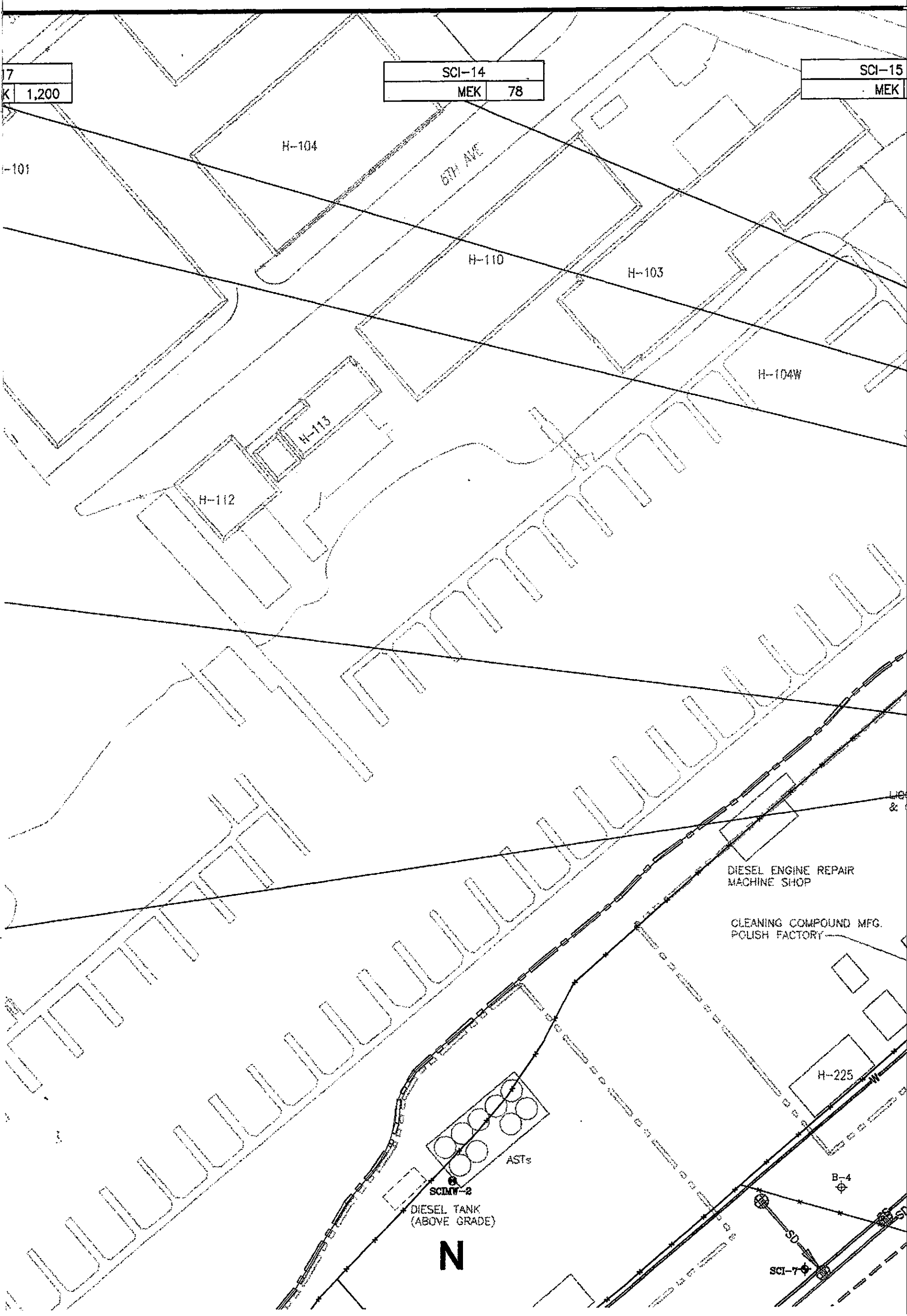
DIESEL TANK
(ABOVE GRADE)

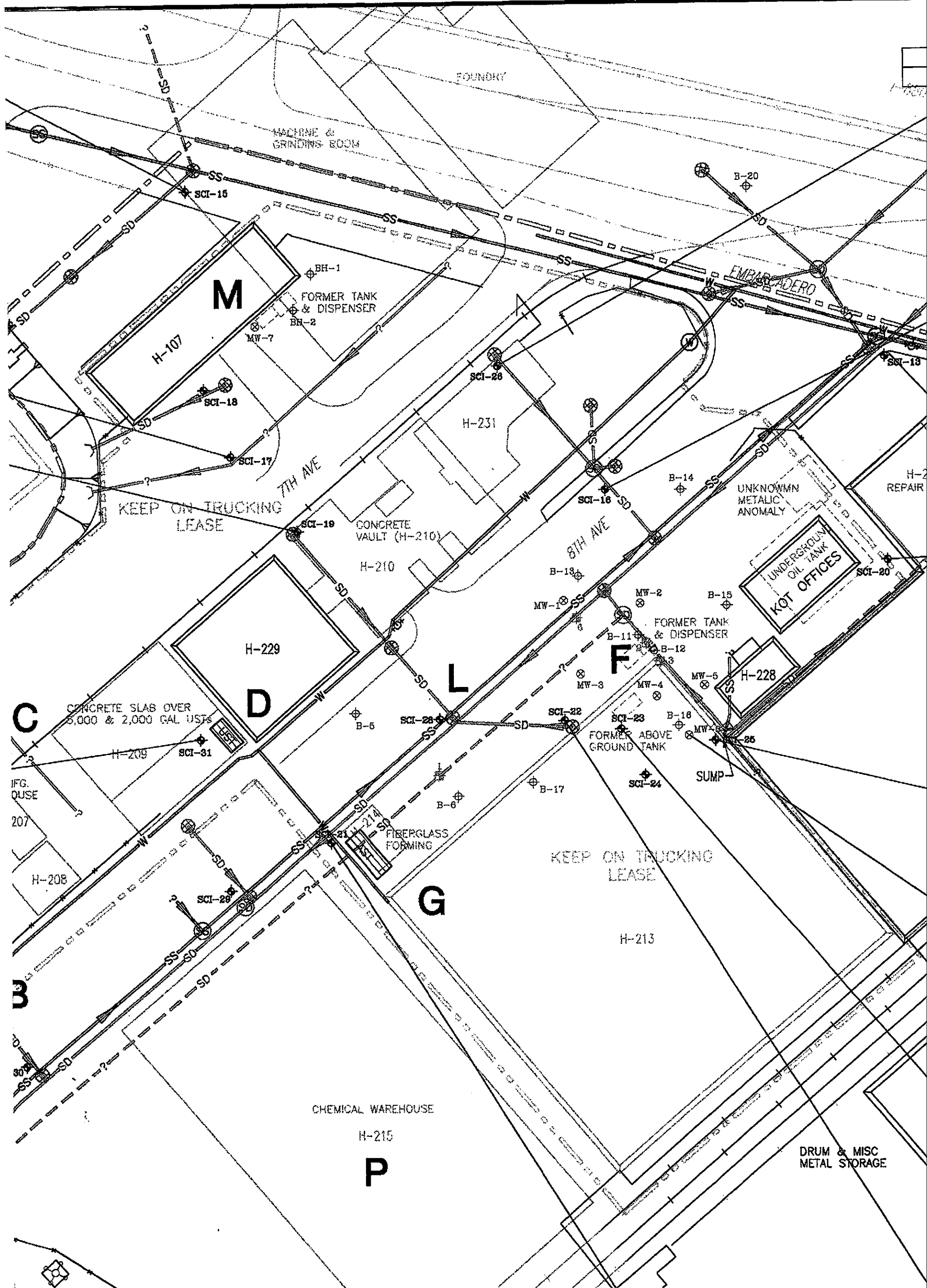
N

B-4

SD

SCI-7





FOUNDRY

MACHINE & GRINDING ROOM

M

H-107

BH-1

FORMER TANK & DISPENSER

BH-2

MW-7

SCI-18

SCI-17

7TH AVE

KEEP ON TRUCKING LEASE

CONCRETE VAULT (H-210)

H-210

H-231

SCI-26

SCI-16

8TH AVE

B-14

UNKNOWN METALIC ANOMALY

UNDERGROUND OIL TANK

KOT OFFICES

H-229

D

CONCRETE SLAB OVER 5,000 & 2,000 GAL USTs

H-209

SCI-31

B-5

SCI-28

L

F

FORMER TANK & DISPENSER

B-15

B-11

B-12

B-13

MW-3

MW-4

MW-5

B-18

MW-6

SCI-23

FORMER ABOVE GROUND TANK

SCI-24

SUMP

H-228

SCI-25

B-17

B-6

G

KEEP ON TRUCKING LEASE

H-213

CHEMICAL WAREHOUSE

H-215

P

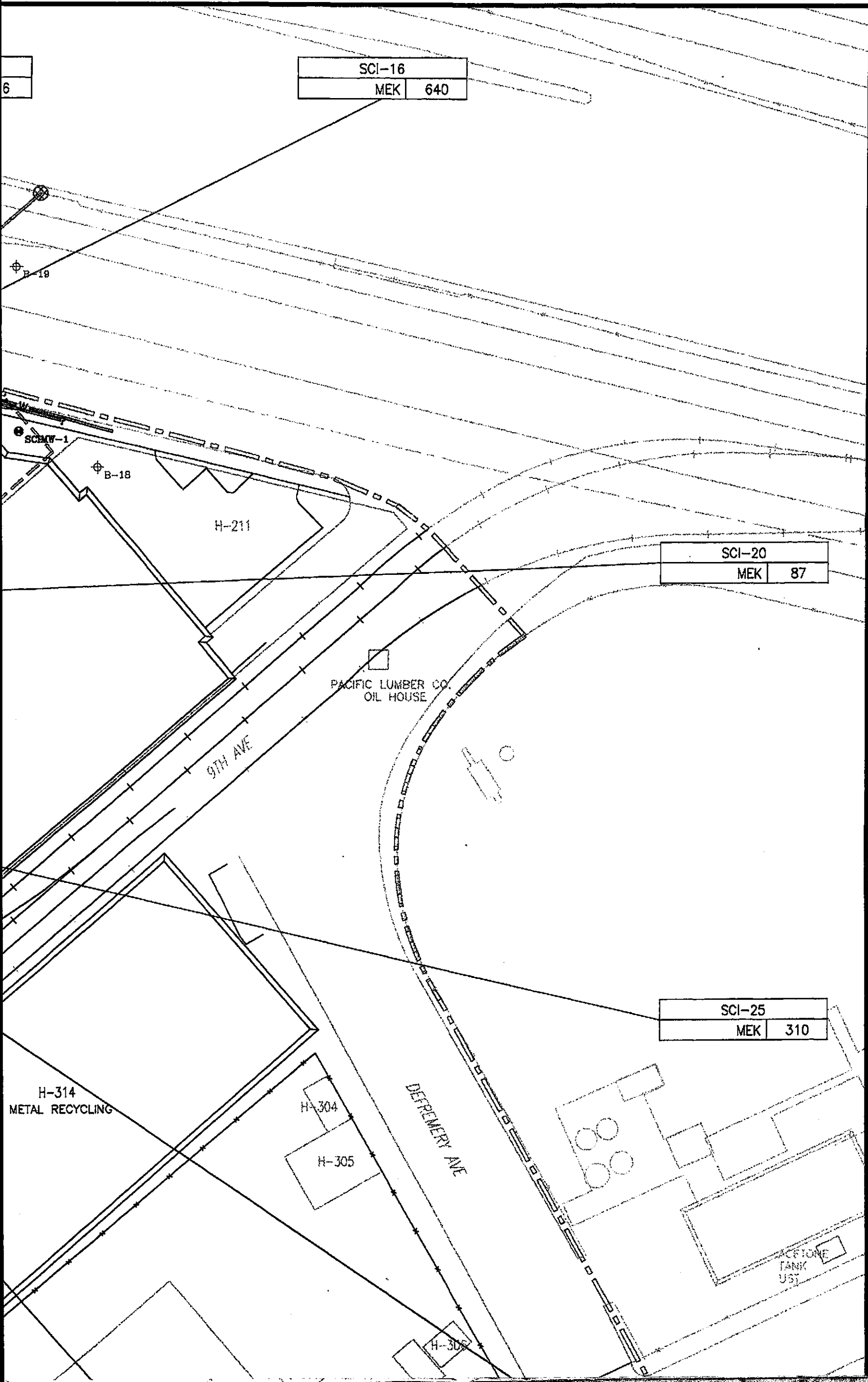
DRUM & MISC METAL STORAGE

6

| |
|---------|
| SCI-16 |
| MEK 640 |

| |
|--------|
| SCI-20 |
| MEK 87 |

| |
|---------|
| SCI-25 |
| MEK 310 |



H-314
METAL RECYCLING

H-304

H-305

H-306

ACTIONE
TANK
US

PACIFIC LUMBER CO.
OIL HOUSE

9TH AVE

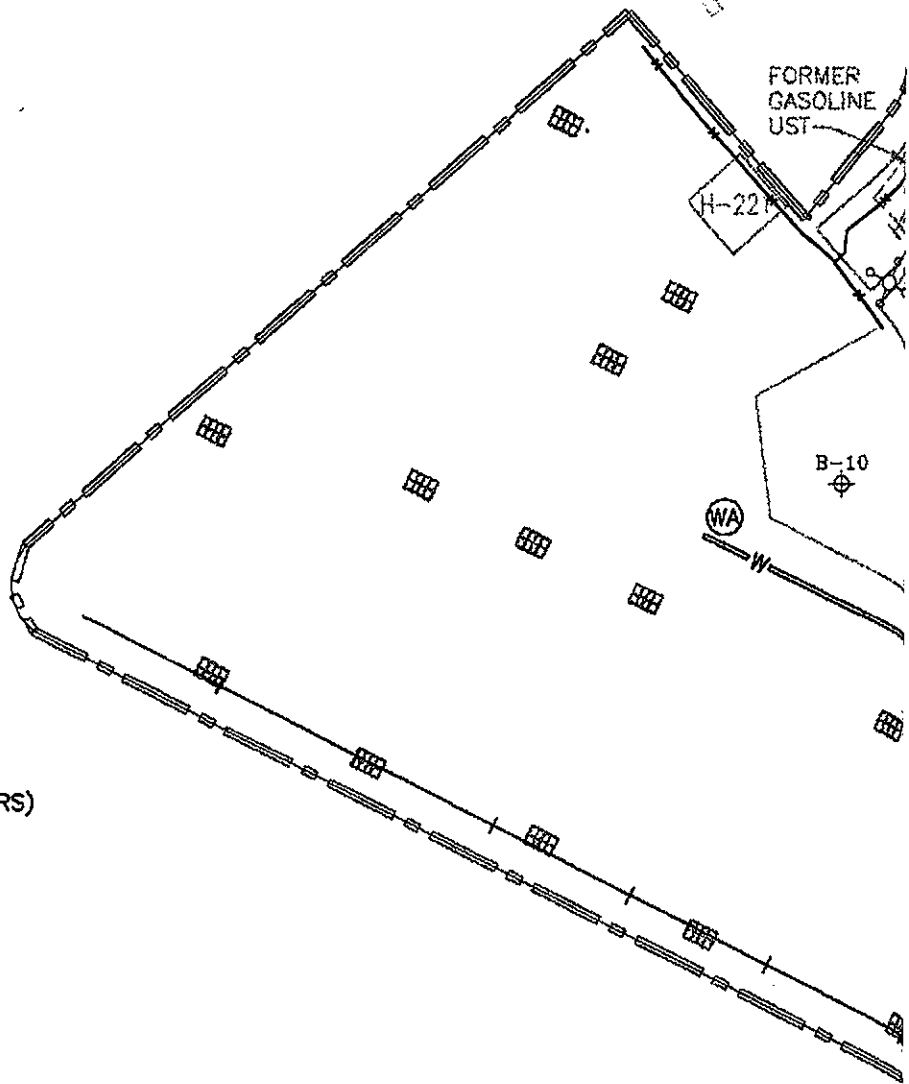
DEREMERY AVE

H-211

| | |
|-------|-----|
| SCI-5 | |
| MEK | 210 |

LEGEND:

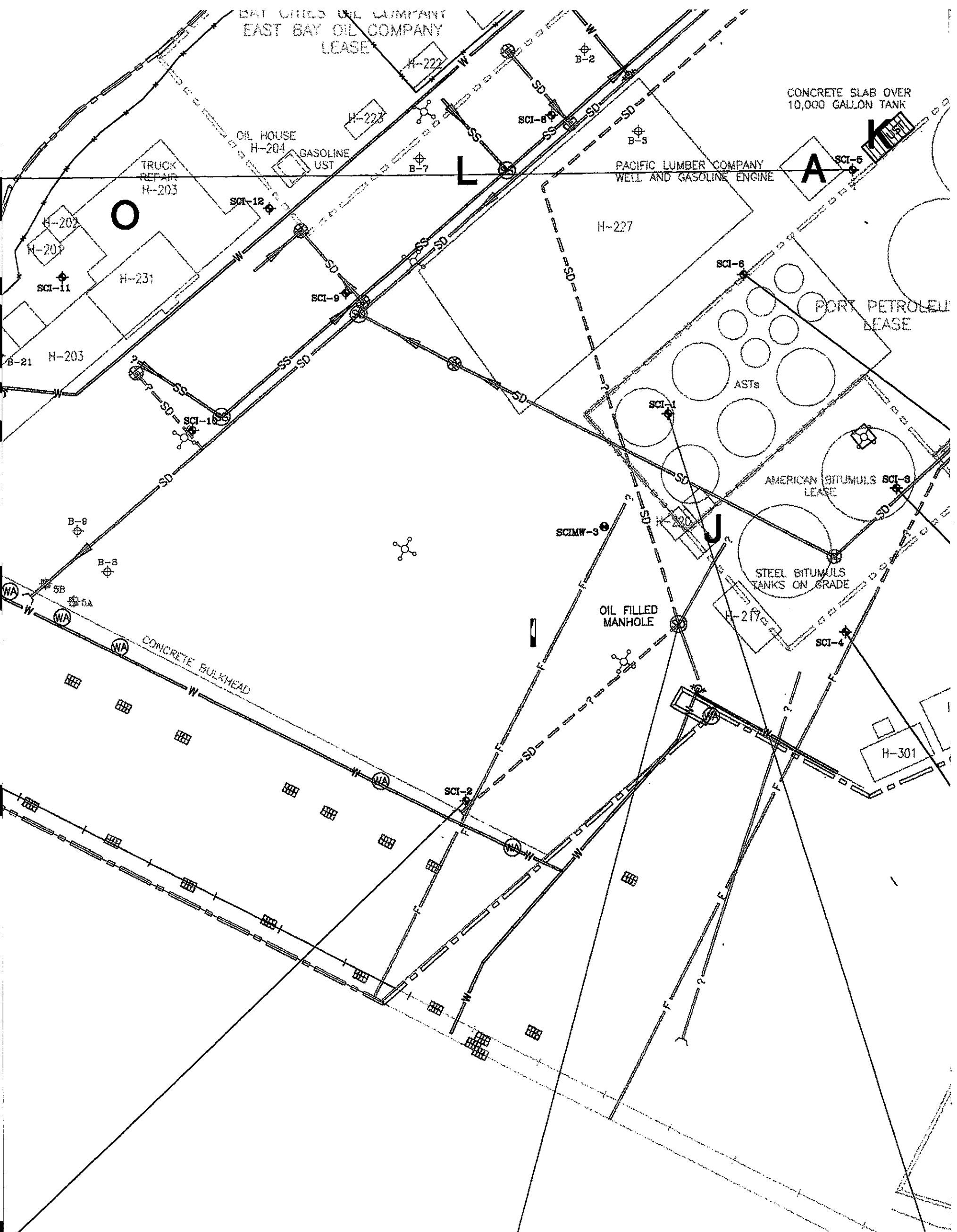
- SOIL BORING LOCATION (SCI)
- SOIL BORING LOCATION (BY OTHERS)
- MONITORING WELL LOCATION (SCI)
- MONITORING WELL LOCATION (BY OTHERS)
- TRENCH LOCATION (BY OTHERS)
- FUEL LINE
- WATER LINE
- SANITARY SEWER
- STORM DRAIN
- UNKNOWN DRAINAGE
- OUTFALL
- FLOW DIRECTION
- DRAIN GRATE
- CATCH BASIN
- MANHOLE
- WHARF ACCESS MANHOLE
- FIRE HYDRANT
- FENCE LINE
- RAILROAD
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- APPROXIMATE LEASE BOUNDARY
- STUDY AREA BOUNDARY
- FORMER ABOVE OR UNDERGROUND STORAGE TANK
- EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- A** SITE REFERENCE AREA



NOTES:

1. UTILITY SURVEY WAS PREPARED BY AN WEST 5-22-96
2. ALL CONCENTRATIONS IN $\mu\text{g/L}$ EXCEPT WHERE NOTED

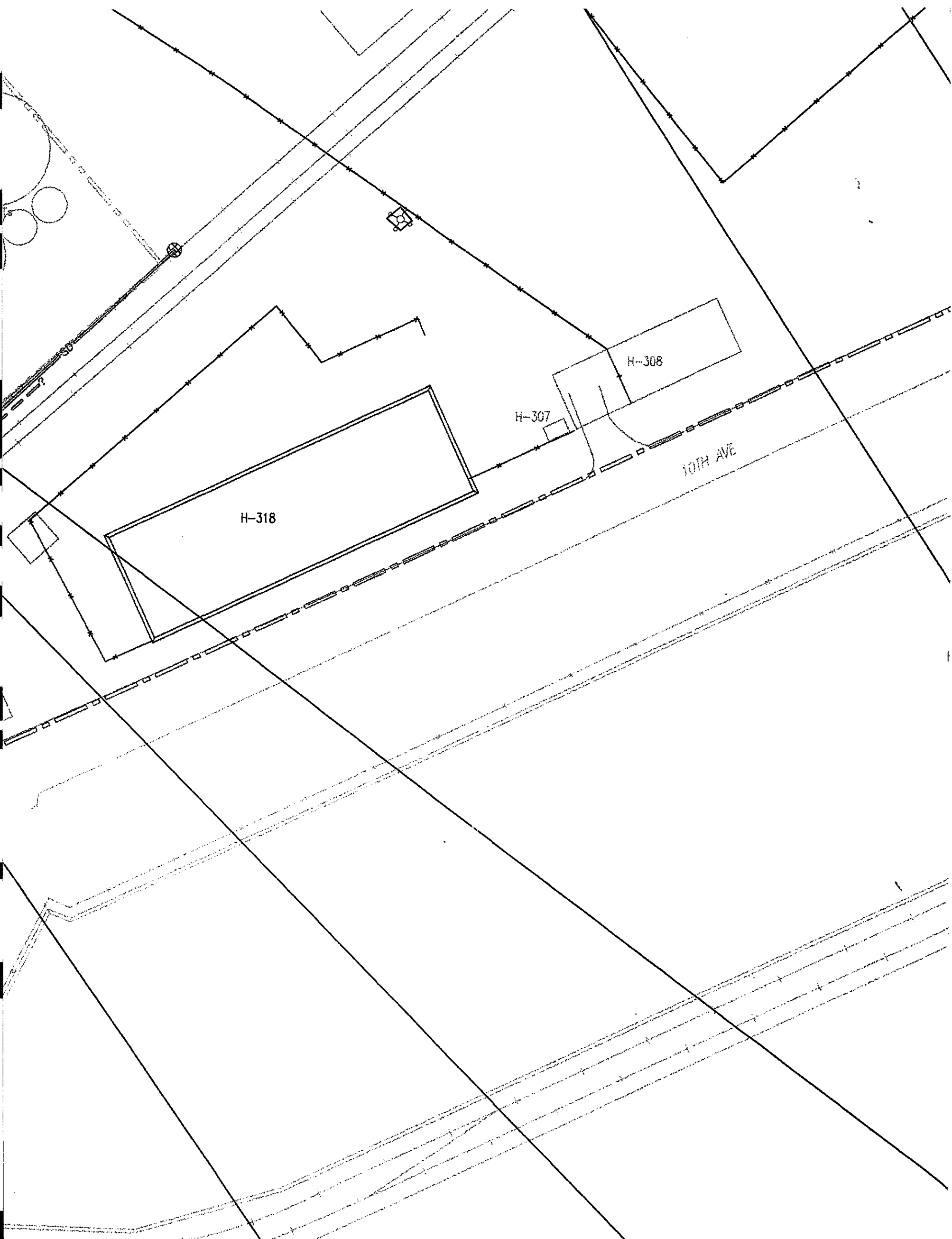
| | |
|-------------|------------------------|
| MEK | Methyl Ethyl Ketone |
| 1,1-DCA | 1,1-Dichloroethane |
| cis-1,1-DCE | cis-1,2-Dichloroethene |



-2
EK 38

| Oil Layer | | Water Layer | |
|---------------------|----------------|-------------|-----|
| 2-Methylnaphthalene | 2,200,000ug/Kg | 1,1-DCA | 45 |
| | | cis-1,2-DCE | 520 |
| | | 1,1,1-TCA | 13J |
| | | TCE | 28 |

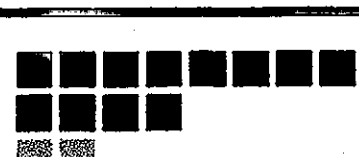
SCI-1
1,1-DCA



| | |
|-------------------|-----|
| SCI-4 | |
| MEK | 450 |
| Pentachlorophenol | 70 |

| | |
|---------|-----|
| SCI-3 | |
| 1,4-DCB | 36J |

DESIGNED BY _____
 DRAWN BY RDP/DJP



3736 Mt. Diablo Blvd. Ste 200
 Lafayette, CA 94548
 (510) 299-7960

SCALE

H-303

| MW-6(FP) | |
|---------------------|-----|
| Naphthalene | 49 |
| 2-Methylnaphthalene | 260 |
| Phenanthrene | 90 |

MER

530
WAS PLUMBING
NOT SHOWN

H-309

| SCI-23 | |
|--------|-----|
| MEK | 310 |

H-932

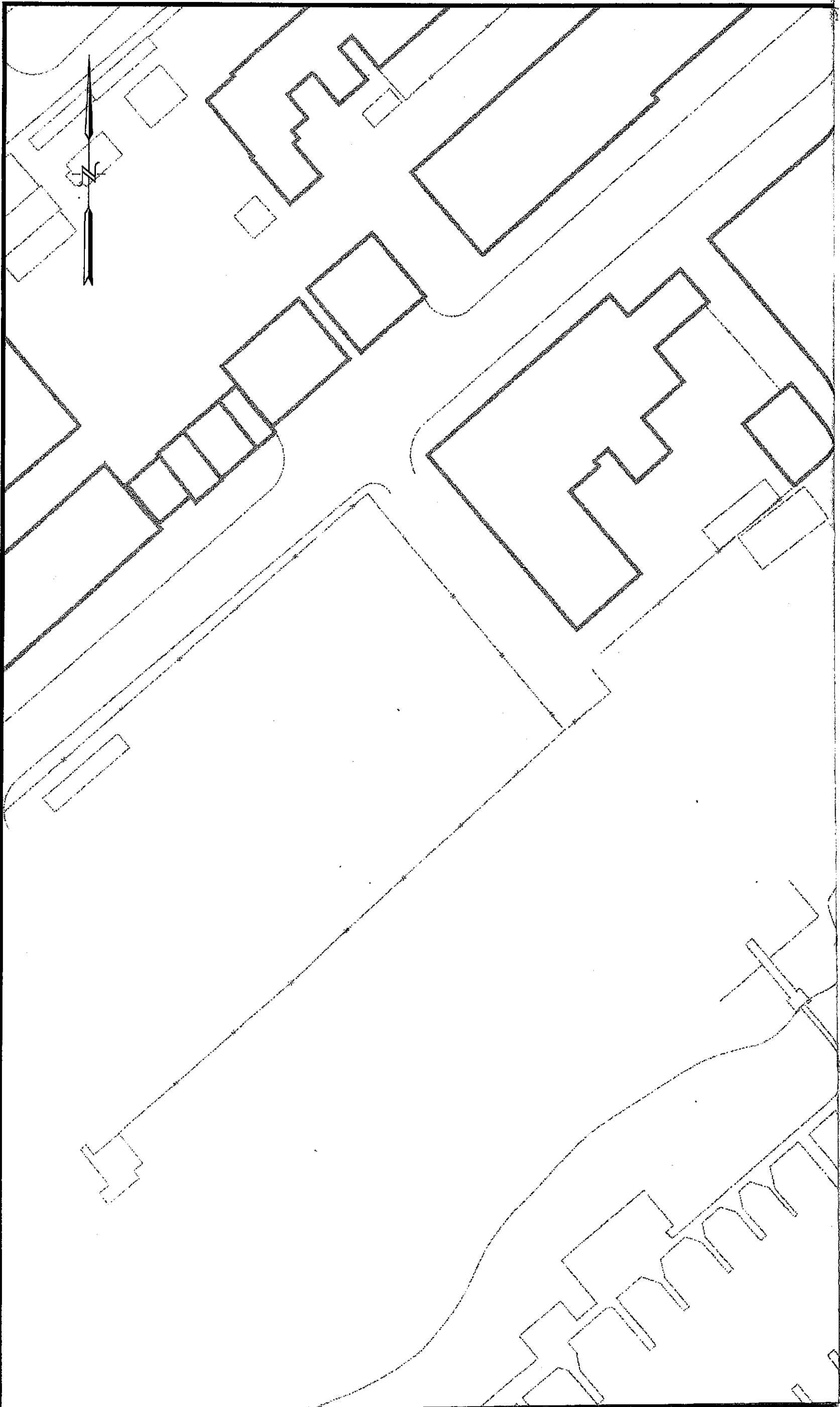
| SCI-6 | |
|--------------|-----|
| fluorene | 37J |
| naphthalene | 110 |
| phenanthrene | 45J |

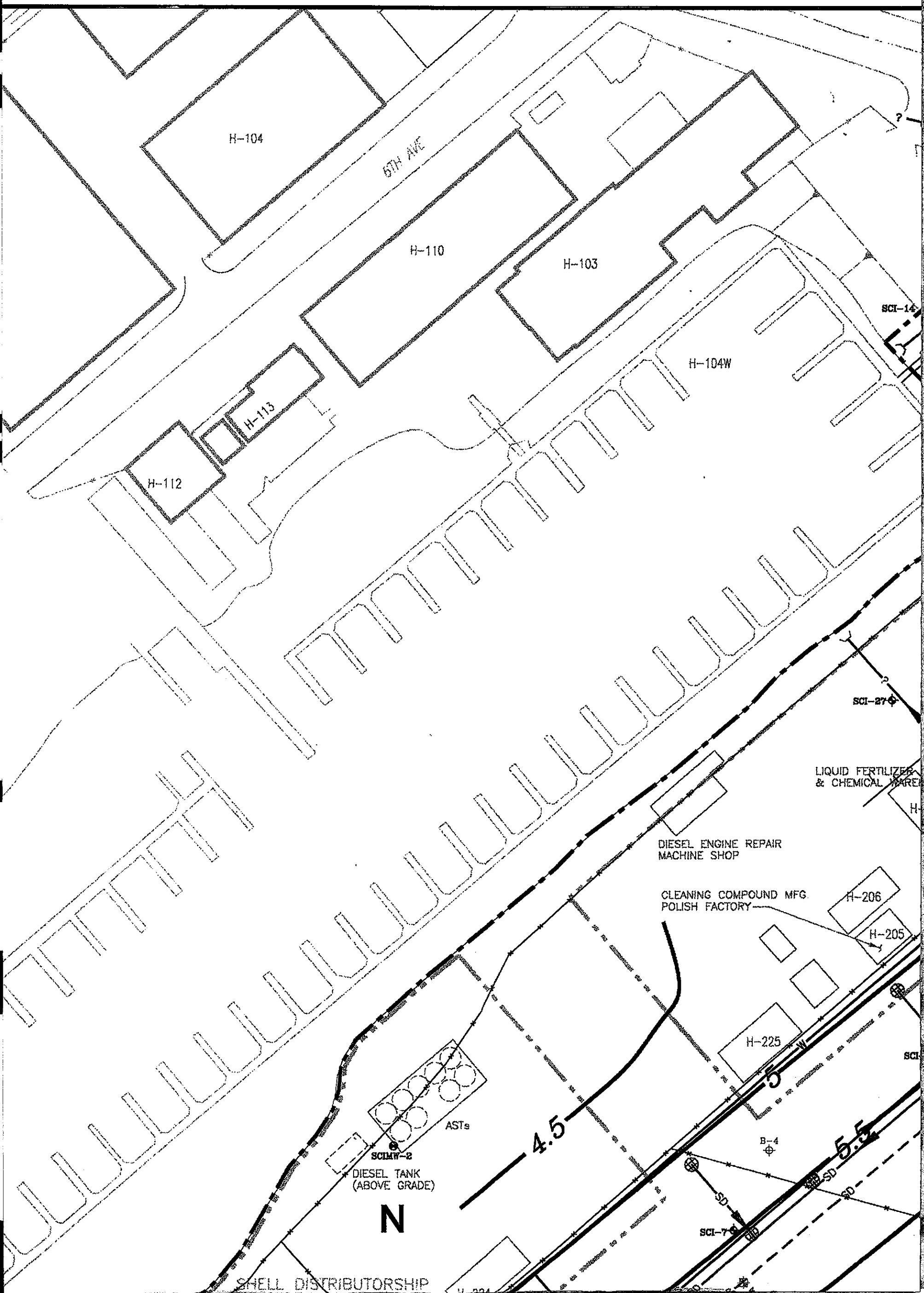
| SCI-21 | |
|--------|-----|
| MEK | 400 |

| SCI-22 | |
|--------|----|
| MEK | 88 |

PORT OF OAKLAND
530 WATER STREET OAKLAND, CALIFORNIA

SCALE
AS SHOWN
PROJECT NO.
133 005





H-104

5TH AVE

H-110

H-103

SCI-14

H-104W

H-113

H-112

SCI-27

LIQUID FERTILIZER & CHEMICAL WARE

DIESEL ENGINE REPAIR MACHINE SHOP

CLEANING COMPOUND MFG POLISH FACTORY

H-206

H-205

H-225

SCI

ASTs

SCLM-2

DIESEL TANK (ABOVE GRADE)

N

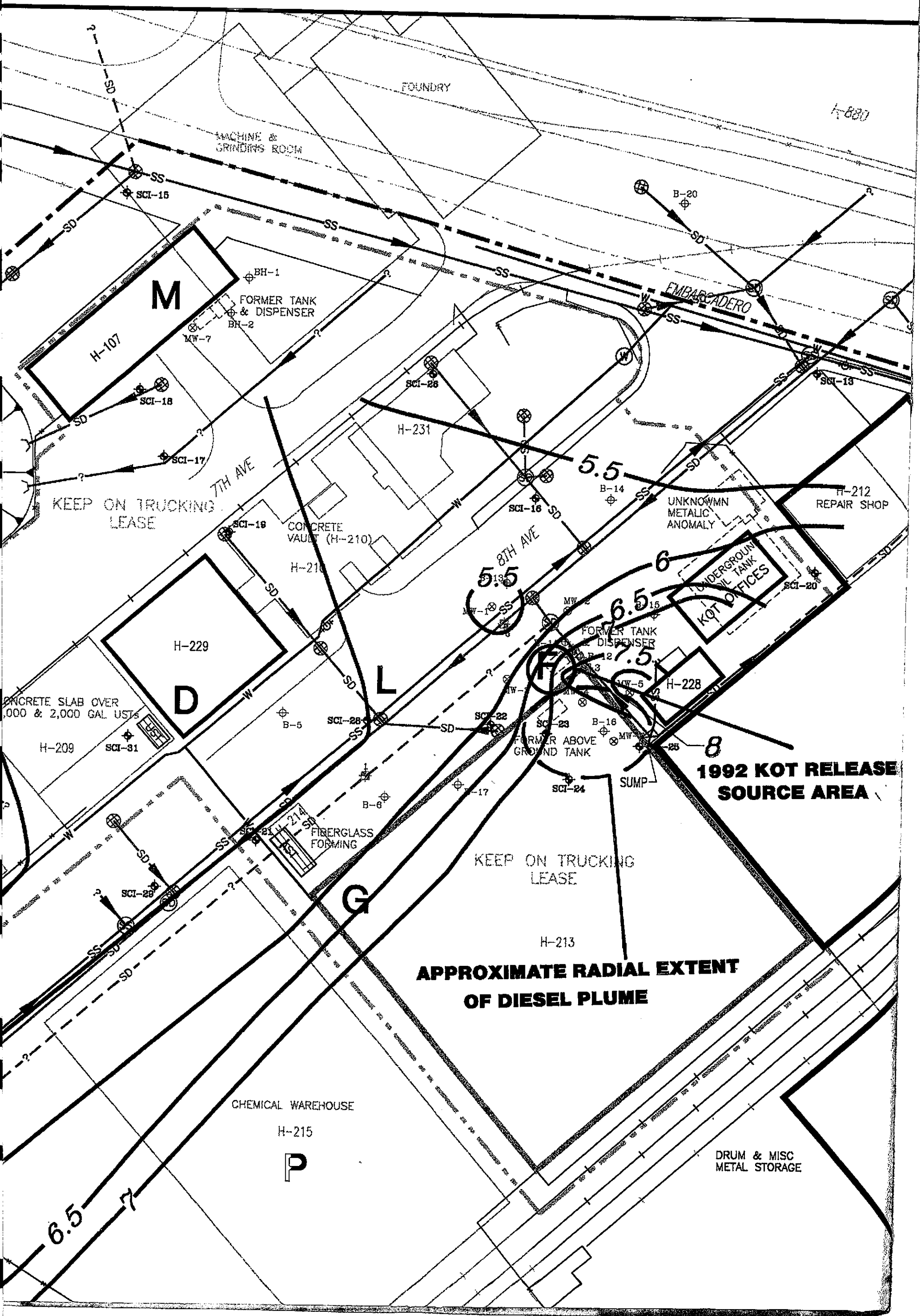
4.5

5.5

SCI-7

B-4

SHELL DISTRIBUTORSHIP



APPROXIMATE RADIAL EXTENT OF DIESEL PLUME

1992 KOT RELEASE SOURCE AREA

FOUNDRY

MACHINE & GRINDING ROOM

M

FORMER TANK & DISPENSER

EMBARRADERO

H-107

H-231

KEEP ON TRUCKING LEASE

7TH AVE

CONCRETE VAULT (H-210)

5.5

UNKNOWN METALLIC ANOMALY

H-212 REPAIR SHOP

H-229

D

L

5.8TH AVE

FORMER TANK DISPENSER

UNDERGROUND TANK

KOT OFFICES

6.5

7.5

8

CONCRETE SLAB OVER 1,000 & 2,000 GAL USTs

H-209

G

FORMER ABOVE GROUND TANK

SUMP

1992 KOT RELEASE SOURCE AREA

KEEP ON TRUCKING LEASE

H-213

CHEMICAL WAREHOUSE

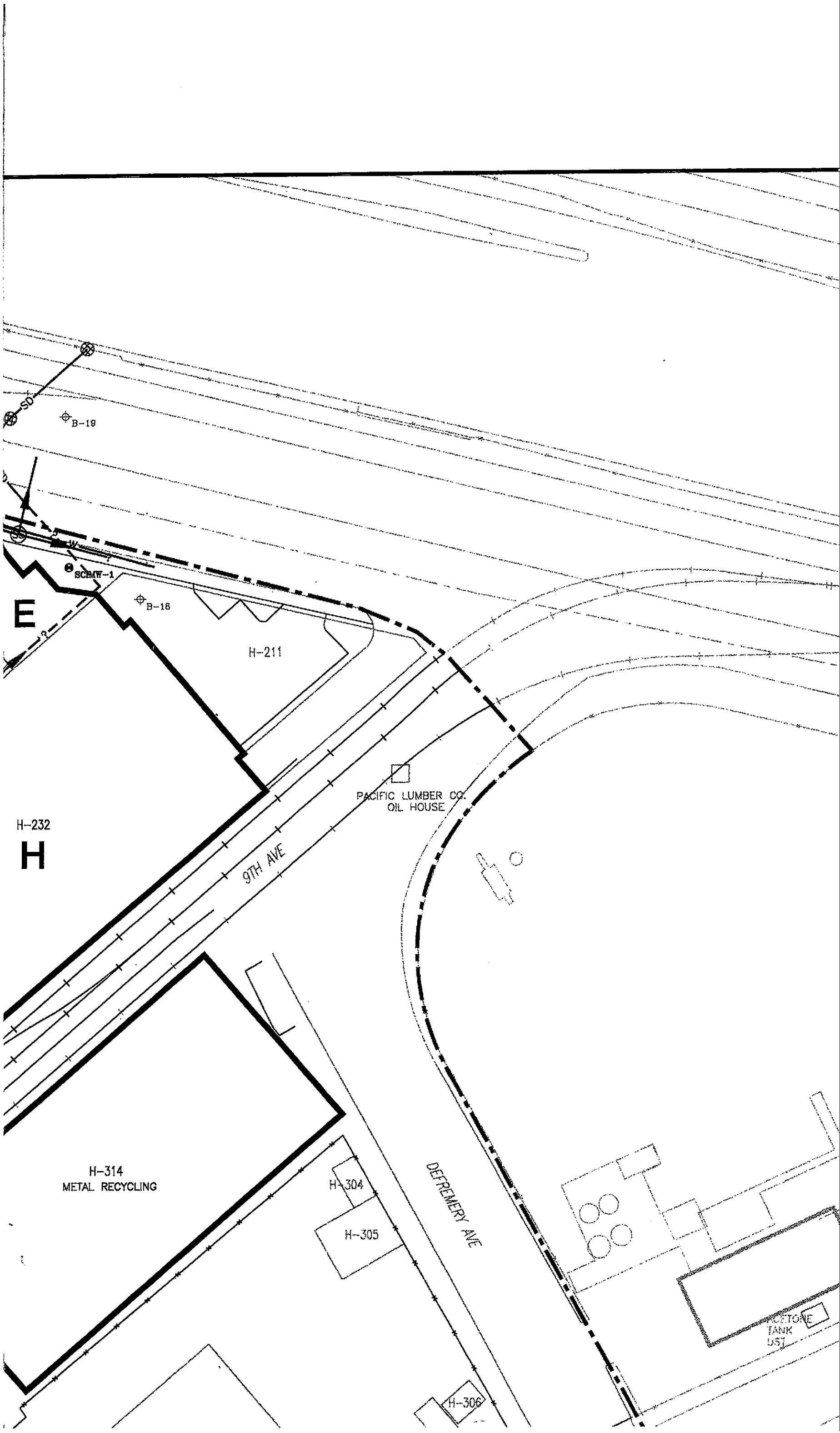
H-215

P

DRUM & MISC METAL STORAGE

6.5 7

1-880



E

H-232
H

H-314
METAL RECYCLING

H-211

PACIFIC LUMBER CO.
OIL HOUSE

9TH AVE

DEFREMERY AVE

H-304

H-305

H-306

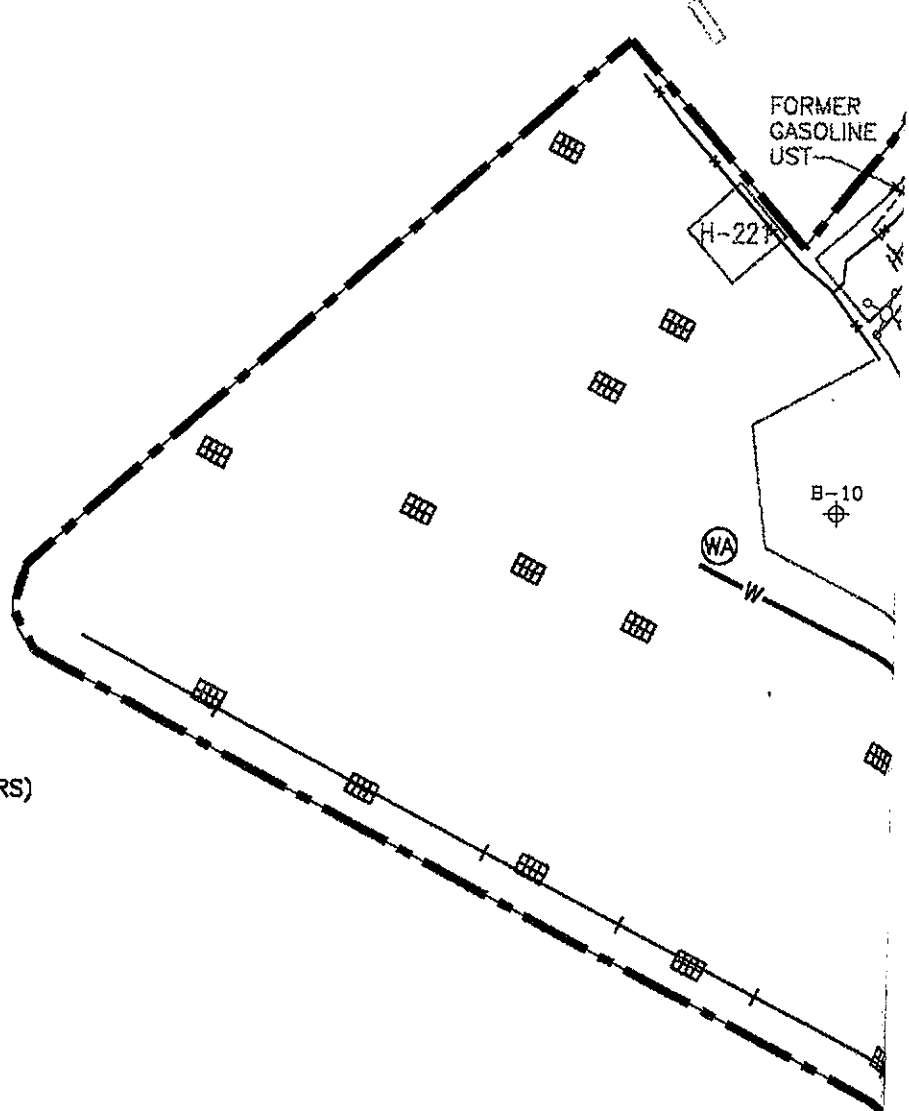
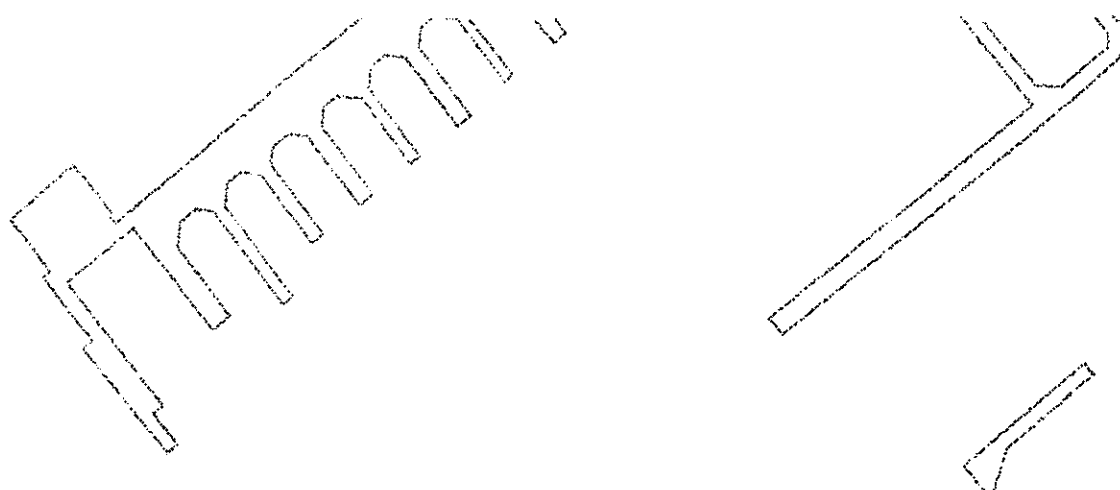
ACETONE
TANK
UST

B-18






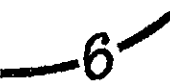
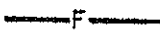
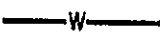

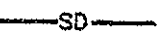
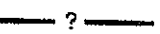







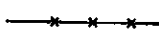
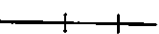

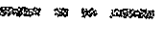

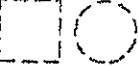


B-18

SCMW-1

SD

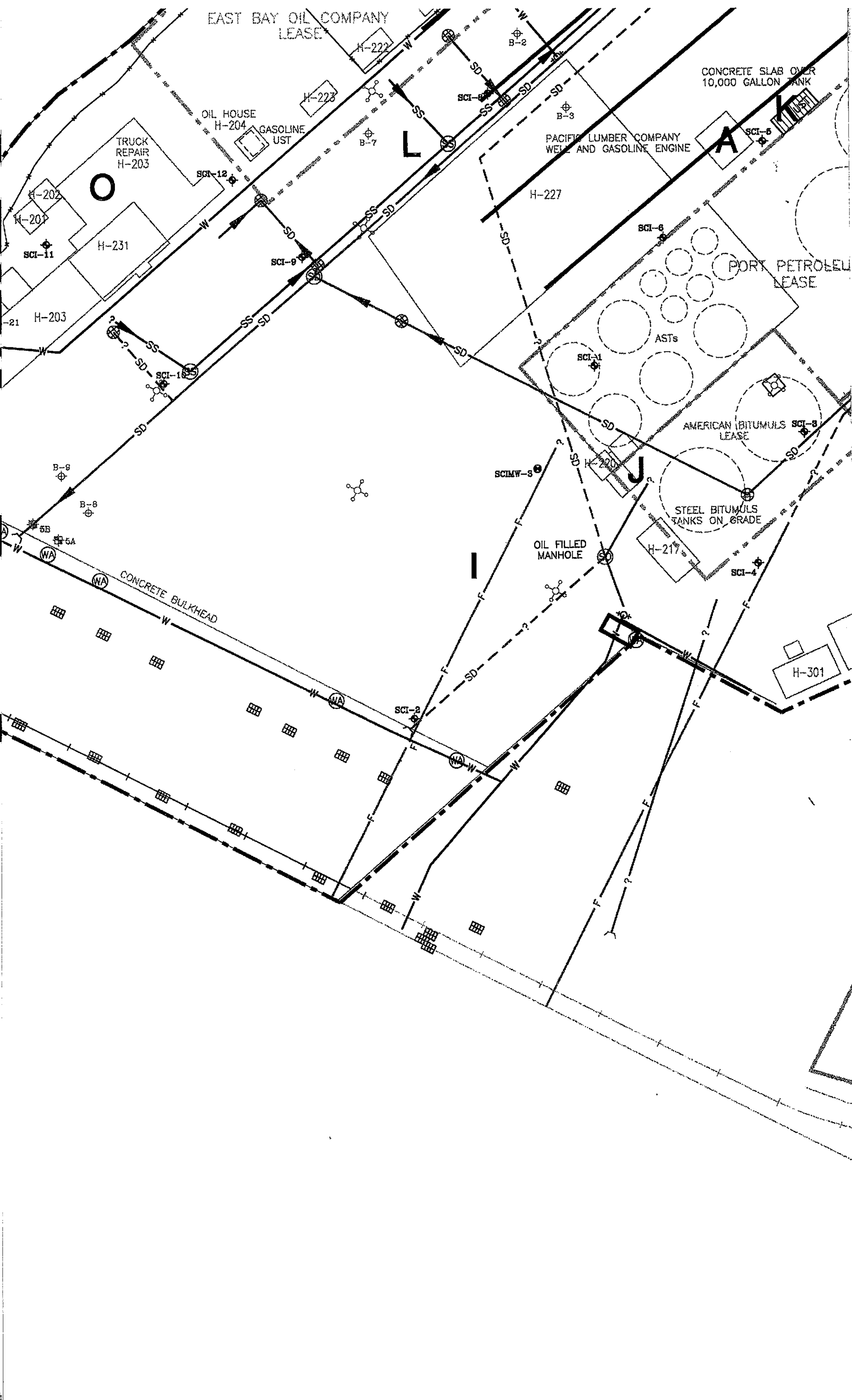


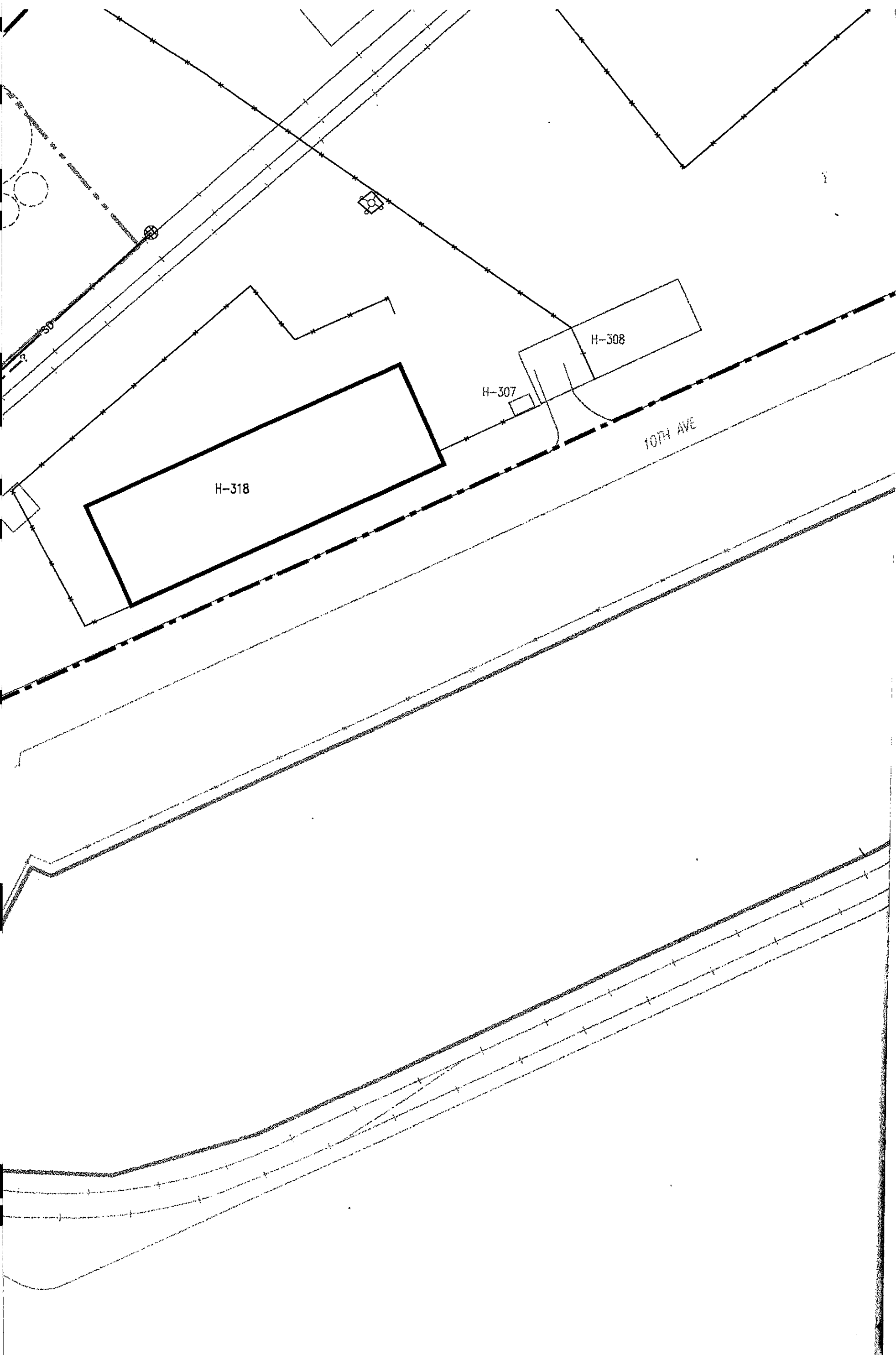
LEGEND:

-  SOIL BORING LOCATION (SCI)
-  SOIL BORING LOCATION (BY OTHERS)
-  MONITORING WELL LOCATION (SCI)
-  MONITORING WELL LOCATION (BY OTHERS)
-  TRENCH LOCATION (BY OTHERS)
-  GROUNDWATER ELEVATION CONTOUR (FEET, PORT OF OAKLAND DATUM)
-  FUEL LINE
-  WATER LINE
-  SANITARY SEWER
-  STORM DRAIN
-  UNKNOWN DRAINAGE
-  OUTFALL
-  FLOW DIRECTION
-  DRAIN GRATE
-  CATCH BASIN
-  MANHOLE
-  WHARF ACCESS MANHOLE
-  FIRE HYDRANT
-  FENCE LINE
-  RAILROAD
-  OVERHEAD LIGHT STANDARD
-  APPROXIMATE LEASE BOUNDARY
-  STUDY AREA BOUNDARY
-  FORMER ABOVE OR UNDERGROUND STORAGE TANK
-  EXISTING ABOVE GROUND STORAGE TANK
-  SITE REFERENCE AREA

NOTES:

1. UTILITY SURVEY WAS PREPARED BY AN WEST 5-22-96





SCALE

| | |
|-------------|---------|
| DESIGNED BY | — |
| DRAWN BY | RDP/DJP |
| CHECKED BY | |



3736 Mt. Diablo Blvd. Ste 2
Lafayette, CA 945
(510) 299-79

H-303

NSFORMER

1950
GAS PLUM
NOT SHOWN

H-309

H-932

530 WATER STREET OAKLAND, CALIFORNIA

PORT OF OAKLAND

SCALE
AS SHOWN

PROJECT NO.
133.005

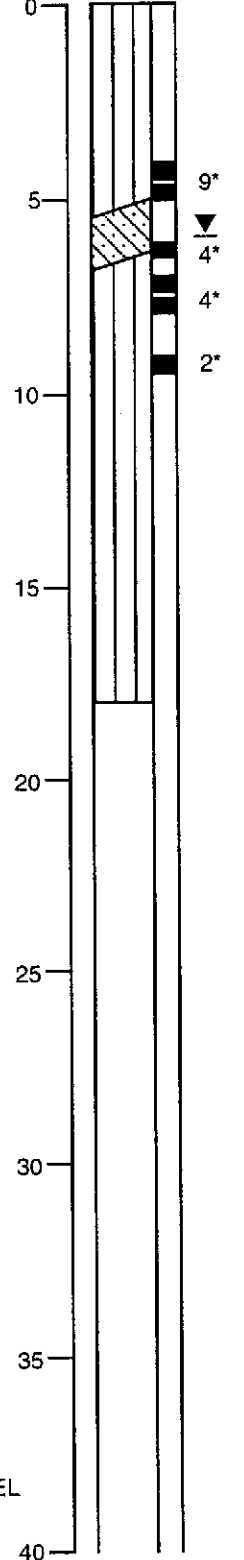
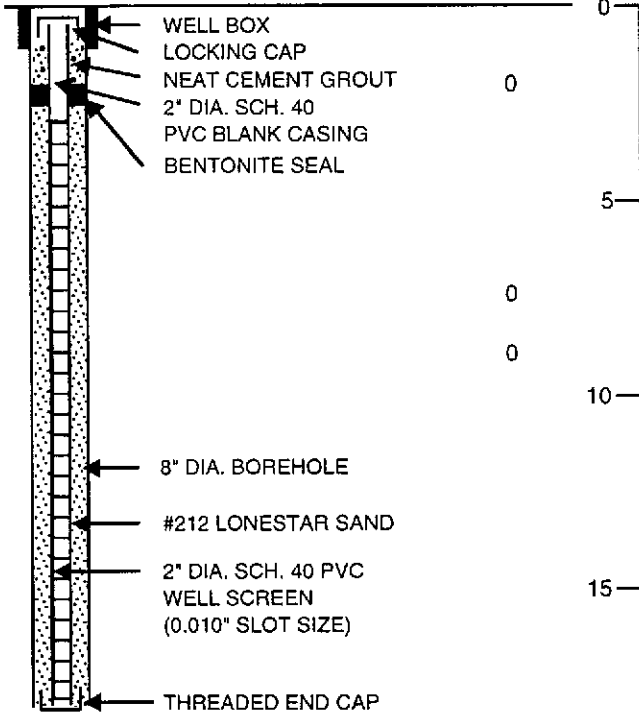
LOG OF TEST BORING SCIMW-1

EQUIPMENT 8" Dia. Hollow Stem Auger
 DATE DRILLED 5/14/96
 ELEVATION 10.37 feet

MOISTURE
CONTENT %
 DRY
DENSITY
(PCF)
 OVM
(ppm)

DEPTH
(feet)

SAMPLE
BLOWS
PER
FOOT



BROWN SANDY SILT (ML)
medium stiff, moist, with gravel (fill)

9'
▼
4'
4'
2'

GRAY-BROWN CLAYEY SAND (SC)
medium dense, moist, with gravel (fill)

GROUNDWATER LEVEL AFTER DRILLING

LIGHT GRAY CLAYEY SILT (ML/MH)
soft, moist, interbedded with clayey sands
and sandy clays

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

PLATE

JOB NUMBER
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DATE
7/12/96

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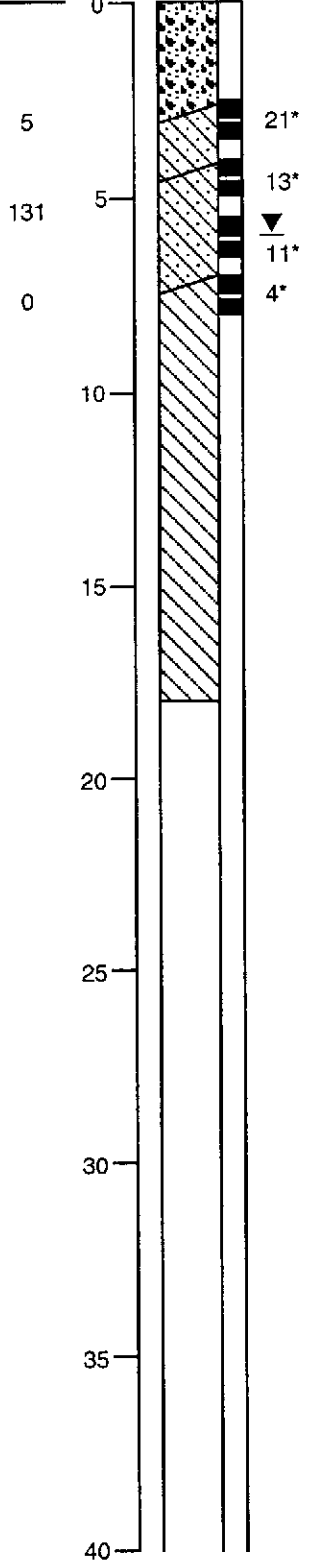
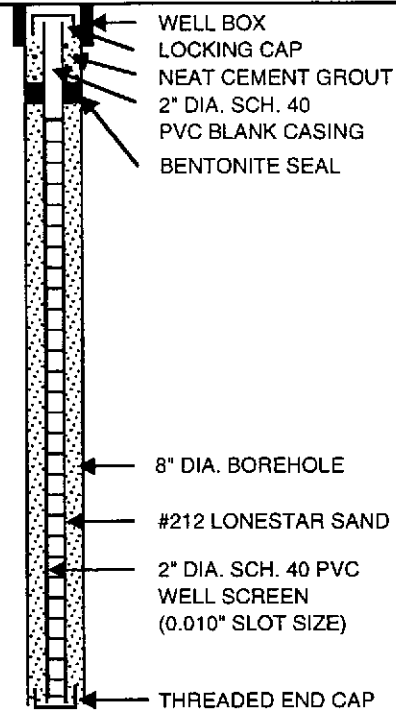
LOG OF TEST BORING SCIMW-2

EQUIPMENT 8" Dia. Hollow Stem Auger

DATE DRILLED 5/14/96

ELEVATION 9.92 feet

MOISTURE CONTENT %
 DRY DENSITY (PCF)
 OVM (ppm)
 DEPTH (feet)
 SAMPLE
 BLOWS PER FOOT



BROWN SANDY GRAVEL (GW)
 dense, moist, with some bricks (fill)
 BROWN CLAYEY SAND (SC)
 medium dense, moist (fill)
 GREENISH GRAY CLAYEY SAND (SC)
 medium dense, moist, with wood fragments,
 rocks and strong hydrocarbon odor (fill)
 ▼ 11*
 GROUNDWATER LEVEL AFTER DRILLING
 BROWN SANDY CLAY (CL)
 4*
 medium stiff, wet

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PLATE

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DATE
 7/12/96

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LOG OF TEST BORING SCIMW-3

EQUIPMENT 8" Dia. Hollow Stem Auger

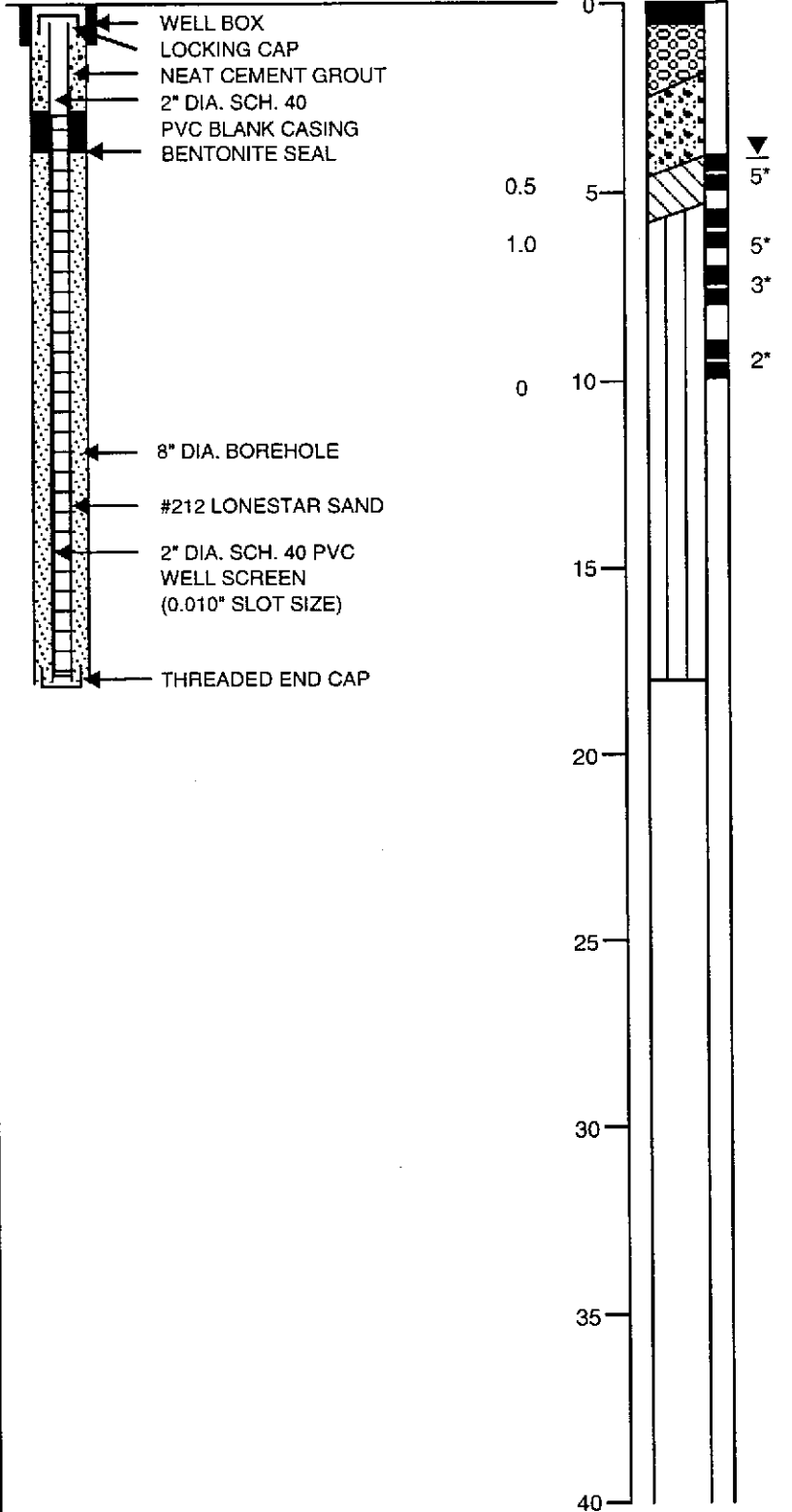
DATE DRILLED 5/14/96

ELEVATION 11.87 feet

MOISTURE
CONTENT %
DRY
DENSITY
(pcf)
OVM
(ppm)

DEPTH
(feet)

SAMPLE
BLOWS
PER
FOOT



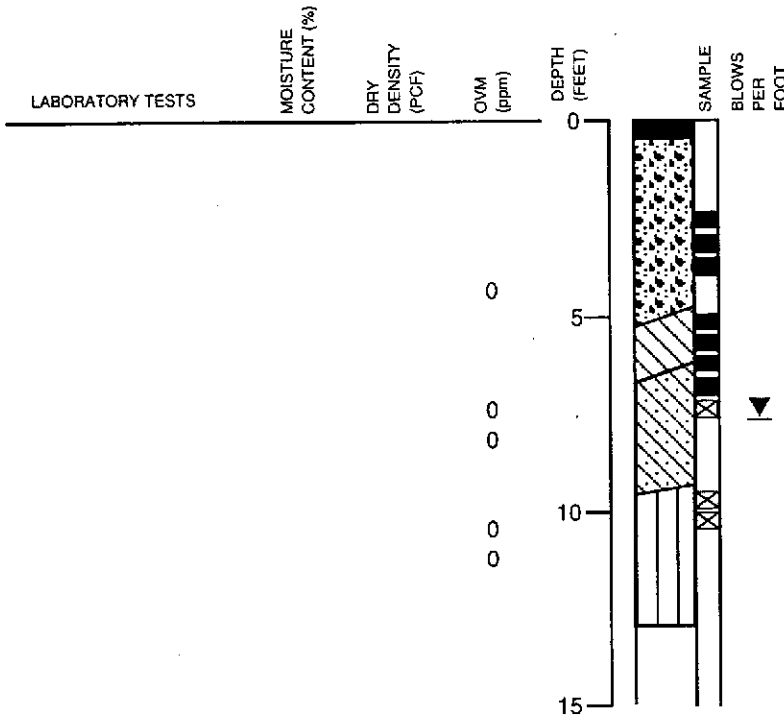
ASPHALTIC CONCRETE - 6-1/2 inches thick
BASEROCK
RED-BROWN SANDY GRAVEL (GW)
loose, moist (fill)
GROUNDWATER LEVEL AFTER DRILLING
GREENISH GRAY SANDY CLAY (CL)
medium stiff, moist, with petroleum
hydrocarbon based fluid and odor in soil
GRAY CLAYEY SILT (ML/MH)
medium stiff, moist, with shell fragments
and interbedded with sandy soils

LOG OF TEST BORING SCI-1

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/21/96

ELEVATION -----



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

GRAY-GREEN SANDY CLAY (CL)
medium stiff, moist, with some rocks and
gravel (fill)

hydrocarbon odor at 6 feet
▼
GROUNDWATER LEVEL AFTER
DRILLING

GRAY-GREEN CLAYEY SAND (SC)
medium dense, wet, interbedded with some
silty clays and clayey silts

GREEN-BLACK CLAYEY SILT (ML)
medium stiff, moist (Bay Mud)

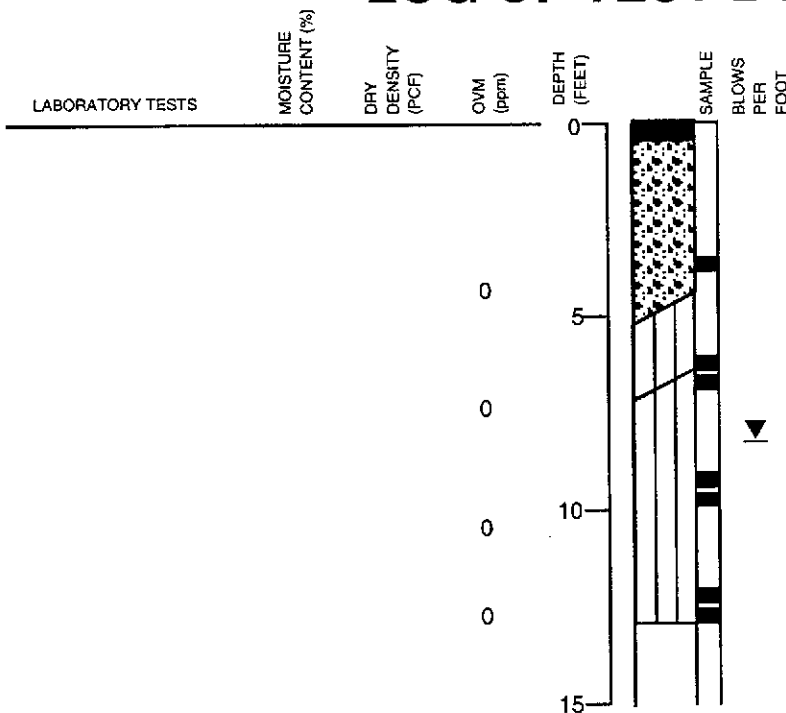
Temporary casing installed in borehole to
obtain groundwater sample. Casing
removed and borehole backfilled with neat
cement grout.

LOG OF TEST BORING SCI-2

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/21/96

ELEVATION 14.07 Feet



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

BROWN SANDY SILT (ML)
medium stiff, moist (fill)

GRAY-GREEN CLAYEY SANDY SILT (ML-
MH)

soft to medium stiff, moist, hydrocarbon
odor

▼
GROUNDWATER LEVEL AFTER DRILLING

Temporary casing installed in borehole to
obtain groundwater sample. Casing removed
and borehole backfilled with neat cement
grout.

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DATE
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LOG OF TEST BORING SCI-3

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/21/96

ELEVATION 11.79 Feet

LABORATORY TESTS

MOISTURE
CONTENT (%)

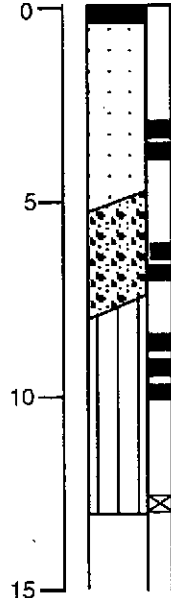
DRY
DENSITY
(PCF)

OVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



ASPHALTIC CONCRETE - 6 inches thick
 BROWN GRAVELLY SAND (SW)
 dense, moist, with some clay (fill)
 GROUNDWATER LEVEL AFTER
 DRILLING
 RED-GRAY SANDY GRAVEL (GW)
 dense, moist, with petroleum odor at 7 feet

 GRAY-GREEN CLAYEY SILT (ML/MH)
 medium stiff, moist, interbedded with thin
 layers of fine-grained sand

Temporary casing installed in borehole to
 obtain groundwater sample. Casing
 removed and borehole backfilled with neat
 cement grout.

LOG OF TEST BORING SCI-4

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/21/96

ELEVATION 12.35 Feet

LABORATORY TESTS

MOISTURE
CONTENT (%)

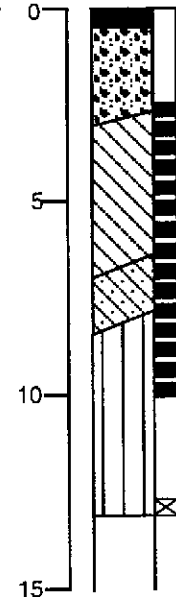
DRY
DENSITY
(PCF)

OVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



ASPHALTIC CONCRETE 6 inches thick
 BROWN SANDY GRAVEL (GW)
 medium dense, moist (fill)
 GRAY AND GREEN SANDY CLAY (CL)
 medium stiff, moist (fill)
 GROUNDWATER LEVEL AFTER DRILLING
 Color changes to blue/dark grey with brown
 sand pockets
 GRAY-GREEN CLAYEY SAND (SC)
 medium dense, wet, with fine-grained sand
 BLUE-GRAY CLAYEY SILT (ML)
 medium stiff, moist, interbedded with thin
 layers of fine-grained sand

Temporary casing installed in borehole to
 obtain groundwater sample. Casing
 removed and borehole backfilled with neat
 cement grout.

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JOB NUMBER
133.005

DATE
7/12/96

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PLATE

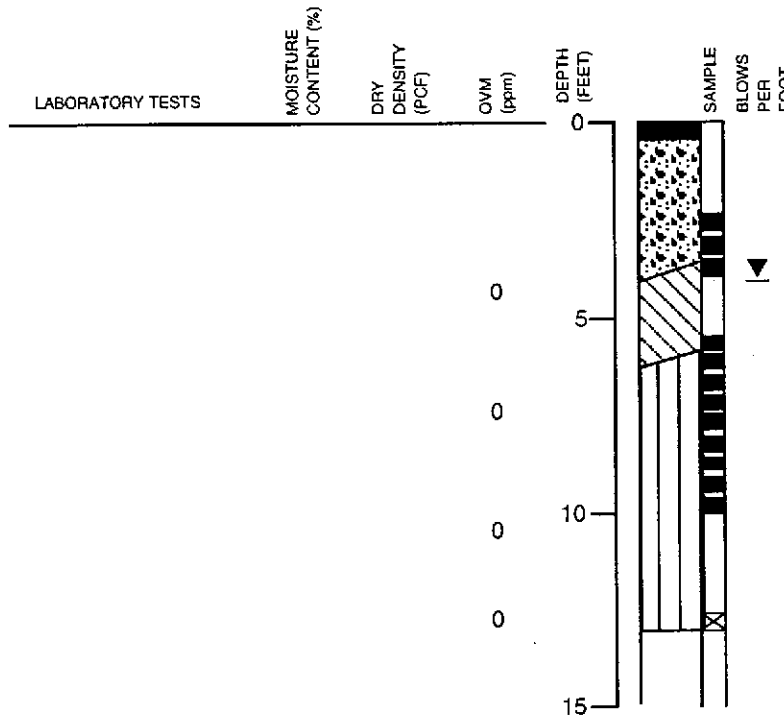
12

LOG OF TEST BORING SCI-5

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/21/96

ELEVATION -----



ASPHALTIC CONCRETE 6 inches thick
 BROWN SANDY GRAVEL (GW)
 medium dense, moist, with chert (fill)
 GROUNDWATER LEVEL AFTER DRILLING
 GRAY AND BROWN SANDY CLAY (CL)
 stiff, moist, with gravel (fill)
 GREEN AND GRAY CLAYEY SILT (ML/MH)
 medium stiff, moist, with shells and hydrocarbon odor at 7 feet

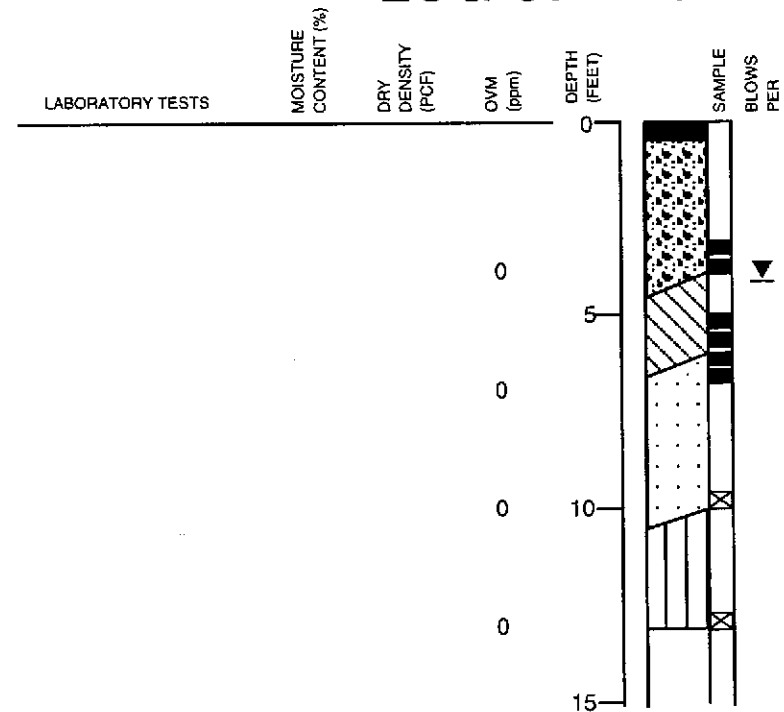
Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

LOG OF TEST BORING SCI-6

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/21/96

ELEVATION -----



ASPHALTIC CONCRETE 6 inches thick
 BROWN AND RED SANDY GRAVEL (GW)
 medium dense, moist, with chert and hydrocarbon odor (fill)
 GROUNDWATER LEVEL AFTER DRILLING
 GREEN SILTY CLAY (CL)
 medium stiff, moist, with interbedded thin layers of sand
 GREEN SAND (SP/SW)
 loose, wet

GREEN AND BLACK CLAYEY SILT (ML)
 medium stiff, moist

Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

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DATE
7/12/96

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PLATE

LOG OF TEST BORING SCI-7

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/22/96

ELEVATION 9.70 Feet

LABORATORY TESTS

MOISTURE
CONTENT (%)

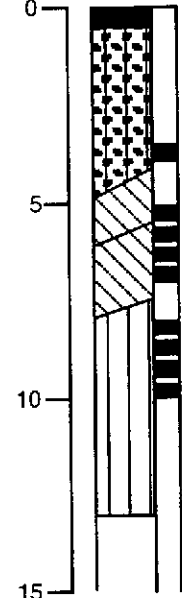
DRY
DENSITY
(PCF)

QVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



ASPHALTIC CONCRETE 6 inches thick
LIGHT GRAY SILTY GRAVEL (GM)
loose, moist (fill)

BLACK AND BROWN SILTY CLAY (CL)
medium stiff, moist, with sand
BLACK AND DARK GRAY SILTY CLAY (CL)
medium stiff, moist
GROUNDWATER LEVEL AFTER DRILLING
DARK GRAY CLAYEY SILT (ML)
soft, moist, with shells

Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

LOG OF TEST BORING SCI-8

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/22/96

ELEVATION 10.10 Feet

LABORATORY TESTS

MOISTURE
CONTENT (%)

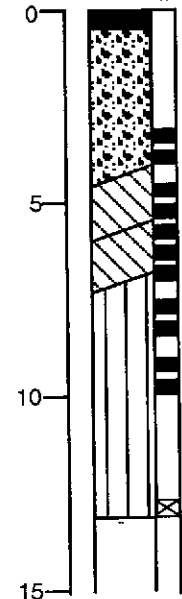
DRY
DENSITY
(PCF)

QVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



ASPHALTIC CONCRETE 6 inches thick
BROWN-RED AND GREEN SANDY GRAVEL (GW)
dense, moist (fill)
GRAY-GREEN SANDY CLAY (CL)
medium stiff, moist, very fine-grained sand
GROUNDWATER LEVEL AFTER DRILLING
BLACK AND GRAY SILTY CLAY (CL)
medium stiff, moist
BLACK CLAYEY SILT (ML)
soft, moist, with shells

Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

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JOB NUMBER
133.005

DATE
7/12/96

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PLATE

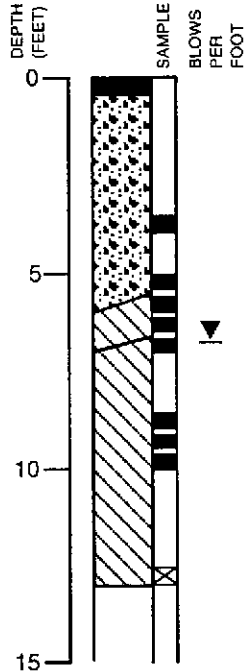
14

LOG OF TEST BORING SCI-9

EQUIPMENT 2-3/8" Dia. Enviro-core
 DATE DRILLED 5/22/96
 ELEVATION 10.01 Feet

LABORATORY TESTS

MOISTURE CONTENT (%)
 DRY DENSITY (PCF)
 OVM (ppm)



ASPHALTIC CONCRETE 6 inches thick
 RED-BROWN AND GREEN SANDY GRAVEL (GW)
 loose to medium dense, moist (fill)

GREEN SANDY CLAY (CL)
 medium stiff, moist, with shells
 GROUNDWATER LEVEL AFTER DRILLING

BLACK AND GRAY SILTY CLAY (CL)
 medium stiff, moist

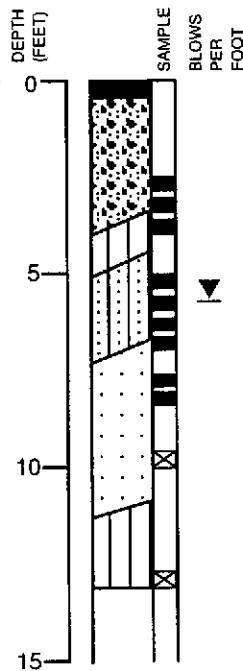
Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

LOG OF TEST BORING SCI-10

EQUIPMENT 2-3/8" Dia. Enviro-core
 DATE DRILLED 5/22/96
 ELEVATION 13.11 Feet

LABORATORY TESTS

MOISTURE CONTENT (%)
 DRY DENSITY (PCF)
 OVM (ppm)



ASPHALTIC CONCRETE 6 inches thick
 BROWN SANDY GRAVEL (GW)
 hard, moist, (fill)
 GREEN SANDY SILT (ML)
 medium stiff, moist
 GREEN AND DARK GRAY SILTY SAND (SM)
 medium dense, moist
 GROUNDWATER LEVEL AFTER DRILLING
 GREEN SILTY SAND (SP)
 loose, wet

DARK GRAY CLAYEY SILT (ML)
 medium stiff, moist

Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

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JOB NUMBER
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DATE
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LOG OF TEST BORING SCI-11

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/22/96

ELEVATION 11.00 Feet

LABORATORY TESTS

MOISTURE
CONTENT (%)

DRY
DENSITY
(PCF)

OVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



ASPHALTIC CONCRETE 6 inches thick
BROWN AND ORANGE SANDY GRAVEL
(GW)
dense, moist (fill)

▼ GROUNDWATER LEVEL AFTER
DRILLING
GREEN SILTY CLAY (CL)
medium stiff, moist, with shells and
sand

Temporary casing installed in borehole to
obtain groundwater sample. Casing removed
and borehole backfilled with neat cement
grout.

LOG OF TEST BORING SCI-12

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/22/96

ELEVATION 9.70 Feet

LABORATORY TESTS

MOISTURE
CONTENT (%)

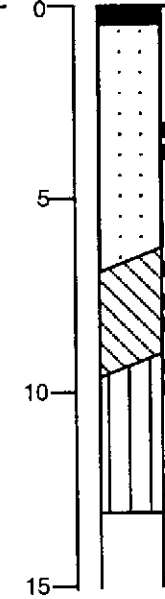
DRY
DENSITY
(PCF)

OVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



▼ ASPHALTIC CONCRETE 6 inches thick
GROUNDWATER LEVEL AFTER DRILLING
BROWN AND GRAY GRAVELLY SAND (SW)
medium dense, moist, (fill)

GRAY SILTY CLAY (CL)
medium stiff, moist
Color changes to greenish-gray
GRAY AND BLACK CLAYEY SILT (ML)
soft, moist

Temporary casing installed in borehole to
obtain groundwater sample. Casing removed
and borehole backfilled with neat cement
grout.

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DATE
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LOG OF TEST BORING SCI-13

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/23/96

ELEVATION 10.26 Feet

LABORATORY TESTS

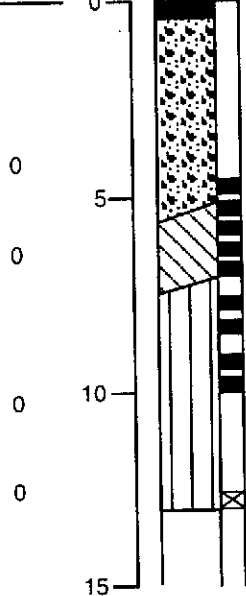
MOISTURE
CONTENT (%)

DRY
DENSITY
(PCF)

OVM
(ppm)

DEPTH
(FEET)

SAMPLE
BLOWS
PER
FOOT



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

GROUNDWATER LEVEL AFTER
DRILLING
GRAY AND BLACK SILTY CLAY (CL)
soft, moist, with fine-grained sand
DARK GRAY CLAYEY SILT (ML)
soft, moist, with roots

Temporary casing installed in borehole to
obtain groundwater sample. Casing removed
and borehole backfilled with neat cement
grout.

LOG OF TEST BORING SCI-14

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/23/96

ELEVATION 9.81 Feet

LABORATORY TESTS

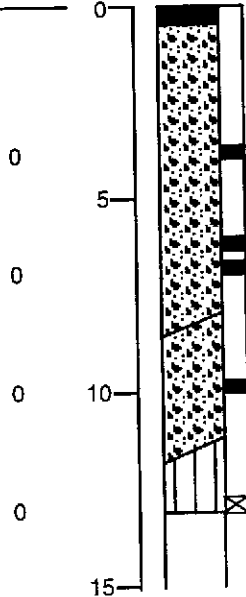
MOISTURE
CONTENT (%)

DRY
DENSITY
(PCF)

OVM
(ppm)

DEPTH
(FEET)

SAMPLE
BLOWS
PER
FOOT



ASPHALTIC CONCRETE 6 inches thick
BROWN AND RED SANDY GRAVEL (GW)
loose, moist, (fill)

GROUNDWATER LEVEL AFTER DRILLING

BROWN SANDY GRAVEL (GW)
dense, wet

GRAY CLAYEY SILT (ML)
soft, wet

Temporary casing installed in borehole to
obtain groundwater sample. Casing removed
and borehole backfilled with neat cement
grout.

Subsurface Consultants

8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER
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DATE
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APPROVED

PLATE

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LOG OF TEST BORING SCI-15

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/23/96

ELEVATION 10.39 Feet

LABORATORY TESTS

MOISTURE
CONTENT (%)

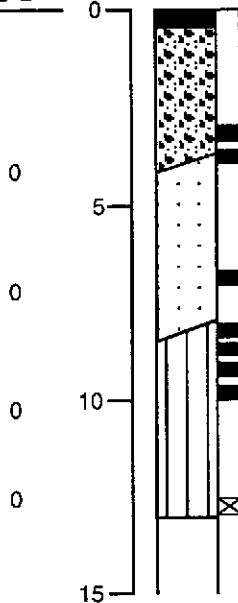
DRY
DENSITY
(PCF)

OVN
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



ASPHALTIC CONCRETE 6 inches thick
BROWN AND WHITE SANDY GRAVEL
(GW)

medium dense, moist (fill)
GROUNDWATER LEVEL AFTER
DRILLING

BROWN GRAVELLY SAND (SW)
dense, wet

GRAY CLAYEY SILT (ML)
soft, wet, with roots

Temporary casing installed in borehole to
obtain groundwater sample. Casing removed
and borehole backfilled with neat cement
grout.

LOG OF TEST BORING SCI-16

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/23/96

ELEVATION 10.30 Feet

LABORATORY TESTS

MOISTURE
CONTENT (%)

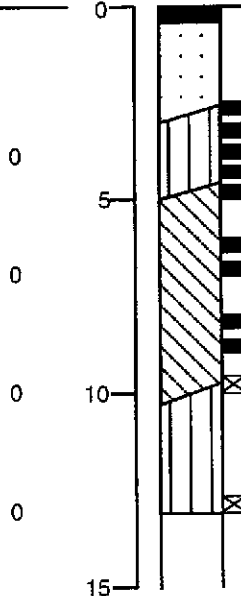
DRY
DENSITY
(PCF)

OVN
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



ASPHALTIC CONCRETE 6 inches thick
GROUNDWATER LEVEL AFTER DRILLING
GRAY GRAVELLY SAND (SW)

medium dense (fill)
GREEN-GRAY SANDY SILT (ML)
medium dense, moist, with sand lenses

BLACK SILTY CLAY (CL)
medium stiff, moist

DARK GRAY CLAYEY SILT (ML)
soft, moist,

Temporary casing installed in borehole to
obtain groundwater sample. Casing removed
and borehole backfilled with neat cement
grout.

Subsurface Consultants

8TH AVENUE STUDY AREA - OAKLAND, CA

JOB NUMBER

133.005

DATE

7/12/96

APPROVED

PLATE

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LOG OF TEST BORING SCI-17

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/24/96

ELEVATION -----

LABORATORY TESTS

MOISTURE
CONTENT (%)

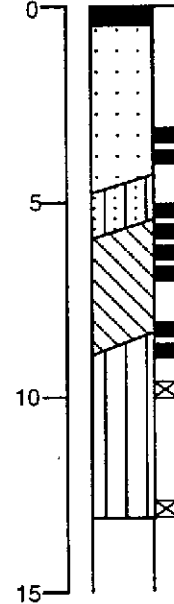
DRY
DENSITY
(PCF)

OVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



ASPHALTIC CONCRETE 6 inches thick
GRAY AND GREEN GRAVELLY SAND (SW)
medium dense, moist (fill)
BROWN SILTY SAND (SM)
hard, wet, with brick-like fragments (fill)
GRAY-GREEN SILTY CLAY (CL)
stiff, moist

DARK GRAY CLAYEY SILT (ML)
soft, wet

GROUNDWATER LEVEL AFTER DRILLING

Temporary casing installed in borehole to
obtain groundwater sample. Casing
removed and borehole backfilled with neat
cement grout.

LOG OF TEST BORING SCI-18

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/24/96

ELEVATION -----

LABORATORY TESTS

MOISTURE
CONTENT (%)

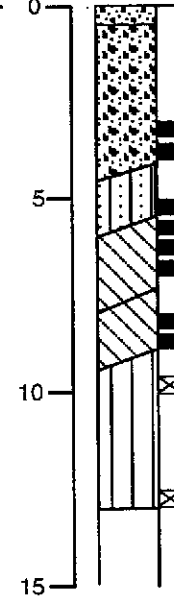
DRY
DENSITY
(PCF)

OVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



CEMENT CONCRETE 6 inches thick
BROWN SANDY GRAVEL (GW)
medium dense, moist (fill)

GROUNDWATER LEVEL AFTER DRILLING

BROWN SILTY SAND (SM)
dense, wet, with gravel and brick-like
fragments (fill)

GRAY-GREEN SILTY CLAY (CL)
medium stiff, moist

GRAY AND BLACK SILTY CLAY (CL)
medium stiff, wet

DARK GRAY CLAYEY SILT (ML)
soft, wet

Temporary casing installed in borehole to
obtain groundwater sample. Casing
removed and borehole backfilled with neat
cement grout.

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LOG OF TEST BORING SCI-19

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/24/96

ELEVATION -----

LABORATORY TESTS

MOISTURE
CONTENT (%)

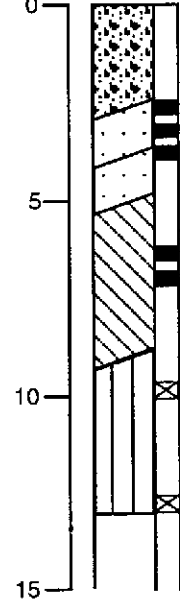
DRY
DENSITY
(PCF)

OVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



GROUNDWATER LEVEL AFTER DRILLING
 DARK BROWN SANDY GRAVEL (GW)
 medium dense, moist (fill)
 DARK BROWN SILTY SAND (SP)
 medium dense, wet
 Hydrocarbon odor at 4 feet
 BROWN GRAVELLY SAND (SW)
 loose, wet
 GRAY AND BLACK SILTY CLAY (CL)
 medium dense, moist, with trace sand and
 gravel
 BLACK CLAYEY SILT (ML)
 soft, moist

Temporary casing installed in borehole to
 obtain groundwater sample. Casing
 removed and borehole backfilled with neat
 cement grout.

LOG OF TEST BORING SCI-20

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/24/96

ELEVATION -----

LABORATORY TESTS

MOISTURE
CONTENT (%)

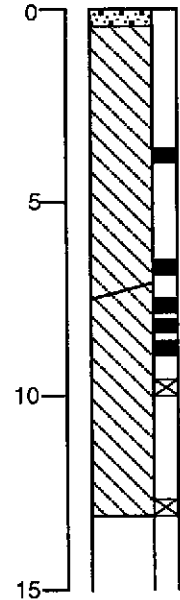
DRY
DENSITY
(PCF)

OVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



CONCRETE 6 inches thick
 BROWN SANDY CLAY (CL)
 medium dense, moist, with gravel

GROUNDWATER LEVEL AFTER DRILLING
 Hydrocarbon odor at 7 feet
 BLACK SILTY CLAY (CL)
 medium stiff, moist

Temporary casing installed in borehole to
 obtain groundwater sample. Casing
 removed and borehole backfilled with neat
 cement grout.

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DATE
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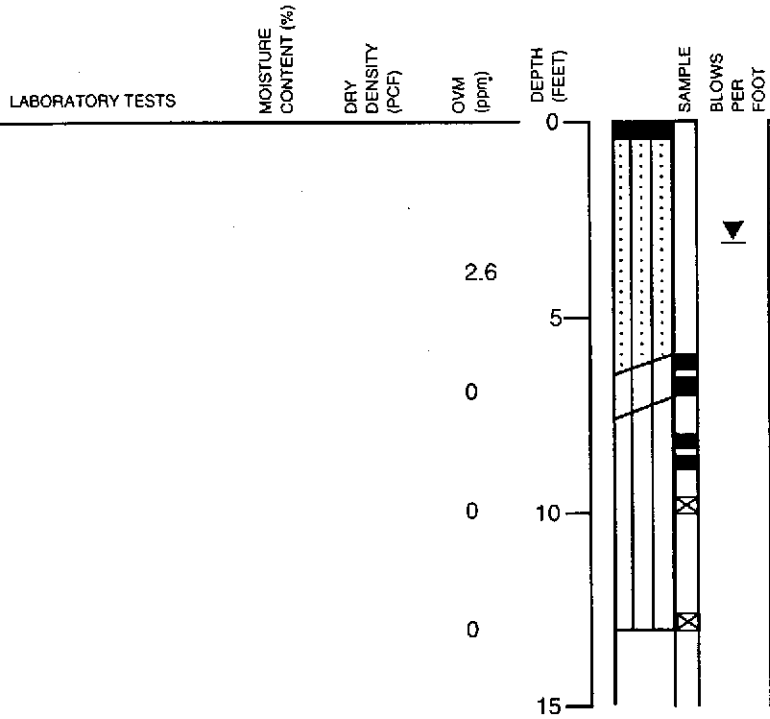
APPROVED

PLATE

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LOG OF TEST BORING SCI-21

EQUIPMENT 2-3/8" Dia. Enviro-core
 DATE DRILLED 5/31/96
 ELEVATION 10.65 Feet



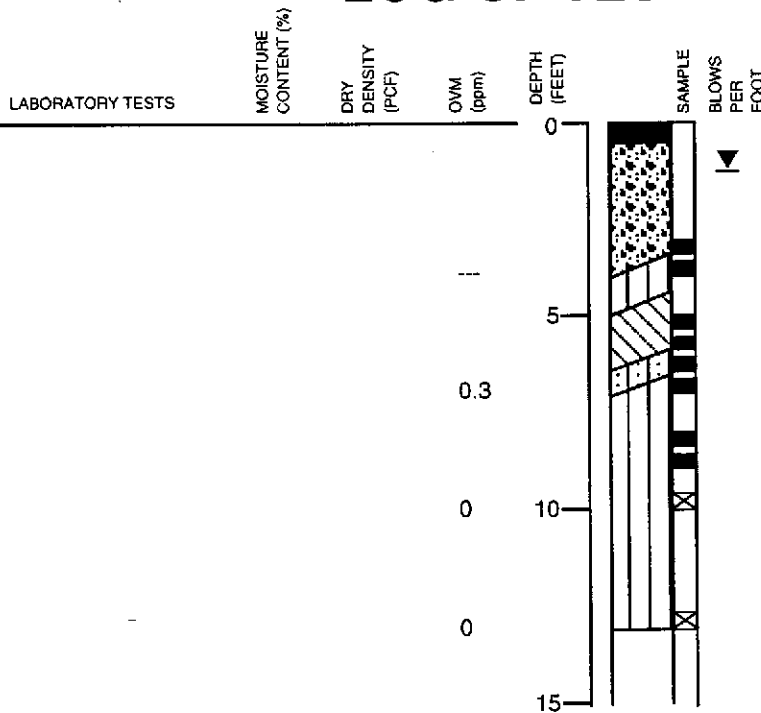
ASPHALTIC CONCRETE 6 inches thick
 BROWN SILTY SAND (SM)
 medium dense, moist
 GROUNDWATER LEVEL AFTER DRILLING

GRAY SANDY SILT (ML)
 medium stiff, wet
 DARK GRAY CLAYEY SILT (ML)
 soft, moist, with shells

Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

LOG OF TEST BORING SCI-22

EQUIPMENT 2-3/8" Dia. Enviro-core
 DATE DRILLED 5/31/96
 ELEVATION 10.32 Feet



ASPHALTIC CONCRETE 6 inches thick
 GROUNDWATER LEVEL AFTER DRILLING
 BROWN SANDY GRAVEL (GW)
 medium dense, moist

GRAY SANDY SILT (ML)
 stiff, moist
 BLACK AND GRAY SILTY CLAY (CL)
 soft to medium stiff, moist
 GRAY SILTY SAND (SM)
 medium dense, wet
 DARK GRAY SANDY SILT (ML)
 soft, moist

Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

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8TH AVENUE STUDY AREA - OAKLAND, CA
 JOB NUMBER 133.005
 DATE 7/12/96
 APPROVED *[Signature]*

PLATE
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LOG OF TEST BORING SCI-23

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/31/96

ELEVATION -----

LABORATORY TESTS

MOISTURE
CONTENT (%)

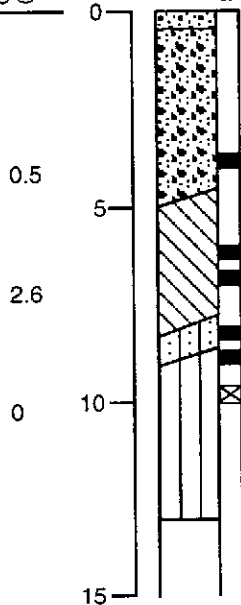
DRY
DENSITY
(PCF)

QVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



CONCRETE - 7 inches thick
 BROWN CLAYEY SANDY GRAVEL (GW)
 medium dense, moist (fill)
 GROUNDWATER LEVEL AFTER DRILLING
 GRAY SANDY CLAY (CL)
 medium stiff, wet, with gravel

GRAY SILTY SAND (SM)
 medium dense, wet
 DARK GRAY CLAYEY SILT (ML)
 soft, moist,

Temporary casing installed in borehole to
 obtain groundwater sample. Casing
 removed and borehole backfilled with neat
 cement grout.

LOG OF TEST BORING SCI-24

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/31/96

ELEVATION -----

LABORATORY TESTS

MOISTURE
CONTENT (%)

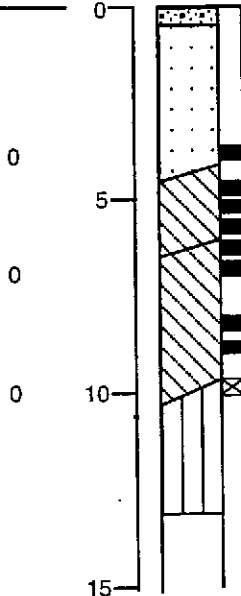
DRY
DENSITY
(PCF)

QVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



CONCRETE - 7 inches thick
 BROWN GRAVELLY SAND (SW)
 loose, wet, (fill)

BROWN-GRAY SANDY CLAY (CL)
 medium stiff, wet, with lenses of clayey sand
 GROUNDWATER LEVEL AFTER DRILLING
 BLACK AND DARK GRAY SILTY CLAY (CL)
 medium stiff, moist, with sand

DARK GRAY CLAYEY SILT (ML)
 soft, moist

Temporary casing installed in borehole to
 obtain groundwater sample. Casing
 removed and borehole backfilled with neat
 cement grout.

Subsurface Consultants

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LOG OF TEST BORING SCI-25

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/31/96

ELEVATION -----

LABORATORY TESTS

MOISTURE
CONTENT (%)

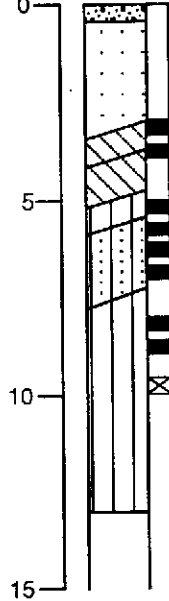
DRY
DENSITY
(PCF)

OVN
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



CONCRETE - 7 inches thick
 LIGHT BROWN GRAVELLY SAND (SW)
 medium dense, moist (fill)
 GREENISH-GRAY SILTY CLAY (CL)
 stiff, moist
 GROUNDWATER LEVEL AFTER DRILLING
 BROWN SILTY CLAY (CL)
 stiff, moist, with sand lenses
 BLACK AND DARK GRAY CLAYEY SILT (ML)
 medium stiff, moist to wet
 Hydrocarbon odor between 6 and 7 feet
 DARK GRAY SILTY SAND (SM)
 medium dense, moist
 DARK GRAY CLAYEY SILT (ML)
 soft, wet, with sand

Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

LOG OF TEST BORING SCI-26

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 5/31/96

ELEVATION -----

LABORATORY TESTS

MOISTURE
CONTENT (%)

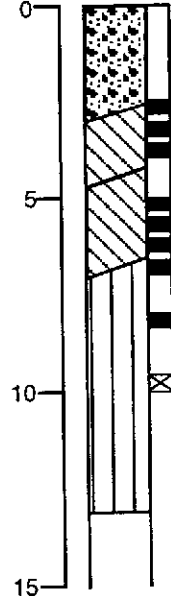
DRY
DENSITY
(PCF)

OVN
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



BROWN SILTY GRAVEL (GW)
 medium dense, wet
 GROUNDWATER LEVEL AFTER DRILLING
 GREENISH-GRAY SILTY CLAY (CL)
 medium stiff, moist to wet, interbedded with silty sand
 GRAY SILTY CLAY (CL/CH)
 soft, moist
 DARK GRAY CLAYEY SILT (ML)
 soft, moist

Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

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[Signature]

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LOG OF TEST BORING SCI-27

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 6/3/96

ELEVATION -----

LABORATORY TESTS

MOISTURE
CONTENT (%)

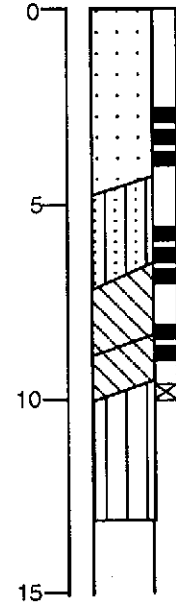
DRY
DENSITY
(PCF)

QVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



BROWN GRAVELLY SAND (SW)
medium dense, moist (fill)

BROWN SILTY SAND (SM)
medium dense, wet, with gravel and brick
fragments (fill)

GROUNDWATER LEVEL AFTER DRILLING
LIGHT BROWN SILTY CLAY (CL)
medium stiff, moist

GREENISH-GRAY SILTY CLAY (CL)
stiff, moist

GRAY CLAYEY SILT (ML)
soft, wet

Temporary casing installed in borehole to
obtain groundwater sample. Casing
removed and borehole backfilled with neat
cement grout.

LOG OF TEST BORING SCI-28

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 6/3/96

ELEVATION -----

LABORATORY TESTS

MOISTURE
CONTENT (%)

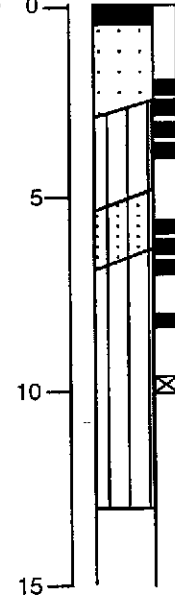
DRY
DENSITY
(PCF)

QVM
(ppm)

DEPTH
(FEET)

SAMPLE

BLOWS
PER
FOOT



ASPHALTIC CONCRETE 6 inches thick
BROWN GRAVELLY SAND (SW)
medium dense, moist (fill)

GREEN AND BROWN CLAYEY SILT (ML)
stiff, moist

LIGHT GRAY SILTY SAND (SM)
medium stiff, moist, very fine-grained sand

DARK GRAY CLAYEY SILT (ML)
soft, moist to wet

GROUNDWATER LEVEL AFTER DRILLING

Temporary casing installed in borehole to
obtain groundwater sample. Casing
removed and borehole backfilled with neat
cement grout.

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PLATE

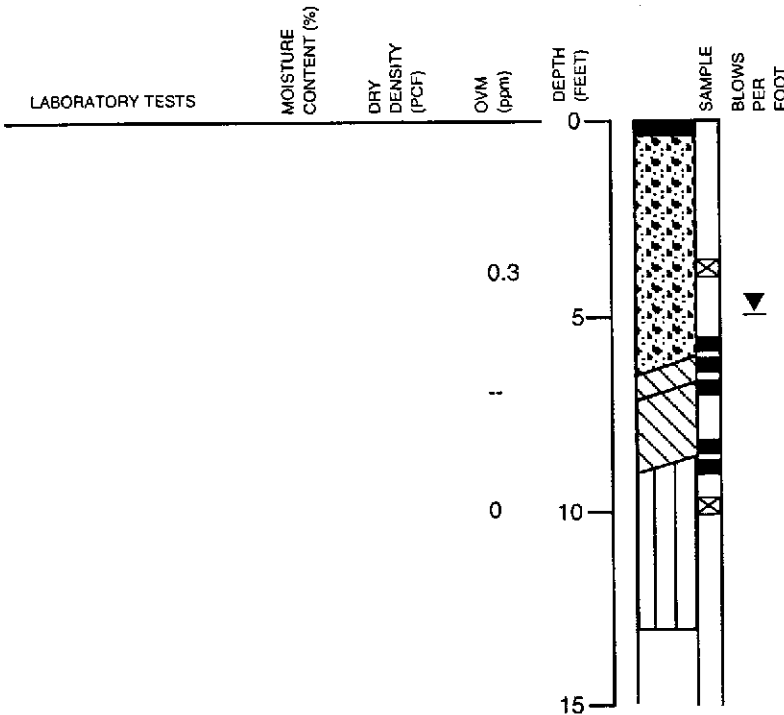
24

LOG OF TEST BORING SCI-29

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 6/3/96

ELEVATION -----



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

GROUNDWATER LEVEL AFTER DRILLING
BLACK AND GRAY SILTY CLAY (CL)
medium stiff, moist
DARK GRAY SILTY CLAY (CL)
medium stiff, moist
DARK GRAY CLAYEY SILT (ML)
soft, wet

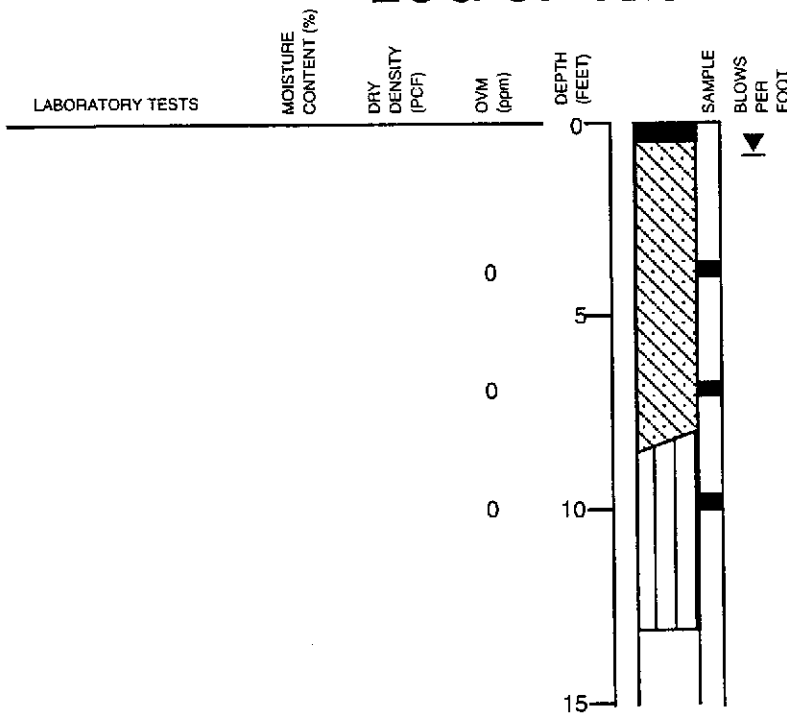
Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

LOG OF TEST BORING SCI-30

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 6/3/96

ELEVATION -----



ASPHALTIC CONCRETE 6 inches thick
GROUNDWATER LEVEL AFTER DRILLING
GRAY CLAYEY SAND (SC)
dense, wet, with gravel (fill)

GRAY CLAYEY SILT (ML)
soft, wet

Temporary casing installed in borehole to obtain groundwater sample. Casing removed and borehole backfilled with neat cement grout.

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LOG OF TEST BORING SCI-31

EQUIPMENT 2-3/8" Dia. Enviro-core

DATE DRILLED 6/3/96

ELEVATION -----

LABORATORY TESTS

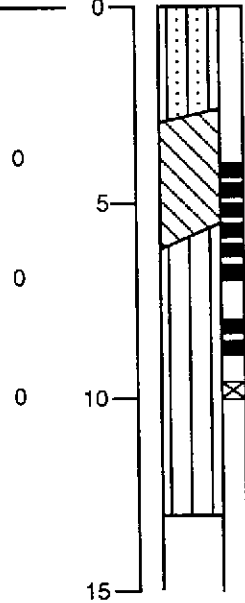
MOISTURE
CONTENT (%)

DRY
DENSITY
(PCF)

OMV
(ppm)

DEPTH
(FEET)

SAMPLE
BLOWS
PER
FOOT



BROWN SILTY SAND (SM)
medium dense, moist (fill)
GROUNDWATER LEVEL AFTER
DRILLING
GRAY AND BLACK SILTY CLAY (CL)
medium stiff, moist
Hydrocarbon odor at 6 feet
DARK GRAY CLAYEY SILT (ML)
soft, wet

Temporary casing installed in borehole to
obtain groundwater sample. Casing
removed and borehole backfilled with neat
cement grout.

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PLATE

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| GENERAL SOIL CATEGORIES | | | SYMBOLS | TYPICAL SOIL TYPES |
|--|---|--------------------------------------|---|--|
| COARSE GRAINED SOILS More than half is larger than No. 200 sieve | GRAVEL More than half coarse fraction is larger than No. 4 sieve 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 sieve 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 sieve | 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
133.005

DATE
7/12/96

APPROVED

PLATE

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APPENDIX A
LIST OF REFERENCES

**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.

Clayton Environmental Consultants, *Limited Subsurface Investigation at the Keep on Trucking Site*, July 26, 1995.

Clayton Environmental Consultants, *Limited Subsurface Investigation, Quarterly Sampling, and Free Phase Product Recovery at the Keep on Trucking Site*, July 25, 1995.

Clayton Environmental Consultants, *Work Plan for Limited Subsurface Investigation at the Keep on Trucking Site*, February 21, 1995.

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

Cummings Environmental, *Post Closure Report for Midland Ross Corporation Superstrut Division, 845 Embarcadero Road, Oakland, California*, August 3, 1987.

ERM-West, Inc., *UST Tank Removal*, December 7, 1994.

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.

Uribe & Associates, *Report of Quarterly Groundwater Monitoring at Keep on Trucking*, February 9, 1994.

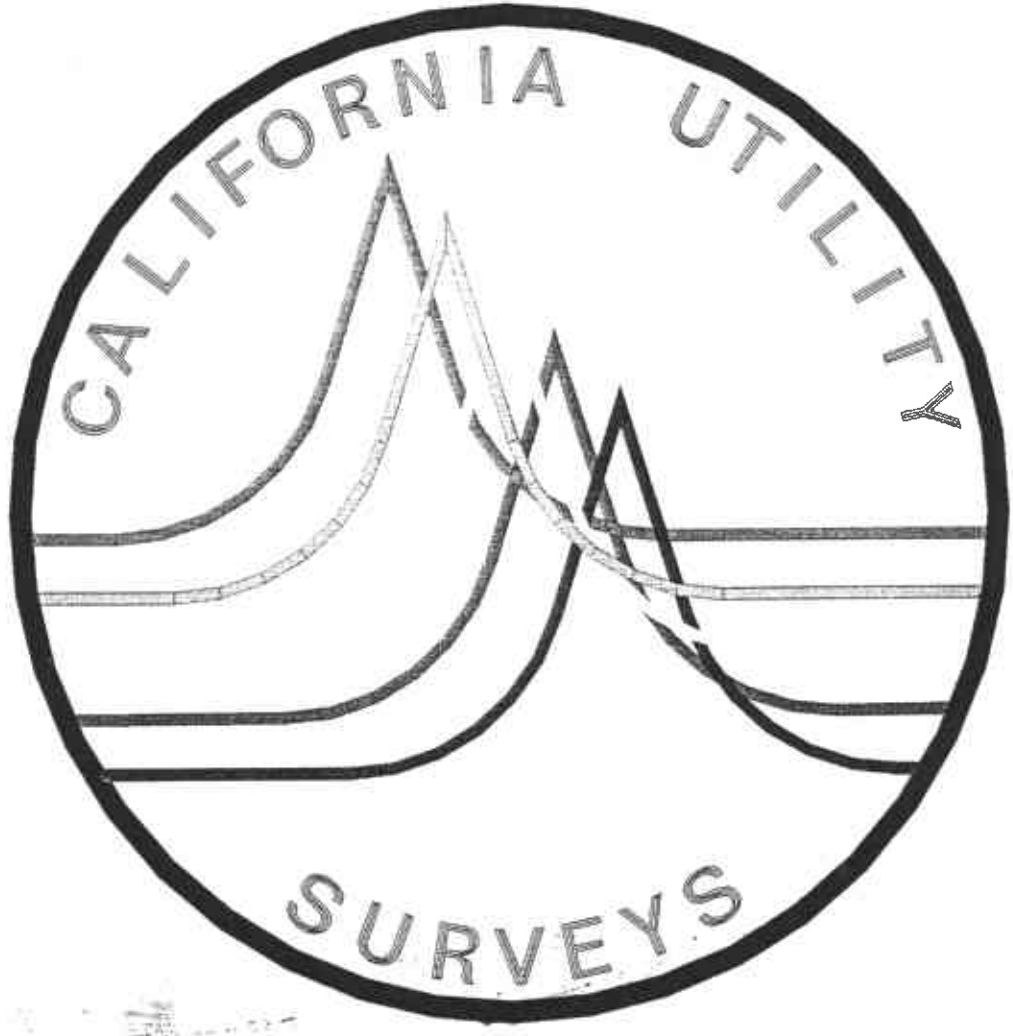
Uribe & Associates, *Report of the Source Area Primary Pathway Investigation at Keep on Trucking, 370 8th Avenue, Oakland, California*, March 30 1993.

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
C.U. SURVEYS REPORT



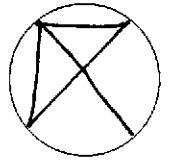


CALIFORNIA UTILITY SURVEYS

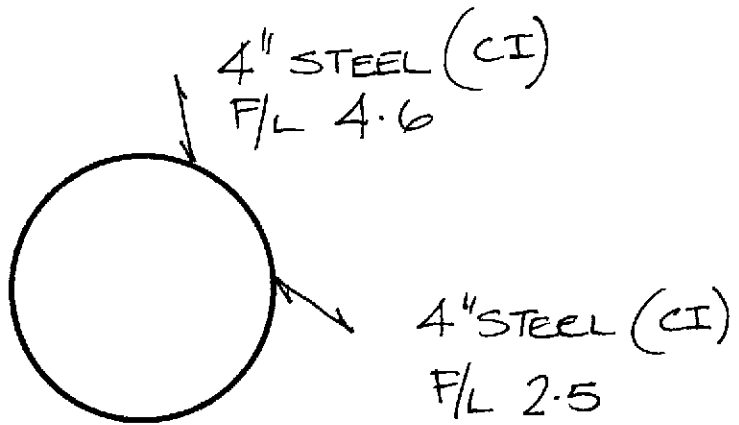
MAGNETIC NORTH

POINT No. _____ DATE 5-1-96

TYPE: MH?



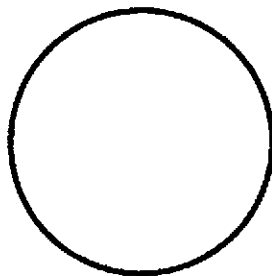
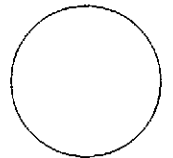
Oily LIQUID LEVEL
AT 8.0'



POINT No. _____ DATE _____

TYPE: _____

MAGNETIC NORTH



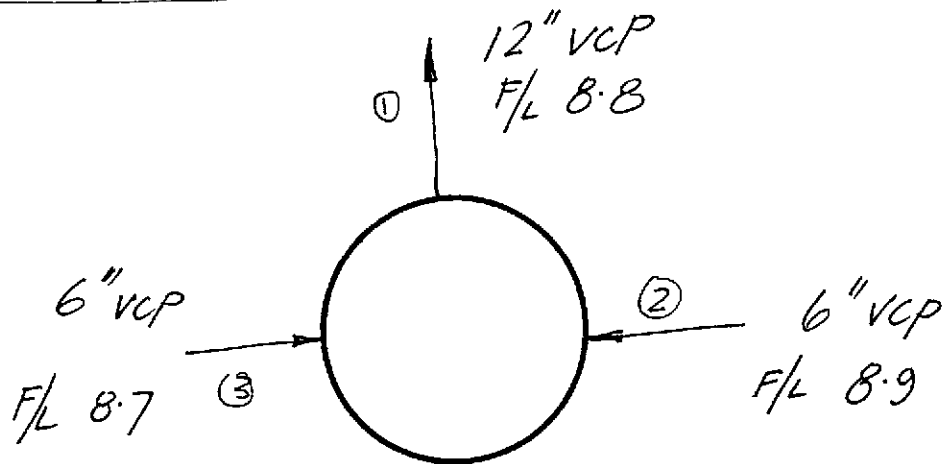
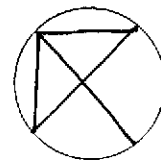


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SSMH 1

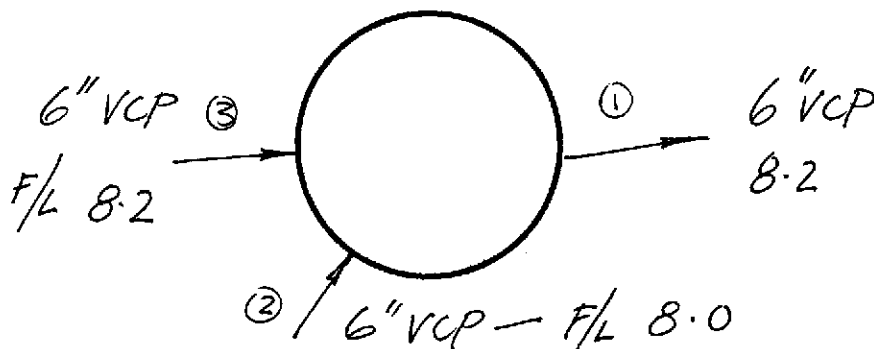
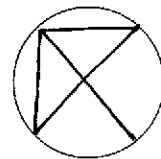


EMBAR

MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SSMH 2



EMBAR

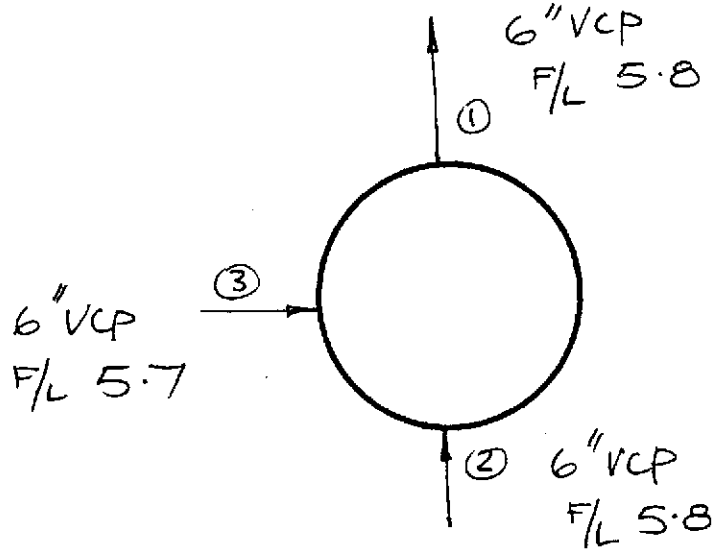
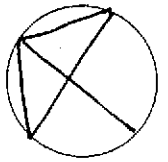


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SSMH 3

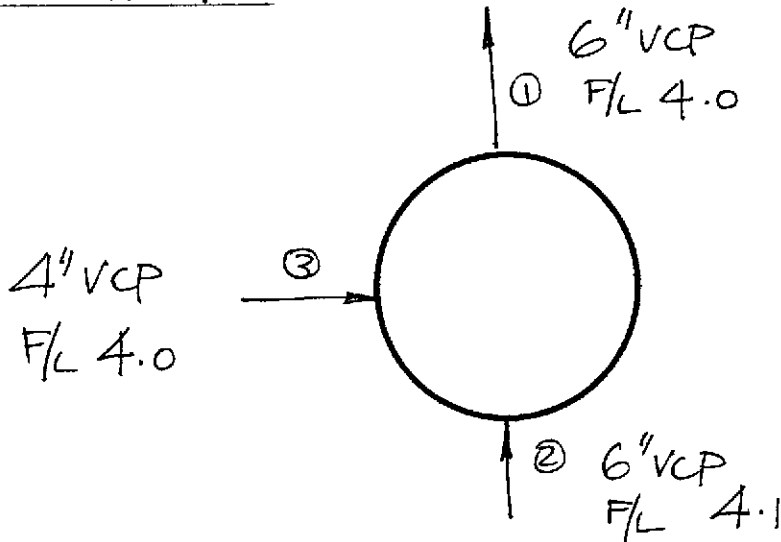
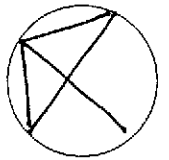


8th AVE

MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SSMH 4



8th AVE

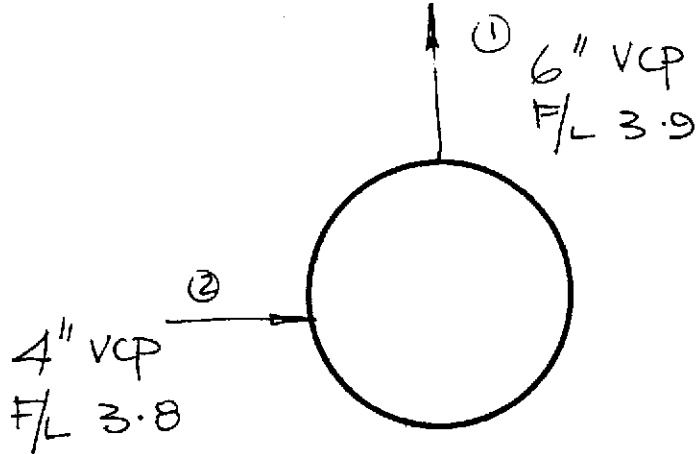
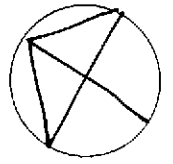


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SSMH 5

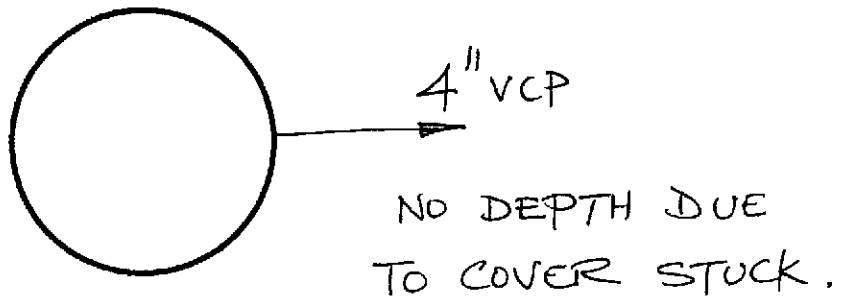
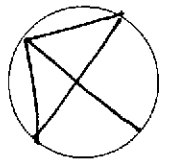


8th AVE (ADJ TO POLE 'E')

MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SSCO 1.



8th AVE (ADJ TO POLE 'E')

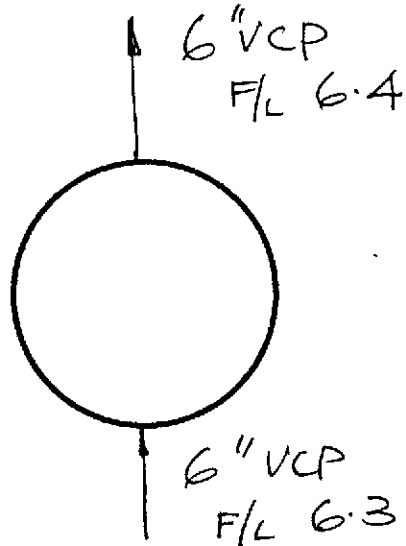
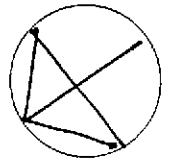


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-6-96

TYPE: SSMH 6

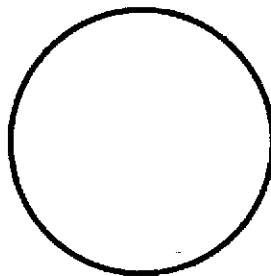
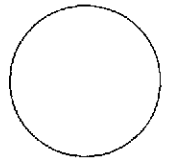


605 EMBARCADERO. (WEST SIDE BLDG #107)

MAGNETIC NORTH

POINT No. DATE

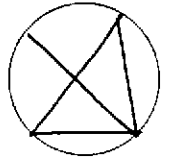
TYPE: _____





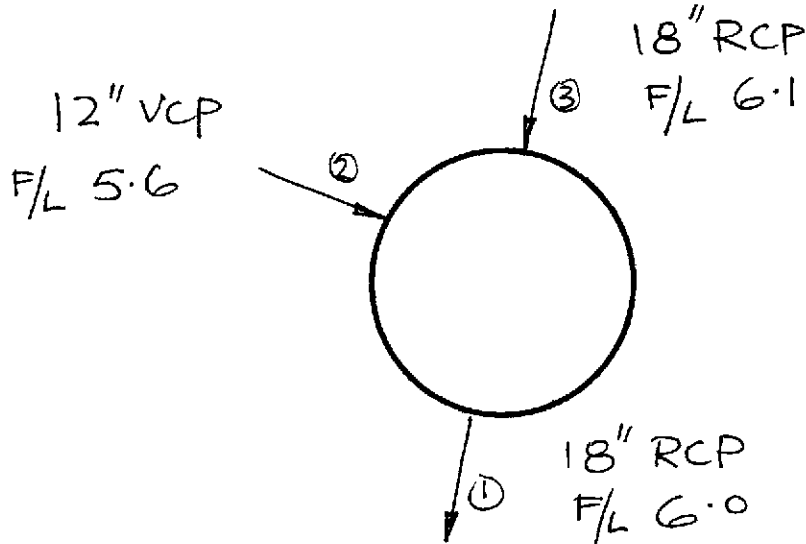
CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH



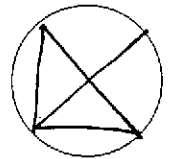
POINT No. DATE 4-30-96

TYPE: SDMH 1



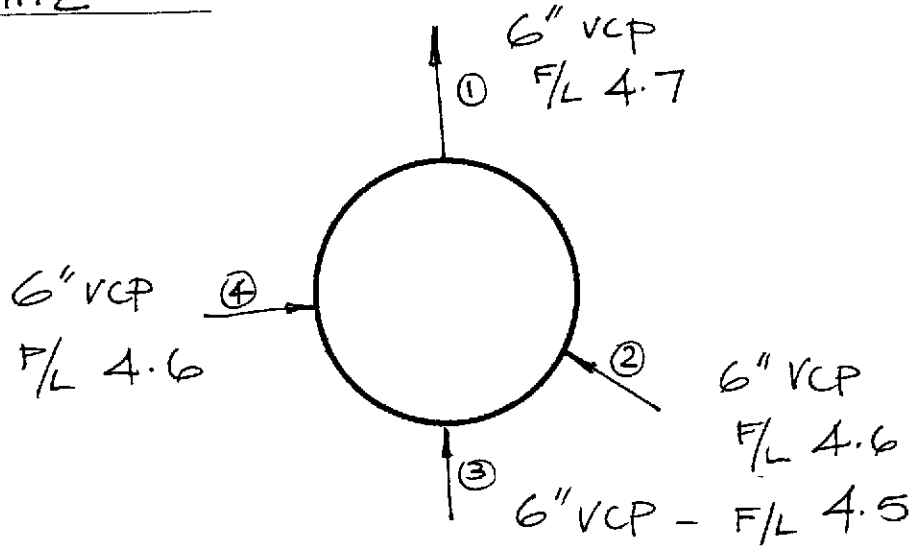
EMBAR

MAGNETIC NORTH



POINT No. DATE 4-30-96

TYPE: SDMH 2

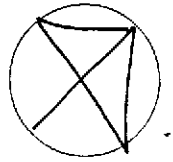


EMBAR



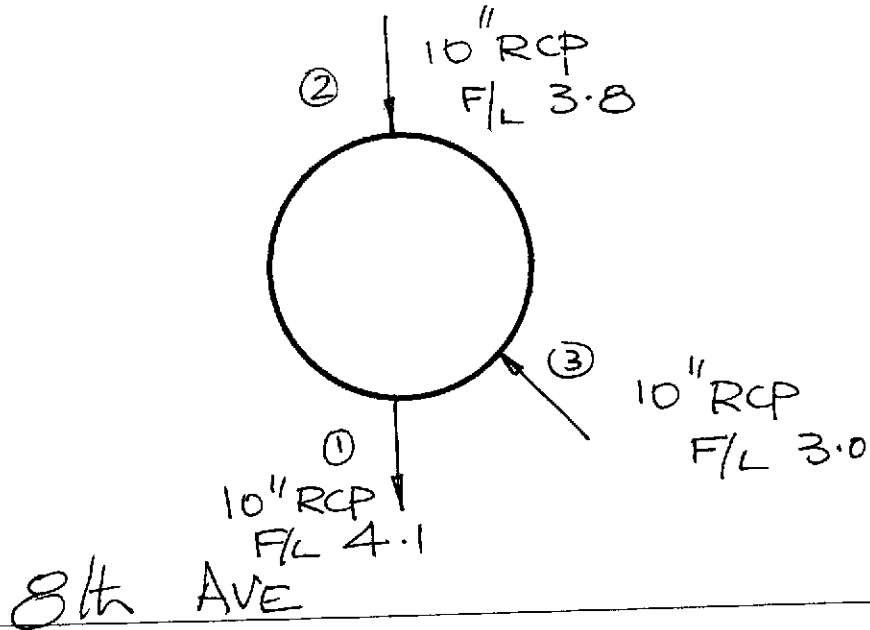
CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH



POINT No. DATE 4-30-96

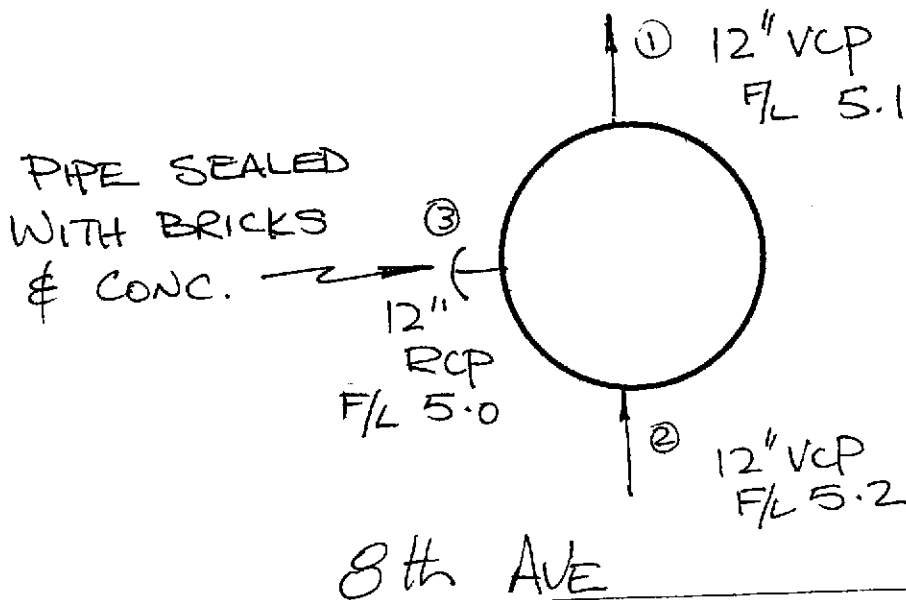
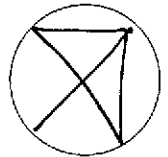
TYPE: SDMH 3



MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SDMH 4



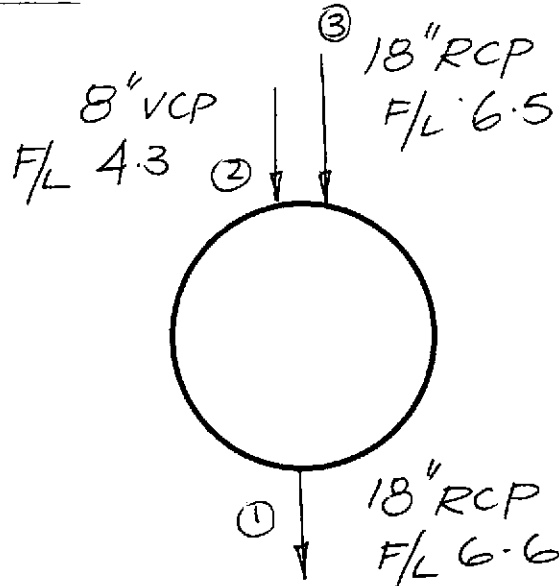
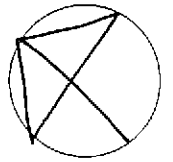


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDMH 5

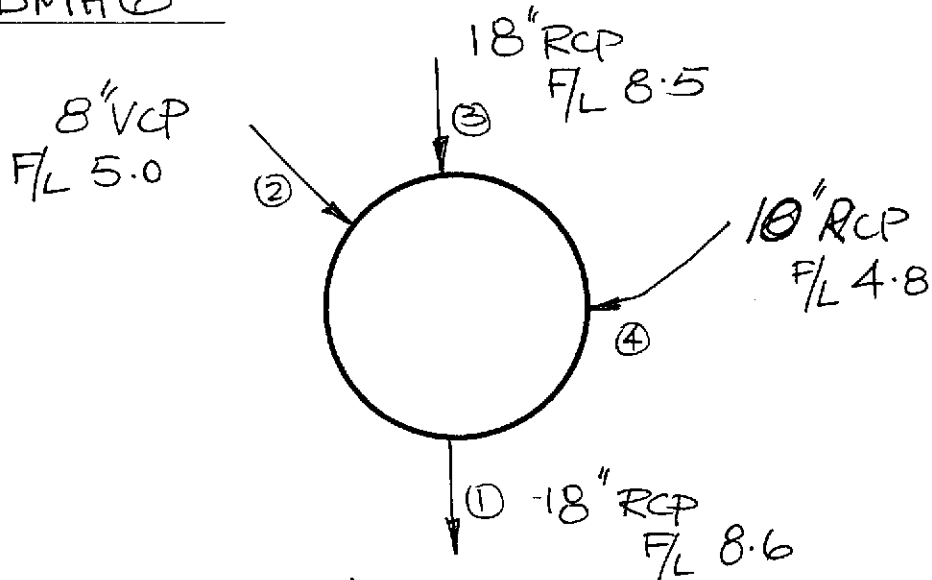
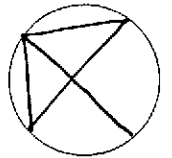


8th AVE.

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDMH 6



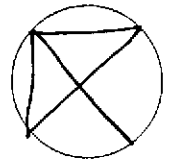
8th AVE



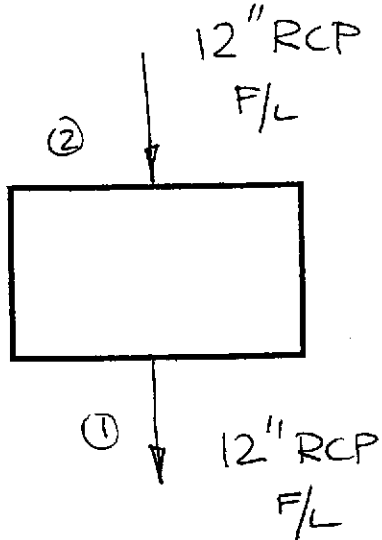
CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 4-30-96



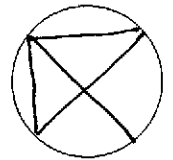
TYPE: SDCB 1



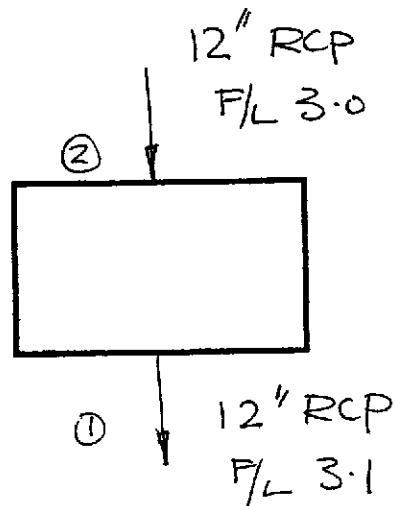
EMBAR

MAGNETIC NORTH

POINT No. DATE 4-30-96



TYPE: SDCB 2



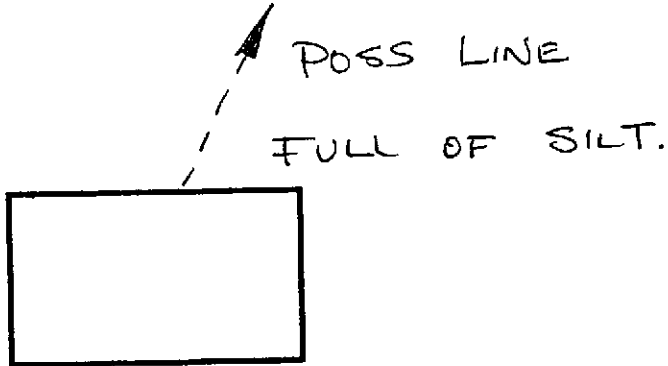
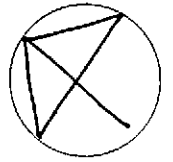


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 4-30-96

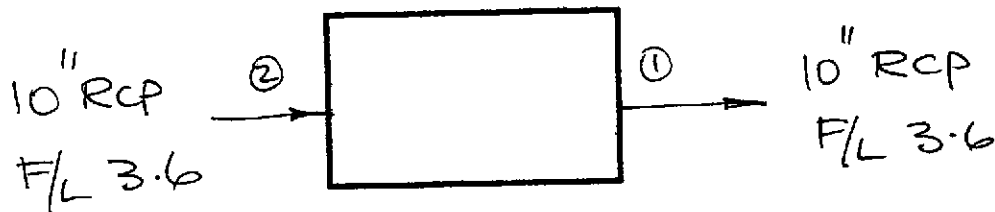
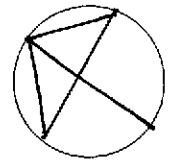
TYPE: SDCB 4



MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SDCB 5



8th AVE

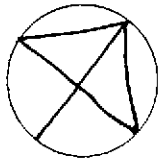


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SDCB6



10" RCP
NO DEPTH (FULL OF SILT).

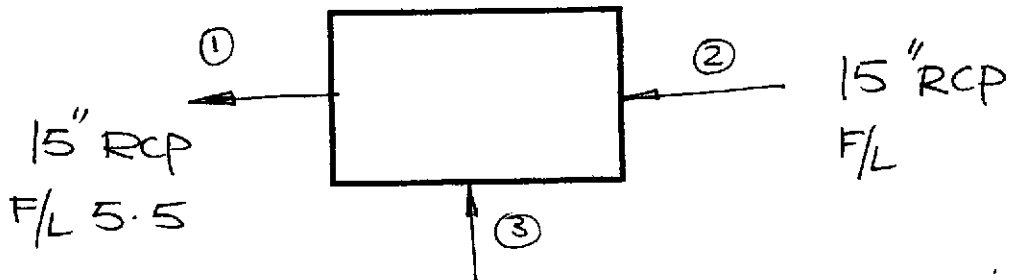
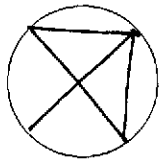


8th AVE

MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SDCB7



8th AVE

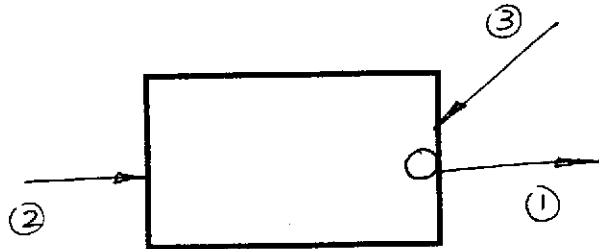
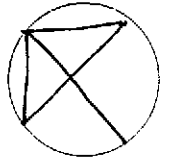


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 4-30-96

TYPE: SDCB 8

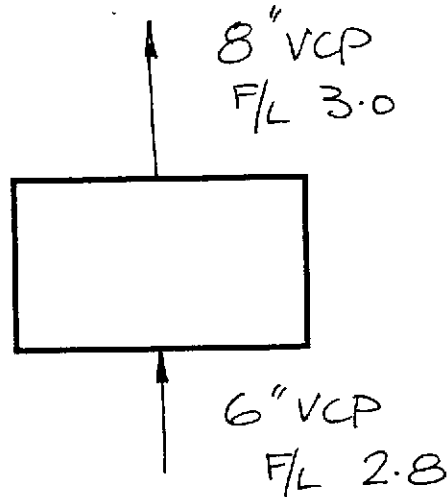
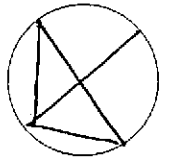


8th AVE

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDCB 9



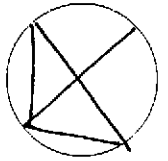
8th AVE (ADJ) WAREHOUSE #2



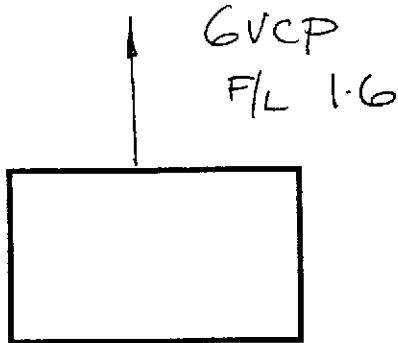
CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-1-96



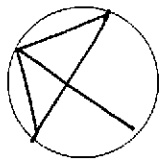
TYPE: SDCB 10



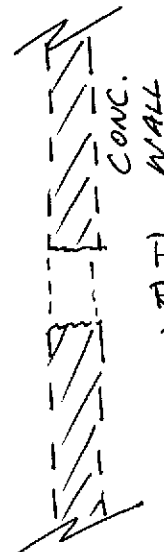
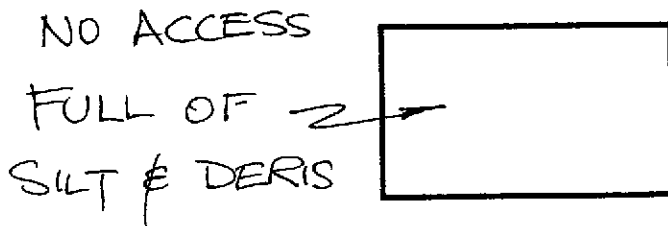
8th AVE (REAR OF WAREHOUSE #2)

MAGNETIC NORTH

POINT No. DATE 5-1-96



TYPE: SD (SUMP) CB 11



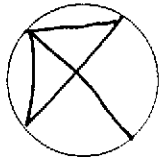
8th AVE.



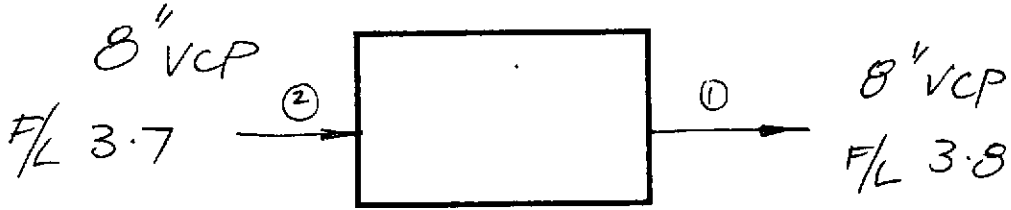
CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-1-96



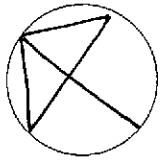
TYPE: SDCB 12



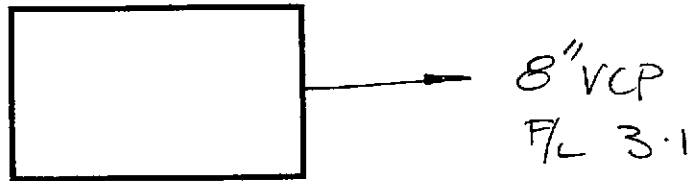
8th AVE.

MAGNETIC NORTH

POINT No. DATE 5-1-96



TYPE: SDCB 13

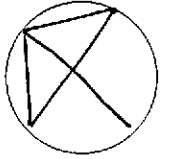


8th AVE



CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH



POINT No.

DATE 5-1-96

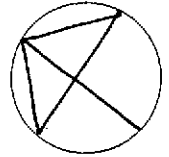
TYPE:

SDCB 14



8th AVE

MAGNETIC NORTH

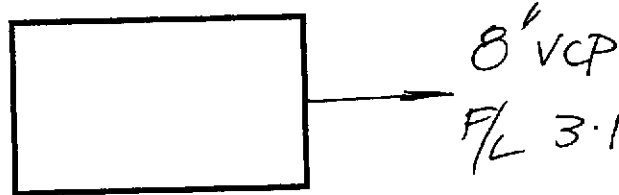


POINT No.

DATE 5-1-96

TYPE:

SDCB 15



8th AVE

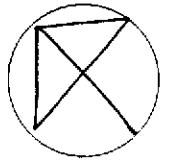


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDCB 16



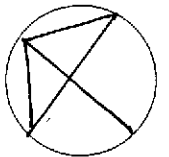
NO ACCESS
UNDER WOOD
STOCK PILE.

8th AVE (ADJ TO MIDDLE FENCE LINE)

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDCB 17



NOT LOCATED!
(MAY NOT EXIST)

THOUGHT TO BE UNDER
STEEL STOCK PILE.

8th AVE

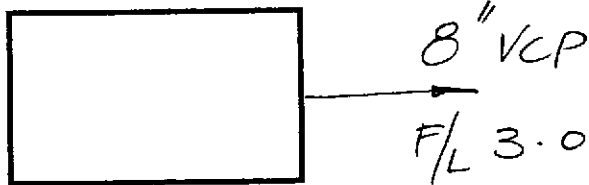
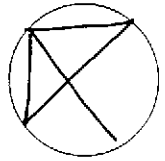


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDCB 18

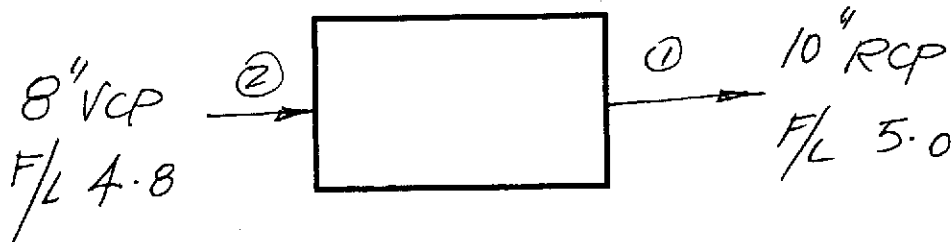
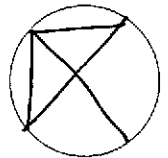


8th AVE (ADJ TO CORNER IN FENCE LINE)

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDCB 19



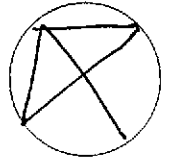
8th AVE



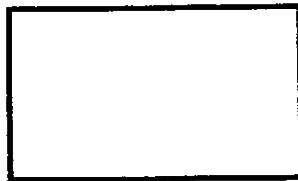
CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-1-96



TYPE: SDCB 20

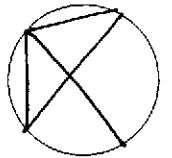


NO ACCESS
FULL OF
WATER & SILT.

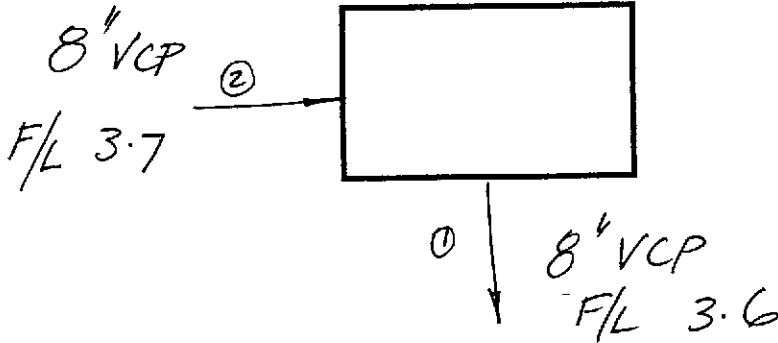
8th AVE

MAGNETIC NORTH

POINT No. DATE 5-1-96



TYPE: SDCB 21



8th AVE

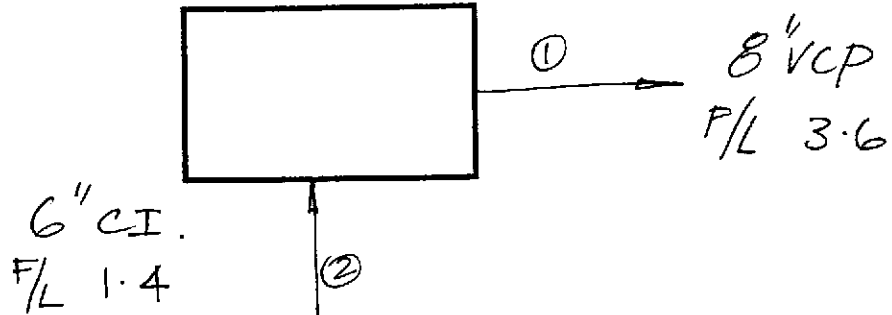
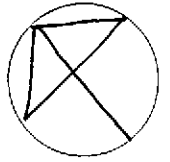


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDCB 22

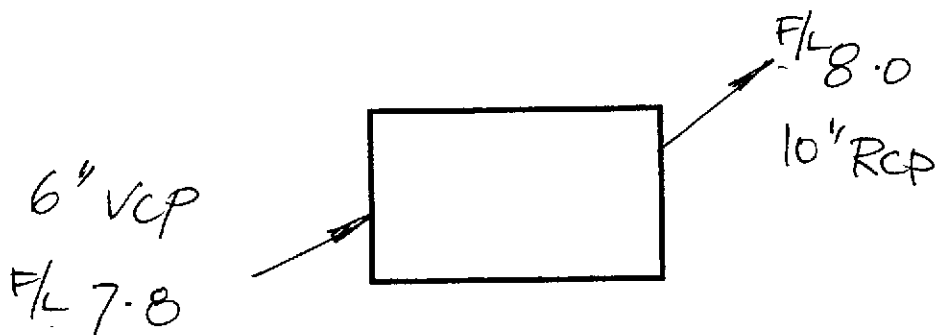
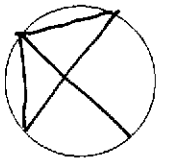


8th AVE

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDCB 23



8th AVE

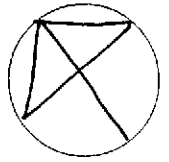


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDCB 24



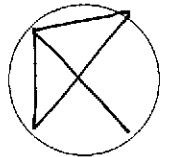
8" VCP
F/L 3.4

9th AVE (ADJ TO PLAQUE 12')

MAGNETIC NORTH

POINT No. DATE 5-1-96

TYPE: SDCB 25



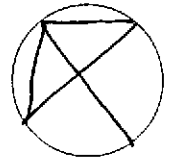
FULL OF WATER
NO PIPES
LOCATED.

8th AVE



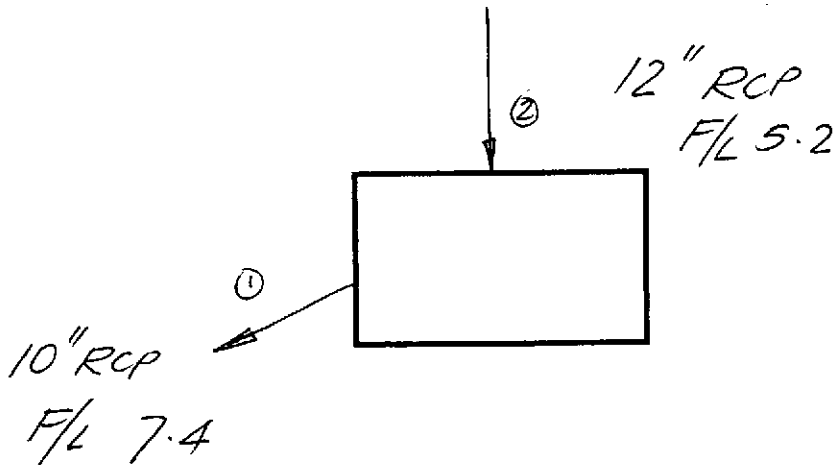
CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH



POINT No. DATE 5-1-96

TYPE: SDCB 26



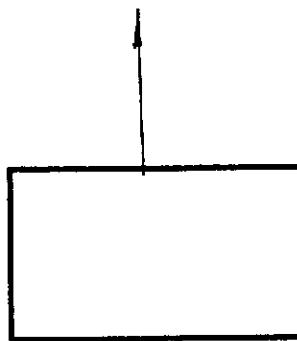
9th AVE

MAGNETIC NORTH



POINT No. DATE 5-1-96

TYPE: SDCB 27



7th AVE (BLDG. H 231)

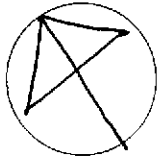


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-6-96

TYPE: SDCB 28



WATER LEVEL
@ 5.6.
BOTTOM @ 6.4

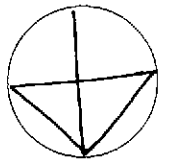
↓ POSSIBLE OUTFALL
(NOT LOCATED)

BLDG H107 (WEST SIDE OF PARKING AREA)

MAGNETIC NORTH

POINT No. DATE 5-6-96

TYPE: SDCB 29



① ↑ 12" RCP
F/L 5.2

② ↙ 12" RCP
F/L 5.0

WEST OF BLDG H107

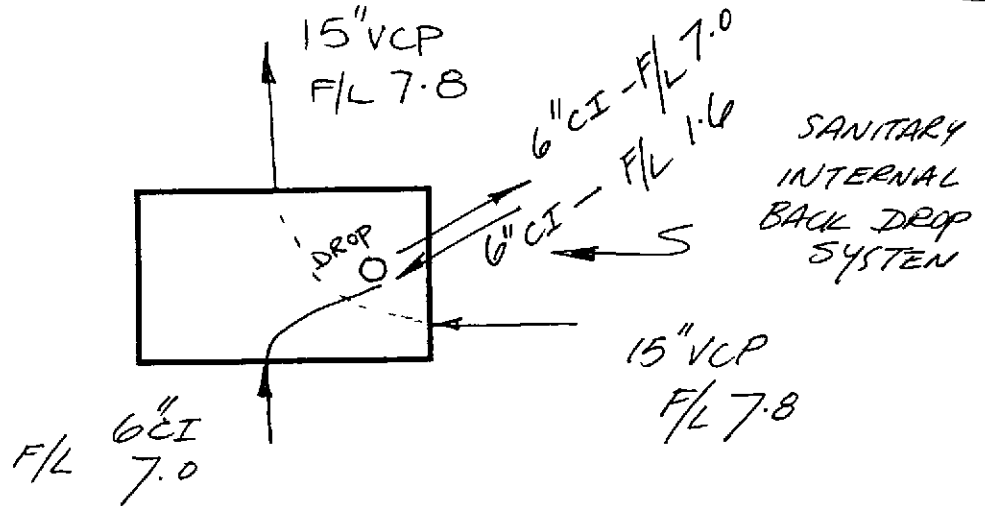
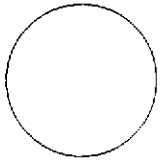


CALIFORNIA UTILITY SURVEYS

MAGNETIC NORTH

POINT No. DATE 5-6-96

TYPE: SD & SS SUMP

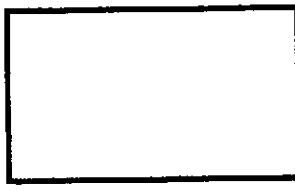
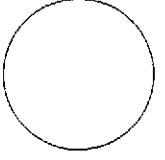


8th Ave (Adj BLDG. 213 & 228)

MAGNETIC NORTH

POINT No. DATE

TYPE: _____



APPENDIX C

**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

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171 12th Street
Suite 201
Oakland, CA 94608

Date: 04-JUN-96
Lab Job Number: 125558
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

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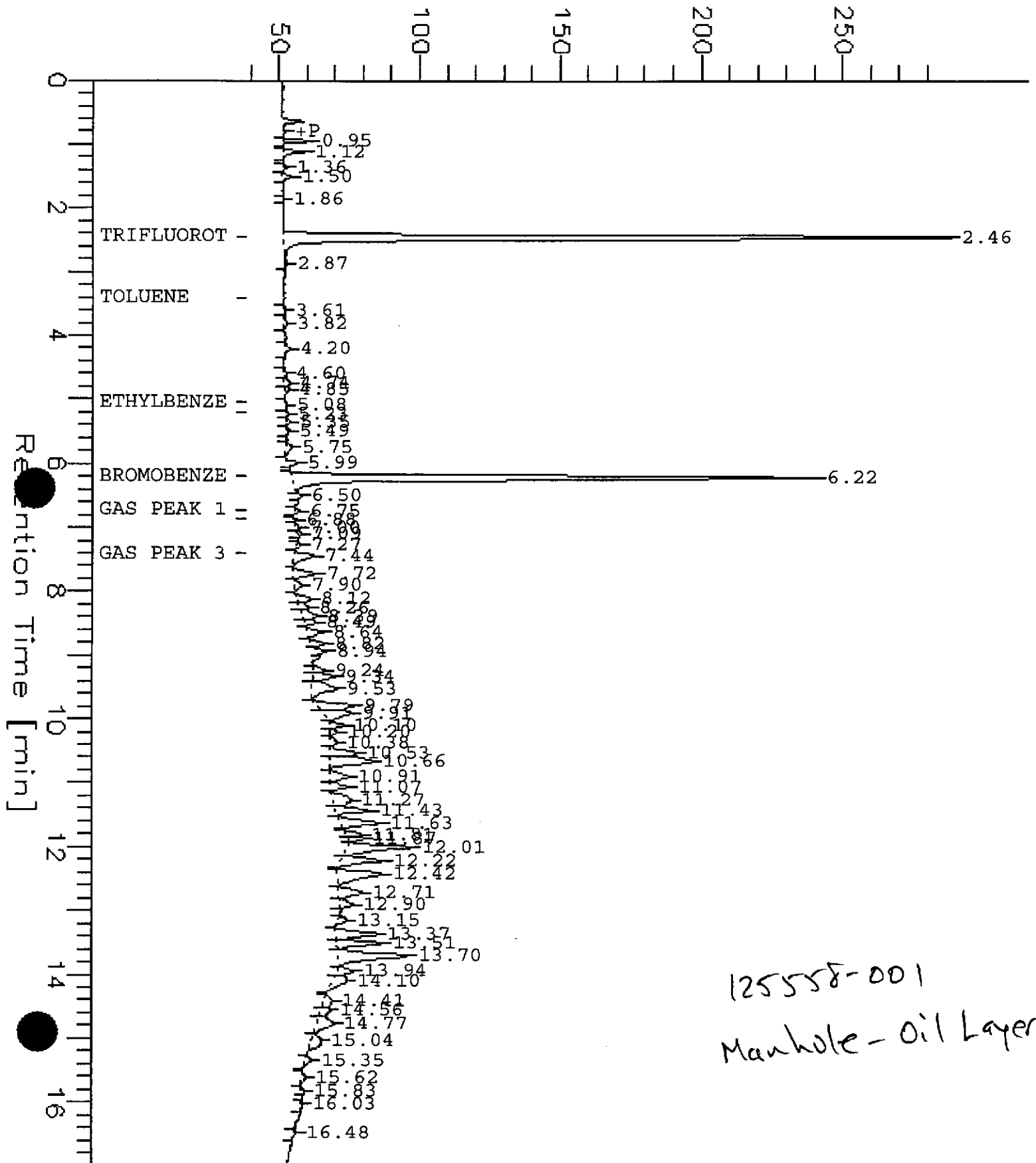
FileName : G:\GC04\139J036.raw
Start Time : 0.00 min
Scale Factor: -1

End Time : 17.00 min
Plot Offset: 39 mV

Date : 5/19/96 6:25 AM
Low Point : 38.63 mV
Plot Scale: 250 mV

Page 1 of 1
High Point : 288.63 mV

Response [mV]





TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

| Sample # | Client ID | Batch # | Sampled | Extracted | Analyzed | Moisture |
|------------|-------------------|---------|----------|-----------|----------|----------|
| 125558-002 | MANHOLE-H2O LAYER | 27666 | 05/13/96 | 05/19/96 | 05/19/96 | |

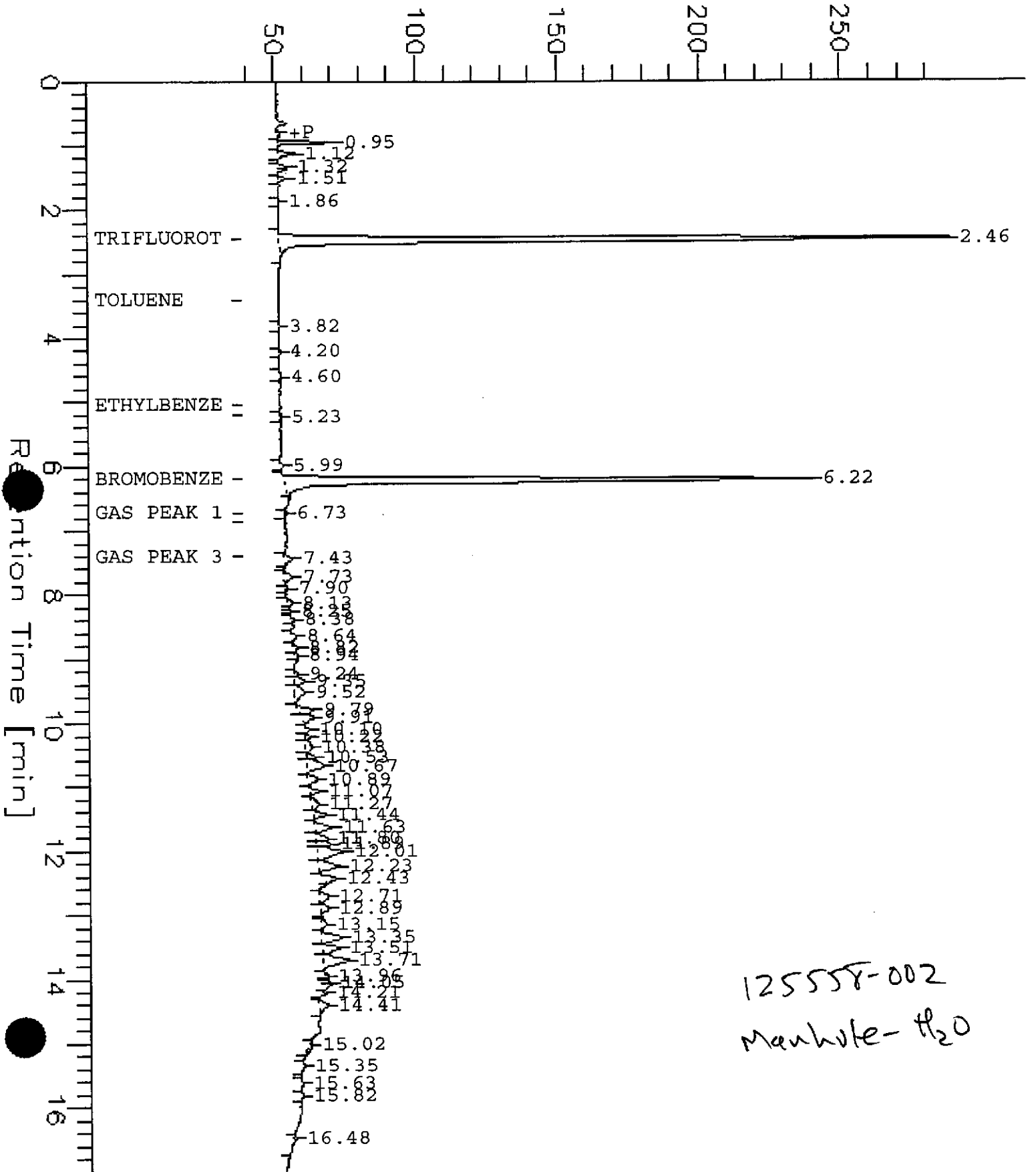
Matrix: Water

| Analyte | Units | 125558-002 |
|------------------|-------|------------|
| DiIn Fac: | | 50 |
| Gasoline | ug/L | 4500 YH |
| Surrogate | | |
| Trifluorotoluene | %REC | 93 |
| Bromobenzene | %REC | 94 |

Y: Sample exhibits fuel pattern which does not resemble standard
H: Heavier hydrocarbons than indicated standard

125558-002

Response [mV]



125558-002
Menthole-H₂O



Lab #: 125558

BATCH QC REPORT

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TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27666
Units: ug/L
Diln Fac: 1

Prep Date: 05/18/96
Analysis Date: 05/18/96

MB Lab ID: QC22011

| Analyte | Result | | |
|------------------|--------|-----------------|--|
| Gasoline | <50 | | |
| Surrogate | %Rec | Recovery Limits | |
| Trifluorotoluene | 99 | 65-135 | |
| Bromobenzene | 104 | 65-135 | |



Lab #: 125558

BATCH QC REPORT

Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27666
Units: ug/L
Diln Fac: 1

Prep Date: 05/18/96
Analysis Date: 05/18/96

LCS Lab ID: QC22012

| Analyte | Result | Spike Added | %Rec # | Limits |
|------------------|--------|-------------|--------|--------|
| Gasoline | 2005 | 2000 | 100 | 75-125 |
| Surrogate | %Rec | Limits | | |
| Trifluorotoluene | 100 | 65-135 | | |
| Bromobenzene | 100 | 65-135 | | |

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

Lab #: 125558

BATCH QC REPORT

Page 1 of 1

| TVH-Total Volatile Hydrocarbons | |
|-------------------------------------|--------------------------------------|
| Client: Subsurface Consultants | Analysis Method: CA LUFT (EPA 8015M) |
| Project#: 133.005 | Prep Method: EPA 5030 |
| Location: KOT | |
| MATRIX SPIKE/MATRIX SPIKE DUPLICATE | |
| Field ID: ZZZZZZ | Sample Date: 05/08/96 |
| Lab ID: 125496-009 | Received Date: 05/08/96 |
| Matrix: Water | Prep Date: 05/18/96 |
| Batch#: 27666 | Analysis Date: 05/18/96 |
| Units: ug/L | |
| Diln Fac: 1 | |

MS Lab ID: QC22014

| Analyte | Spike Added | Sample | MS | %Rec # | Limits |
|------------------|-------------|--------|------|--------|--------|
| Gasoline | 2000 | <50.00 | 2075 | 104 | 75-125 |
| Surrogate | %Rec | Limits | | | |
| Trifluorotoluene | 104 | 65-135 | | | |
| Bromobenzene | 103 | 65-135 | | | |

MSD Lab ID: QC22015

| Analyte | Spike Added | MSD | %Rec # | Limits | RPD # | Limit |
|------------------|-------------|--------|--------|--------|-------|-------|
| Gasoline | 2000 | 2069 | 104 | 75-125 | 0 | <35 |
| Surrogate | %Rec | Limits | | | | |
| Trifluorotoluene | 105 | 65-135 | | | | |
| Bromobenzene | 105 | 65-135 | | | | |

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

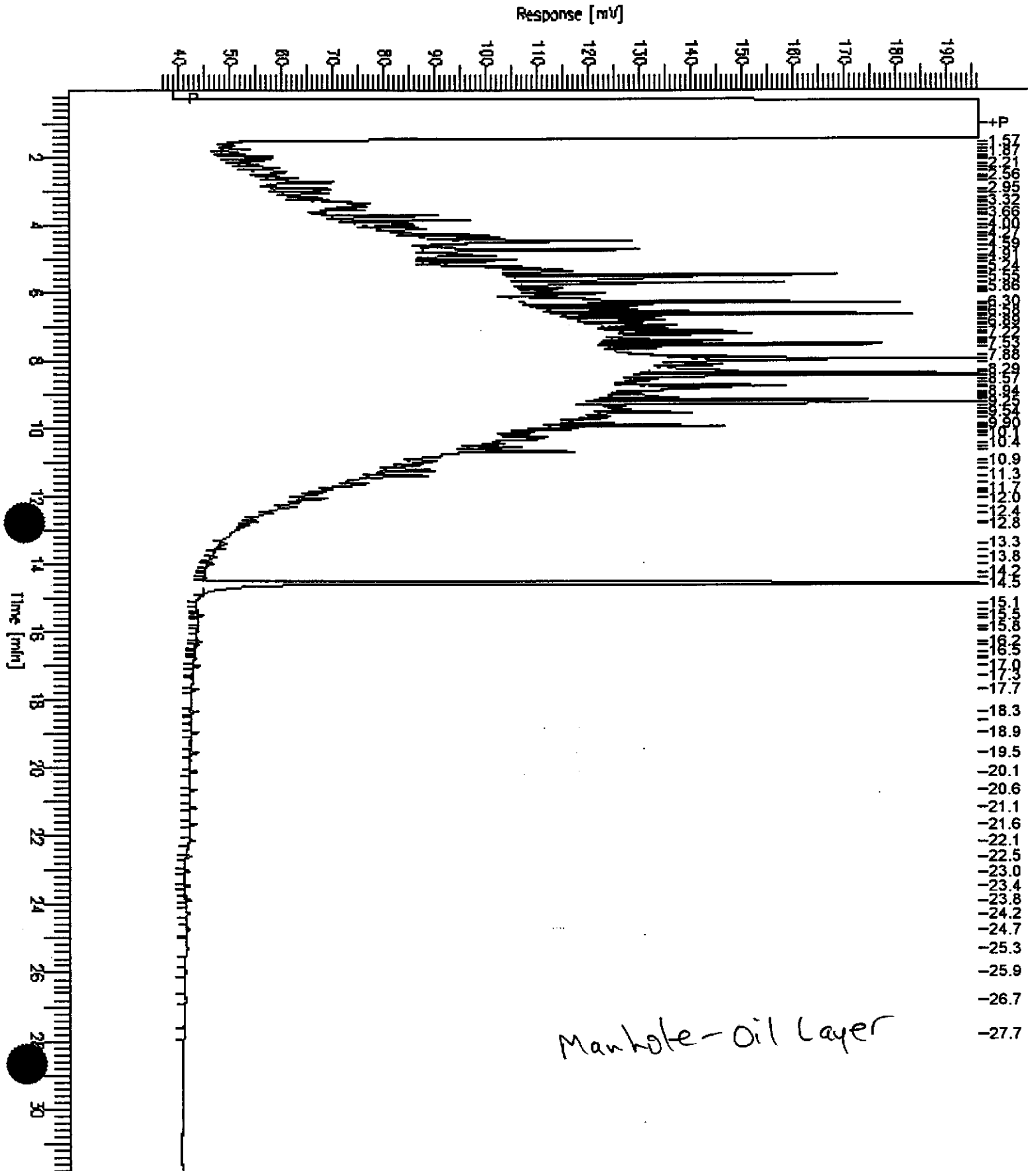
Spike Recovery: 0 out of 2 outside limits

GC15 Channel A TEH

Sample Name : S,125558-001
FileName : C:\GC15\CHB\141B004.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Factor : 0.0

End Time : 31.91 min
Plot Offset: 37 mV

Sample #: FINGERPRINT
Date : 5/19/96 02:55 PM
Time of Injection: 5/19/96 02:07 PM
Low Point : 36.51 mV
Plot Scale: 159.8 mV
Page 1 of 1
High Point : 196.29 mV





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 |
|------------|-------------------|---------|----------|-----------|----------|----------|
| 125558-002 | MANHOLE-H2O LAYER | 27638 | 05/13/96 | 05/16/96 | 05/16/96 | |

Matrix: Water

| Analyte | Units | 125558-002 |
|-------------------|-------|------------|
| Diln Fac: | | 100 |
| Diesel C12-C22 | ug/L | 720000 |
| Motor Oil C22-C50 | ug/L | 34000 YL |
| Surrogate | | |
| Hexacosane | %REC | DO |

DO: Surrogate diluted out

Y: Sample exhibits fuel pattern which does not resemble standard

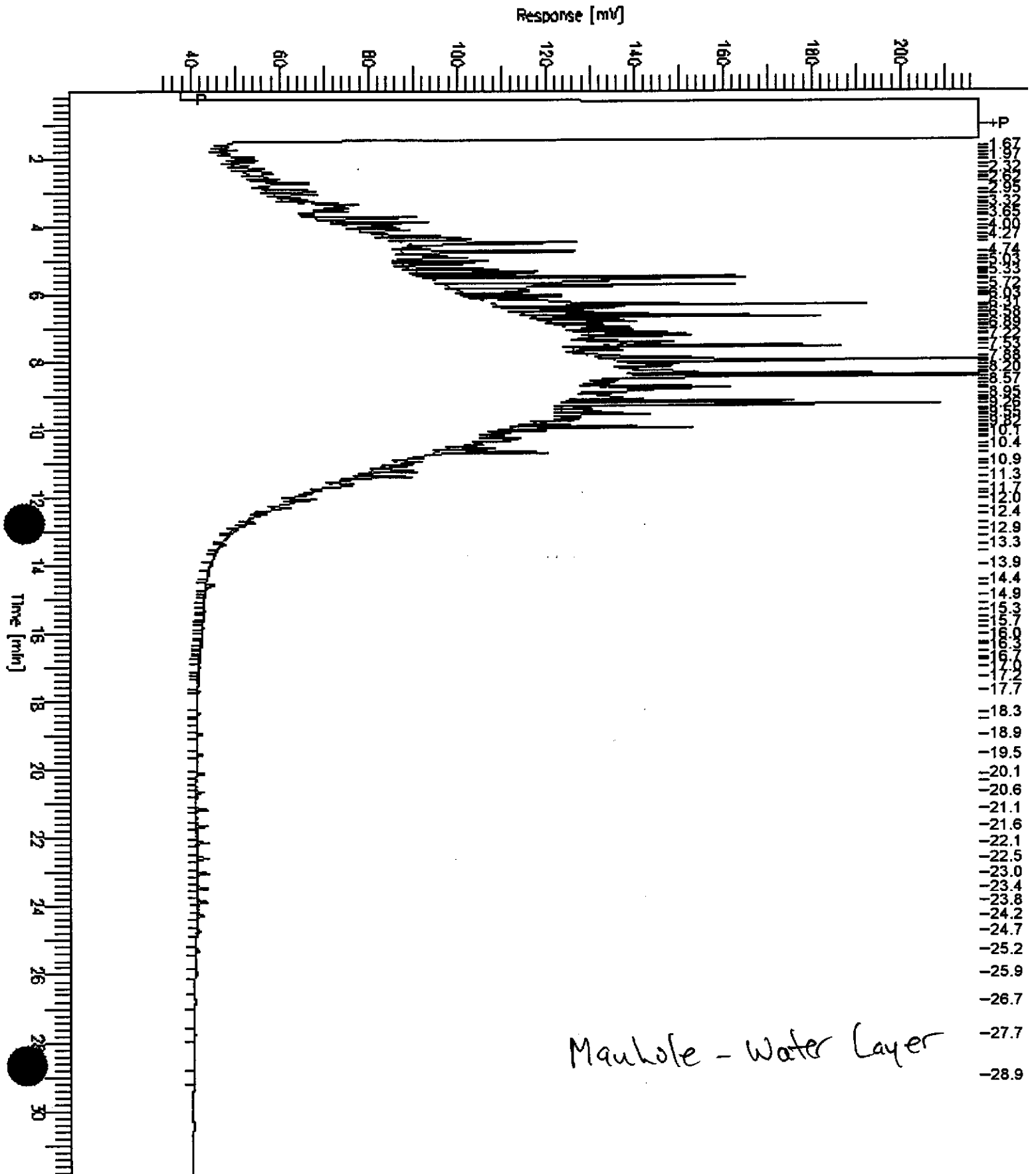
L: Lighter hydrocarbons than indicated standard

GC15 Channel A TEH

Sample Name : S,125558-002,27638
FileName : C:\GC15\CHB\138B032.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min
Factor : 0.0

End Time : 31.91 min
Plot Offset: 33 mV

Sample #: 500:250
Date : 5/19/96 11:02 AM
Time of Injection: 5/18/96 04:37 PM
Low Point : 33.46 mV
High Point : 217.79 mV
Plot Scale: 184.3 mV





Lab #: 125558

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

METHOD BLANK

Matrix: Water
Batch#: 27638
Units: ug/L
Diln Fac: 1

Prep Date: 05/16/96
Analysis Date: 05/17/96

MB Lab ID: QC21895

| Analyte | Result | | |
|----------------|--------|--|-----------------|
| Diesel C12-C22 | <50 | | |
| Surrogate | %Rec | | Recovery Limits |
| Hexacosane | 100 | | 60-140 |



Lab #: 125558

BATCH QC REPORT

Page 1 of 1

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#: 27638
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/16/96
 Analysis Date: 05/17/96

BS Lab ID: QC21896

| Analyte | Spike Added | BS | %Rec # | Limits |
|----------------|-------------|--------|--------|--------|
| Diesel C12-C22 | 2475 | 2088 | 84 | 60-140 |
| Surrogate | %Rec | Limits | | |
| Hexacosane | 93 | 60-140 | | |

BSD Lab ID: QC21897

| Analyte | Spike Added | BSD | %Rec # | Limits | RPD # | Limit |
|----------------|-------------|--------|--------|--------|-------|-------|
| Diesel C12-C22 | 2475 | 2344 | 95 | 60-140 | 12 | <35 |
| Surrogate | %Rec | Limits | | | | |
| Hexacosane | 100 | 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



LABORATORY NUMBER: 125558-001
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 133.005
LOCATION: KOT
SAMPLE ID: MANHOLE-OIL LAYER

DATE SAMPLED: 05/13/96
DATE RECEIVED: 05/14/96
DATE EXTRACTED: 05/20/96
DATE ANALYZED: 05/21/96
DATE REPORTED: 05/23/96
BATCH NO: 27688

=====

ANALYSIS: POLYCHLORINATED BIPHENYLS (PCBs)
ANALYSIS METHOD: EPA 8080
EXTRACTION METHOD: EPA 3580

=====

| AROCLOR TYPE | RESULT (mg/Kg) | REPORTING LIMIT (mg/Kg) |
|--------------|-------------------|----------------------------|
| AROCLOR 1221 | ND | 1.0 |
| AROCLOR 1232 | ND | 1.0 |
| AROCLOR 1016 | ND | 1.0 |
| AROCLOR 1242 | ND | 1.0 |
| AROCLOR 1248 | ND | 1.0 |
| AROCLOR 1254 | ND | 1.0 |
| AROCLOR 1260 | 30 | 1.0 |

ND = Not detected at or above reporting limit.

SURROGATE RECOVERY. %

Decachlorobiphenyl

133

Surrogate recovery limits: 61%-143%



| PCBs | | |
|--------------------------------|--------------------------|-----------------|
| Client: Subsurface Consultants | Analysis Method: PCB | |
| Project#: 133.005 | Prep Method: EPA 3550 | |
| Location: KOT | Cleanup Method: EPA acid | |
| Field ID: MANHOLE-H2O LAYER | Sampled: 05/13/96 | |
| Lab ID: 125558-002 | Received: 05/14/96 | |
| Matrix: Water | Extracted: 05/17/96 | |
| Batch#: 27659 | Analyzed: 05/21/96 | |
| 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 | 104 | 60-150 |
| Decachlorobiphenyl | 130 | 30-130 |



LABORATORY NUMBER: 125558-METHOD BLANK
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 133.005
LOCATION: KOT
SAMPLE ID: MB

DATE EXTRACTED: 05/20/96
DATE ANALYZED: 05/21/96
DATE REPORTED: 05/23/96
BATCH NO: 27688

=====

ANALYSIS: POLYCHLORINATED BIPHENYLS (PCBs)
ANALYSIS METHOD: EPA 8080
EXTRACTION METHOD: EPA 3580

=====

| AROCLOR TYPE | RESULT (mg/Kg) | REPORTING LIMIT (mg/Kg) |
|--------------|-------------------|----------------------------|
| AROCLOR 1221 | ND | 1.0 |
| AROCLOR 1232 | ND | 1.0 |
| AROCLOR 1016 | ND | 1.0 |
| AROCLOR 1242 | ND | 1.0 |
| AROCLOR 1248 | ND | 1.0 |
| AROCLOR 1254 | ND | 1.0 |
| AROCLOR 1260 | ND | 1.0 |

ND = Not detected at or above reporting limit.

SURROGATE RECOVERY. %

=====

Decachlorobiphenyl

133

=====

Surrogate recovery limits: 61%-143%

OIL POLYCHLORINATED BIPHENYL LCS RECOVERY

Lab Name: Curtis & Tompkins, Ltd. SDG No.: N/A
 Instrument ID: HP5880_GC01 Run Date(s): 05/21/96
 Batch No: 27688 C&T ID: QC22101

| COMPOUND | SPIKE ADDED (ug/Kg) | SPIKE CONC. (ug/Kg) | % REC | | QC LIMITS REC. |
|--------------|---------------------------|---------------------------|----------|---|----------------------|
| | | | | # | |
| Aroclor 1260 | 13,200 | 13,177 | 100 | | 50-128 |

SURROGATE RECOVERY:

TCMX: 165% (QC LIMITS: 60%-150%)
 DCB: 139% (QC LIMITS: 61%-143%)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 2 outside QC limits

COMMENTS: _____

OIL POLYCHLORINATED BIPHENYL MATRIX SPIKE/
 MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Curtis & Tompkins, Ltd.

SDG No.: N/A

Instrument ID: HP5880_GC01

Run Date: 05/21/96 - 05/21/96

Matrix Spike - Sample No.: 125558-001

Batch No.: 27688

%Moisture: N/A

C&T ID: QC22102/QC22103

| COMPOUND | SPIKE ADDED (mg/Kg) | SAMPLE CONC. (mg/Kg) | MS CONC. (mg/Kg) | MS % REC | # | QC LIMITS REC. |
|--------------|---------------------|----------------------|------------------|----------|---|----------------|
| Aroclor 1260 | 13.2 | 29.8 | 42.0 | 92 | | 50-128 |

| COMPOUND | SPIKE ADDED (mg/Kg) | MSD CONC. (mg/Kg) | MSD % REC | # | % RPD | # | QC LIMITS RPD | REC. |
|--------------|---------------------|-------------------|-----------|---|-------|---|---------------|--------|
| Aroclor 1260 | 13.2 | 43.2 | 102 | | 3 | | 20 | 50-128 |

SURROGATE RECOVERY: QC LIMITS: 60%-150% 30%-130%

| | | |
|------|-------|------|
| | TCMX: | DCB: |
| MS: | 111% | 132% |
| MSD: | 111% | 135% |

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

 RPD: 0 out of 1 outside of QC limits
 Spike Recovery: 0 out of 2 outside of QC limits

COMMENTS:



Lab #: 125558

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: PCB
Prep Method: EPA 3550
Cleanup Method: EPA acid

METHOD BLANK

Matrix: Water
Batch#: 27659
Units: ug/L
Diln Fac: 1

Prep Date: 05/17/96
Analysis Date: 05/21/96

MB Lab ID: QC21988

| 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 | 123 | 60-150 |
| Decachlorobiphenyl | 65 | 30-130 |



Lab #: 125558

BATCH QC REPORT

Page 1 of 1

Polychlorinated Biphenyls

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: PCB
 Prep Method: EPA 3550
 Cleanup Method: EPA acid

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 27659
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/17/96
 Analysis Date: 05/20/96

BS Lab ID: QC21989

| Analyte | Spike Added | BS | %Rec # | Limits |
|--------------------|-------------|--------|--------|--------|
| Aroclor-1260 | 6.67 | 6.2 | 95 | 50-128 |
| Surrogate | %Rec | Limits | | |
| TCMX | 118 | 60-150 | | |
| Decachlorobiphenyl | 122 | 30-130 | | |

BSD Lab ID: QC21990

| Analyte | Spike Added | BSD | %Rec # | Limits | RPD # | Limit |
|--------------------|-------------|--------|--------|--------|-------|-------|
| Aroclor-1260 | 6.67 | 6.2 | 93 | 50-128 | 1 | <20 |
| Surrogate | %Rec | Limits | | | | |
| TCMX | 117 | 60-150 | | | | |
| Decachlorobiphenyl | 127 | 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.

SAMPLE ID: MANHOLE-OIL LAYER
 LAB ID: 125558-001
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Oil

DATE SAMPLED: 05/13/96
 DATE RECEIVED: 05/14/96
 DATE REPORTED: 05/24/96

California TITLE 26 Metals

| Compound | Result (mg/Kg) | Reporting Limit (mg/Kg) | IDF | QC Batch | Method | Analysis Date |
|------------------|-------------------|-------------------------------|-----|-------------|-----------|------------------|
| Antimony | ND | 3.0 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Arsenic | 0.86 | 0.25 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Barium | 31 | 0.50 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Beryllium | ND | 0.10 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Cadmium | 0.62 | 0.10 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Chromium (total) | 1.5 | 0.50 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Cobalt | ND | 1.0 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Copper | 3.9 | 0.50 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Lead | 35 | 0.15 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Mercury | ND | 0.10 | 1 | 27646 | EPA 7471 | 05/17/96 |
| Molybdenum | ND | 1.0 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Nickel | 5.0 | 1.0 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Selenium | 0.52 | 0.25 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Silver | ND | 0.50 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Thallium | ND | 0.25 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Vanadium | 3.7 | 0.50 | 1 | 27654 | EPA 6010A | 05/20/96 |
| Zinc | 9.2 | 1.0 | 1 | 27654 | EPA 6010A | 05/20/96 |

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: MANHOLE-H2O LAYER
 LAB ID: 125558-002
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.005
 LOCATION: KOT
 MATRIX: Water

DATE SAMPLED: 05/13/96
 DATE RECEIVED: 05/14/96
 DATE REPORTED: 05/24/96

California TITLE 26 Metals

| Compound | Result (ug/L) | Reporting Limit (ug/L) | IDF | QC Batch | Method | Analysis Date |
|------------------|------------------|------------------------------|-----|-------------|-----------|------------------|
| Antimony | ND | 60 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Arsenic | 8.8 | 5.0 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Barium | 210 | 10 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Beryllium | ND | 2.0 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Cadmium | 3.1 | 2.0 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Chromium (total) | ND | 10 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Cobalt | ND | 20 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Copper | 43 | 10 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Lead | 38 | 3.0 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Mercury | ND | 0.20 | 1 | 27642 | EPA 7470 | 05/17/96 |
| Molybdenum | ND | 20 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Nickel | 63 | 20 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Selenium | 7.5 | 5.0 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Silver | ND | 5.0 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Thallium | ND | 10 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Vanadium | ND | 10 | 1 | 27657 | EPA 6010A | 05/20/96 |
| Zinc | 97 | 20 | 1 | 27657 | EPA 6010A | 05/20/96 |

ND = Not detected at or above reporting limit



CLIENT: Subsurface Consultants
JOB NUMBER: 125558

DATE REPORTED: 05/24/96

BATCH QC REPORT
PREP BLANK

| Compound | Result | Reporting Units | IDF | QC Batch | Method | Analysis Date |
|------------------|--------|-----------------|-------|----------|-----------------|---------------|
| | | Limit | | | | |
| Antimony | ND | 3 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Antimony | ND | 60 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Arsenic | ND | 0.25 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Arsenic | ND | 5 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Barium | ND | 0.5 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Barium | ND | 10 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Beryllium | ND | 0.1 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Beryllium | ND | 2 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Cadmium | ND | 0.1 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Cadmium | ND | 2 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Chromium (total) | ND | 0.5 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Chromium (total) | ND | 10 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Cobalt | ND | 1 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Cobalt | ND | 20 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Copper | ND | 0.5 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Copper | ND | 10 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Lead | ND | 0.15 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Lead | ND | 3 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Mercury | ND | 0.2 | ug/L | 1 | 27642 EPA 7470 | 05/17/96 |
| Mercury | ND | 0.1 | mg/Kg | 1 | 27646 EPA 7471 | 05/17/96 |
| Molybdenum | ND | 1 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Molybdenum | ND | 20 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Nickel | ND | 1 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Nickel | ND | 20 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Selenium | ND | 0.25 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Selenium | ND | 5 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Silver | ND | 0.5 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Silver | ND | 5 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |
| Thallium | ND | 0.25 | mg/Kg | 1 | 27654 EPA 6010A | 05/20/96 |
| Thallium | ND | 10 | ug/L | 1 | 27657 EPA 6010A | 05/20/96 |

ND = Not Detected at or above reporting limit



CLIENT: Subsurface Consultants
JOB NUMBER: 125558

DATE REPORTED: 05/24/96

**BATCH QC REPORT
PREP BLANK**

| Compound | Result | Reporting Limit | Units | IDF | QC Batch | Method | Analysis Date |
|----------|--------|-----------------|-------|-----|----------|-----------|---------------|
| Vanadium | ND | 0.5 | mg/Kg | 1 | 27654 | EPA 6010A | 05/20/96 |
| Vanadium | ND | 10 | ug/L | 1 | 27657 | EPA 6010A | 05/20/96 |
| Zinc | ND | 1 | mg/Kg | 1 | 27654 | EPA 6010A | 05/20/96 |
| Zinc | ND | 20 | ug/L | 1 | 27657 | EPA 6010A | 05/20/96 |

ND = Not Detected at or above reporting limit



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: MANHOLE-OIL LAYER
 Lab ID: 125558-001
 Matrix: Oil
 Batch#: 27755
 Units: ug/Kg
 Diln Fac: 2000

Sampled: 05/13/96
 Received: 05/14/96
 Extracted: 05/23/96
 Analyzed: 05/23/96

| Analyte | Result | Reporting Limit |
|---------------------------|--------|-----------------|
| Chloromethane | ND | 20000 |
| Bromomethane | ND | 20000 |
| Vinyl Chloride | ND | 20000 |
| Chloroethane | ND | 20000 |
| Methylene Chloride | ND | 40000 |
| Acetone | ND | 40000 |
| Carbon Disulfide | ND | 10000 |
| Trichlorofluoromethane | ND | 10000 |
| 1,1-Dichloroethene | ND | 10000 |
| 1,1-Dichloroethane | ND | 10000 |
| trans-1,2-Dichloroethene | ND | 10000 |
| cis-1,2-Dichloroethene | ND | 10000 |
| Chloroform | ND | 10000 |
| Freon 113 | ND | 10000 |
| 1,2-Dichloroethane | ND | 10000 |
| 2-Butanone | ND | 20000 |
| 1,1,1-Trichloroethane | ND | 10000 |
| Carbon Tetrachloride | ND | 10000 |
| Vinyl Acetate | ND | 100000 |
| Bromodichloromethane | ND | 10000 |
| 1,2-Dichloropropane | ND | 10000 |
| cis-1,3-Dichloropropene | ND | 10000 |
| Trichloroethene | ND | 10000 |
| Dibromochloromethane | ND | 10000 |
| 1,1,2-Trichloroethane | ND | 10000 |
| Benzene | ND | 10000 |
| trans-1,3-Dichloropropene | ND | 10000 |
| 2-Chloroethylvinylether | ND | 20000 |
| Bromoform | ND | 10000 |
| 2-Hexanone | ND | 20000 |
| 4-Methyl-2-Pentanone | ND | 20000 |
| 1,1,2,2-Tetrachloroethane | ND | 10000 |
| Tetrachloroethene | ND | 10000 |
| Toluene | ND | 10000 |
| Chlorobenzene | ND | 10000 |
| Ethylbenzene | 15000 | 10000 |
| Styrene | ND | 10000 |
| m,p-Xylenes | 39000 | 10000 |
| o-Xylene | 23000 | 10000 |

| Surrogate | %Recovery | Recovery Limits |
|-----------------------|-----------|-----------------|
| Toluene-d8 | 94 | 87-125 |
| Bromofluorobenzene | 121 | 79-122 |
| 1,2-Dichloroethane-d4 | 102 | 68-126 |



Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 125558-001
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 133.005
LOCATION: KOT
SAMPLE ID: MANHOLE-OIL LAYER

DATE SAMPLED: 05/13/96
DATE RECEIVED: 05/14/96
DATE ANALYZED: 05/23/96
BATCH NO: 27755

EPA 8240 - LIBRARY SEARCH RESULTS

The 70,000 compound Wiley/NBS mass spectral data library was searched using the Hewlett-Packard probability matching search algorithm. The compounds with the highest match probabilities determined by this program are identified and presented with their match probabilities and approximate concentrations below:

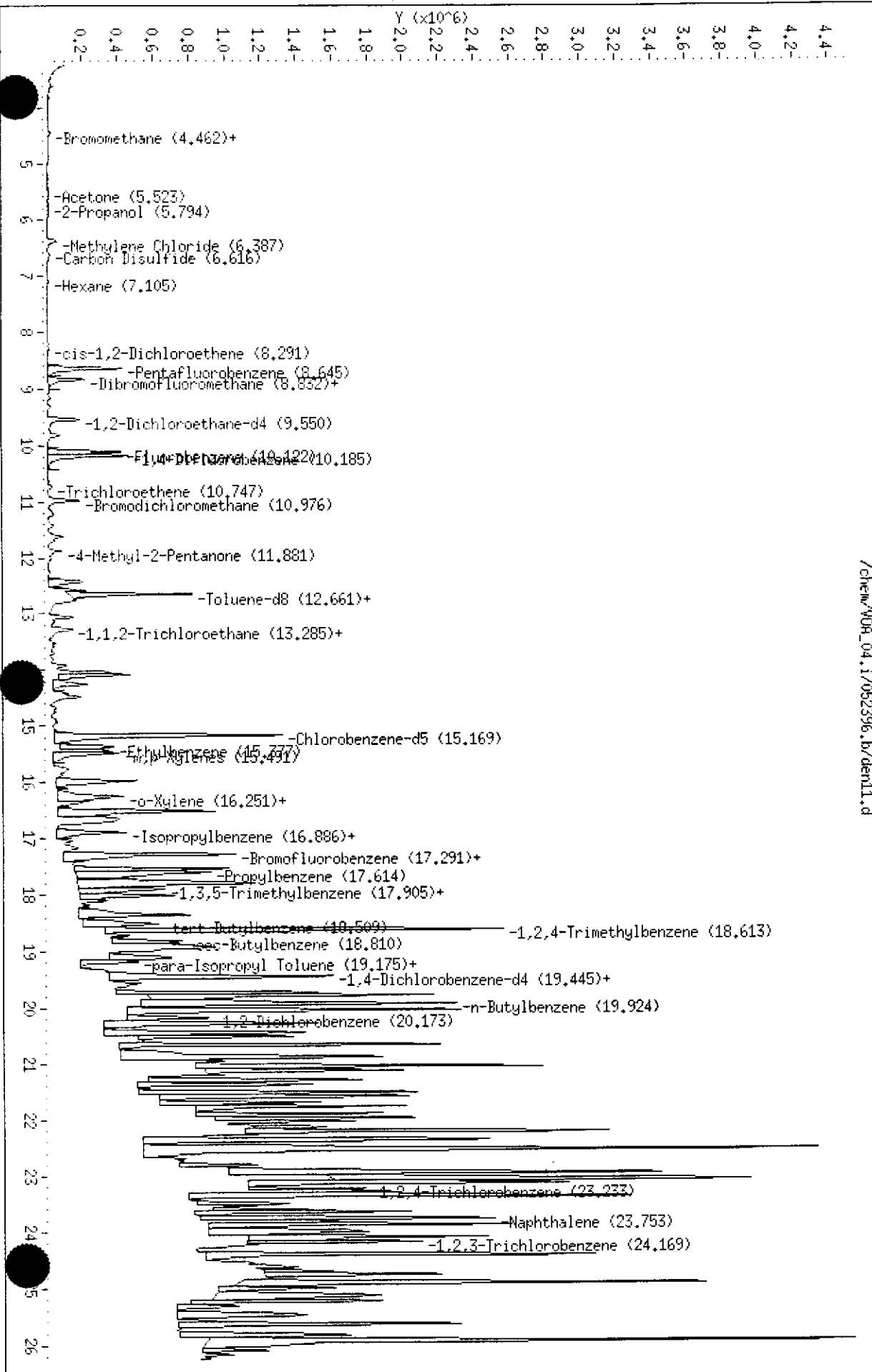
| COMPOUND | PROBABILITY | RESULT (ug/Kg) |
|------------------------|-------------|-------------------|
| Isopropylbenzene | Q | 13,000 |
| Propylbenzene | Q | 45,000 |
| 1,3,5-Trimethylbenzene | Q | 80,000 |
| sec-Butylbenzene | Q | 30,000 |
| 1,2,4-Trimethylbenzene | Q | 330,000 |
| para-Isopropyltoluene | Q | 36,000 |
| n-Butylbenzene | Q | 120,000 |

Q = Positively identified and quantitated from an EPA 8260 standard.

Data File: /chem/W09_04.1/052396.b/den11.d
Date: 23-MAY-96 14:26
Client ID: DVNA P&I
Sample Info: S.125558-001
Purge Volume: 5.0
Column phase: RTX Volatiles

Instrument: W09_04.1
Operator: DM
Column diameter: 0.32

/chem/W09_04.1/052396.b/den11.d





Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.005
 Location: KOT

Analysis Method: EPA 8240
 Prep Method: EPA 5030

Field ID: MANHOLE-H2O LAYER
 Lab ID: 125558-002
 Matrix: Water
 Batch#: 27755
 Units: ug/L
 Diln Fac: 5

Sampled: 05/13/96
 Received: 05/14/96
 Extracted: 05/24/96
 Analyzed: 05/24/96

| Analyte | Result | Reporting Limit |
|---------------------------|-----------|-----------------|
| Chloromethane | ND | 50 |
| Bromomethane | ND | 50 |
| Vinyl Chloride | ND | 50 |
| Chloroethane | ND | 50 |
| Methylene Chloride | ND | 100 |
| Acetone | ND | 100 |
| Carbon Disulfide | ND | 25 |
| Trichlorofluoromethane | ND | 25 |
| 1,1-Dichloroethene | ND | 25 |
| 1,1-Dichloroethane | 45 | 25 |
| trans-1,2-Dichloroethene | ND | 25 |
| cis-1,2-Dichloroethene | 520 | 25 |
| Chloroform | ND | 25 |
| Freon 113 | ND | 25 |
| 1,2-Dichloroethane | ND | 25 |
| 2-Butanone | ND | 50 |
| 1,1,1-Trichloroethane | 13 J | 25 |
| Carbon Tetrachloride | ND | 25 |
| Vinyl Acetate | ND | 250 |
| Bromodichloromethane | ND | 25 |
| 1,2-Dichloropropane | ND | 25 |
| cis-1,3-Dichloropropene | ND | 25 |
| Trichloroethene | 28 | 25 |
| Dibromochloromethane | ND | 25 |
| 1,1,2-Trichloroethane | ND | 25 |
| Benzene | ND | 25 |
| trans-1,3-Dichloropropene | ND | 25 |
| Bromoform | ND | 25 |
| 2-Hexanone | ND | 50 |
| 4-Methyl-2-Pentanone | ND | 50 |
| 1,1,2,2-Tetrachloroethane | ND | 25 |
| Tetrachloroethene | ND | 25 |
| Toluene | ND | 25 |
| Chlorobenzene | ND | 25 |
| Ethylbenzene | ND | 25 |
| Styrene | ND | 25 |
| m,p-Xylenes | 23 J | 25 |
| o-Xylene | 17 J | 25 |
| Surrogate | %Recovery | Recovery Limits |
| 1,2-Dichloroethane-d4 | 125 | 68-126 |
| Toluene-d8 | 87 | 87-125 |
| Bromofluorobenzene | 117 | 79-122 |

J: Estimated Value



Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 125558-002
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 133.005
LOCATION: KOT
SAMPLE ID: MANHOLE-H2O LAYER

DATE SAMPLED: 05/13/96
DATE RECEIVED: 05/14/96
DATE ANALYZED: 05/24/96
BATCH NO: 27755

EPA 8240 - LIBRARY SEARCH RESULTS

The 70,000 compound Wiley/NBS mass spectral data library was searched using the Hewlett-Packard probability matching search algorithm. The compounds with the highest match probabilities determined by this program are identified and presented with their match probabilities and approximate concentrations below:

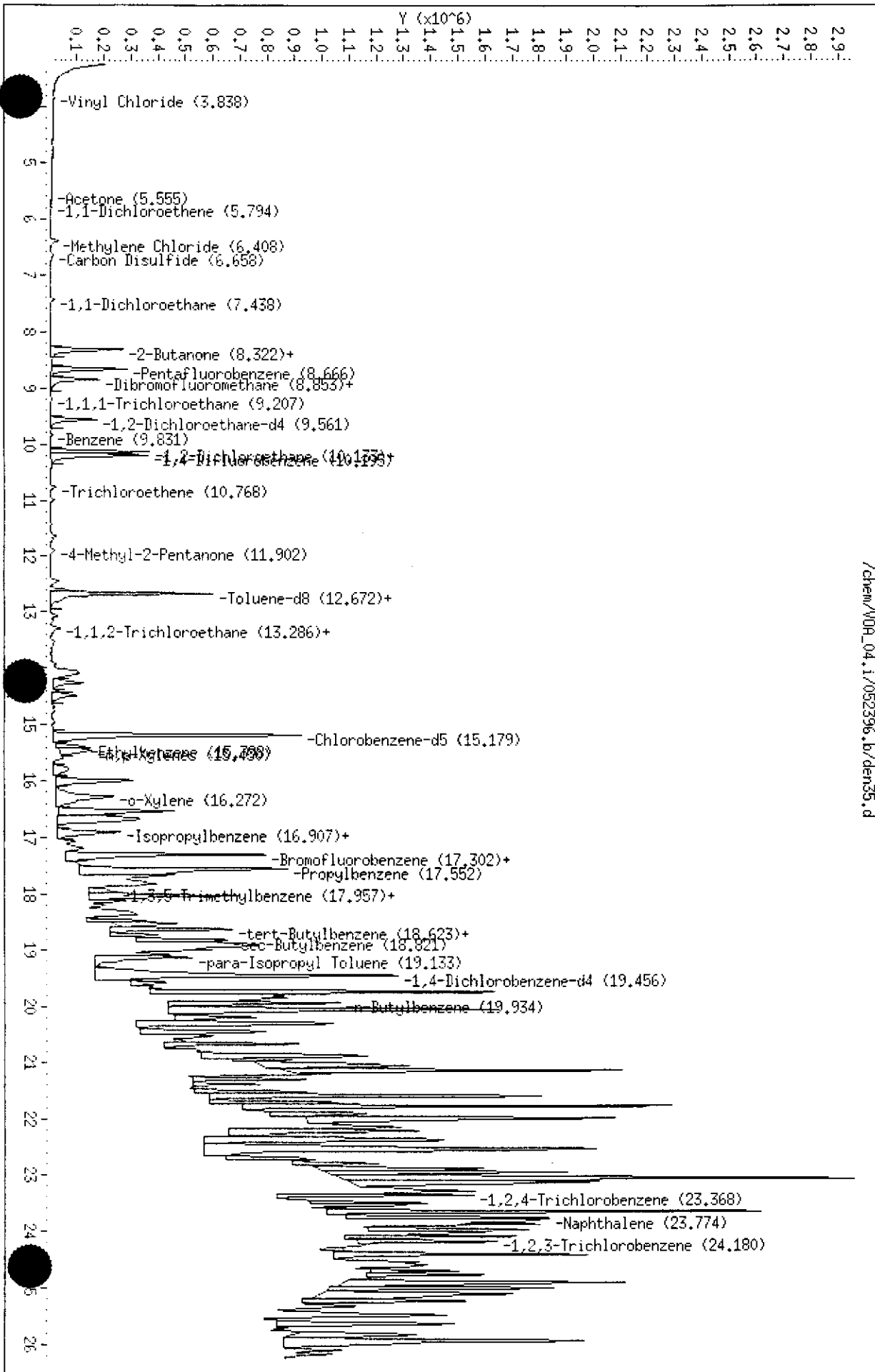
| COMPOUND | PROBABILITY | RESULT (ug/L) |
|------------------------|-------------|------------------|
| Propylbenzene | Q | 26 |
| 1,3,5-Trimethylbenzene | Q | 48 |
| 1,2,4-Trimethylbenzene | Q | 190 |
| n-Butylbenzene | Q | 86 |
| Naphthalene | Q | 220 |

Q = Positively identified and quantitated from an EPA 8260 standard.

Data File: /chem/V09_04.i/052396.b/dens35.d
Date : 24-MAY-96 03:16
Client ID: DINA P&I
Sample Info: S.125558-002
Purge Volume: 5.0
Column phase: RTX Volatiles

Instrument: V09_04.i
Operator: JM
Column diameter: 0.32

/chem/V09_04.i/052396.b/dens35.d



Lab #: 125558

BATCH QC REPORT

Page 1 of 1

| EPA 8240 Volatile Organics | | |
|--------------------------------|---------------------------|--|
| Client: Subsurface Consultants | Analysis Method: EPA 8240 | |
| Project#: 133.005 | Prep Method: EPA 5030 | |
| Location: KOT | | |
| METHOD BLANK | | |
| Matrix: Water | Prep Date: 05/23/96 | |
| Batch#: 27755 | Analysis Date: 05/23/96 | |
| Units: ug/L | | |
| Diln Fac: 1 | | |

MB Lab ID: QC22364

| 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 | 118 | 68-126 |
| Toluene-d8 | 103 | 87-125 |
| Bromofluorobenzene | 102 | 79-122 |

DO: Surrogate diluted out



Lab #: 125558

BATCH QC REPORT

Page 1 of 1

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#: 27755
Units: ug/L
Diln Fac: 1

Prep Date: 05/23/96
Analysis Date: 05/23/96

LCS Lab ID: QC22363

| Analyte | Result | Spike Added | %Rec # | Limits |
|-----------------------|--------|-------------|--------|--------|
| 1,1-Dichloroethene | 64.94 | 50 | 130 | 51-180 |
| Trichloroethene | 56.16 | 50 | 112 | 73-141 |
| Benzene | 51.78 | 50 | 104 | 78-142 |
| Toluene | 61.38 | 50 | 123 | 76-150 |
| Chlorobenzene | 53.19 | 50 | 106 | 83-129 |
| Surrogate | %Rec | Limits | | |
| 1,2-Dichloroethane-d4 | 102 | 68-126 | | |
| Toluene-d8 | 107 | 87-125 | | |
| Bromofluorobenzene | 107 | 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

Lab #: 125558

BATCH QC REPORT

Page 1 of 1

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: 125624-002
 Matrix: Water
 Batch#: 27755
 Units: ug/L
 Diln Fac: 1

 Sample Date: 05/17/96
 Received Date: 05/17/96
 Prep Date: 05/23/96
 Analysis Date: 05/23/96

MS Lab ID: QC22416

| Analyte | Spike Added | Sample | MS | %Rec # | Limits |
|-----------------------|-------------|--------|------|--------|--------|
| 1,1-Dichloroethene | 50 | <5.000 | 54.7 | 109 | 51-180 |
| Trichloroethene | 50 | <5.000 | 62.3 | 125 | 73-141 |
| Benzene | 50 | <5.000 | 55.5 | 111 | 78-142 |
| Toluene | 50 | <5.000 | 55.9 | 111 | 76-150 |
| Chlorobenzene | 50 | <5.000 | 53.4 | 107 | 83-129 |
| Surrogate | %Rec | Limits | | | |
| 1,2-Dichloroethane-d4 | 111 | 68-126 | | | |
| Toluene-d8 | 98 | 87-125 | | | |
| Bromofluorobenzene | 103 | 79-122 | | | |

MSD Lab ID: QC22417

| Analyte | Spike Added | MSD | %Rec # | Limits | RPD # | Limit |
|-----------------------|-------------|--------|--------|--------|-------|-------|
| 1,1-Dichloroethene | 50 | 51.2 | 102 | 51-180 | 7 | <14 |
| Trichloroethene | 50 | 54.2 | 108 | 73-141 | 14 | <14 |
| Benzene | 50 | 50.8 | 102 | 78-142 | 9 | <11 |
| Toluene | 50 | 54.7 | 109 | 76-150 | 2 | <13 |
| Chlorobenzene | 50 | 53.4 | 107 | 83-129 | 0 | <13 |
| Surrogate | %Rec | Limits | | | | |
| 1,2-Dichloroethane-d4 | 92 | 68-126 | | | | |
| Toluene-d8 | 96 | 87-125 | | | | |
| Bromofluorobenzene | 98 | 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

NM: Not meaningful

LR: Over linear range

O: Surrogate diluted out



LABORATORY NUMBER: 125558-001
 CLIENT: SUBSURFACE CONSULTANTS
 PROJECT ID: 133.005
 LOCATION: KOT
 SAMPLE ID: MANHOLE-OIL LAYER

DATE SAMPLED: 05/13/96
 DATE RECEIVED: 05/14/96
 DATE EXTRACTED: 05/29/96
 DATE ANALYZED: 06/05/96
 DATE REPORTED: 06/12/96
 BATCH NO: 27877

EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
 Extraction Method: EPA 3550 Sonication

| ACID COMPOUNDS | RESULT mg/Kg | REPORTING LIMIT mg/Kg |
|------------------------------|-----------------|-----------------------------|
| Phenol | ND | 2,000 |
| 2-Chlorophenol | ND | 2,000 |
| Benzyl Alcohol | ND | 2,000 |
| 2-Methylphenol | ND | 2,000 |
| 4-Methylphenol | ND | 2,000 |
| 2-Nitrophenol | ND | 10,000 |
| 2,4-Dimethylphenol | ND | 2,000 |
| Benzoic Acid | ND | 10,000 |
| 2,4-Dichlorophenol | ND | 10,000 |
| 4-Chloro-3-methylphenol | ND | 2,000 |
| 2,4,6-Trichlorophenol | ND | 2,000 |
| 2,4,5-Trichlorophenol | ND | 10,000 |
| 2,4-Dinitrophenol | ND | 10,000 |
| 4-Nitrophenol | ND | 10,000 |
| 4,6-Dinitro-2-methylphenol | ND | 10,000 |
| Pentachlorophenol | ND | 10,000 |
| BASE/NEUTRAL COMPOUNDS | | |
| N-Nitrosodimethylamine | ND | 2,000 |
| Aniline | ND | 2,000 |
| Bis(2-chloroethyl) ether | ND | 2,000 |
| 1,3-Dichlorobenzene | ND | 2,000 |
| 1,4-Dichlorobenzene | ND | 2,000 |
| 1,2-Dichlorobenzene | ND | 2,000 |
| Bis(2-chloroisopropyl) ether | ND | 2,000 |
| N-Nitroso-di-n-propylamine | ND | 2,000 |
| Hexachloroethane | ND | 2,000 |
| Nitrobenzene | ND | 2,000 |
| Isophorone | ND | 2,000 |
| Bis(2-chloroethoxy) methane | ND | 2,000 |
| 1,2,4-Trichlorobenzene | ND | 2,000 |
| Naphthalene | ND | 2,000 |
| 4-Chloroaniline | ND | 2,000 |
| Hexachlorobutadiene | ND | 2,000 |
| 2-Methylnaphthalene | 2,200 | 2,000 |
| Hexachlorocyclopentadiene | ND | 2,000 |
| 2-Chloronaphthalene | ND | 2,000 |
| 2-Nitroaniline | ND | 10,000 |



LABORATORY NUMBER: 125558-001

SAMPLE ID: MANHOLE-OIL LAYER

BASE/NEUTRAL COMPOUNDS

| | RESULT ug/Kg | REPORTING LIMIT ug/Kg |
|----------------------------|-----------------|-----------------------------|
| Dimethylphthalate | ND | 2,000 |
| Acenaphthylene | ND | 2,000 |
| 2,6-Dinitrotoluene | ND | 2,000 |
| 3-Nitroaniline | ND | 10,000 |
| Acenaphthene | ND | 2,000 |
| Dibenzofuran | ND | 2,000 |
| 2,4-Dinitrotoluene | ND | 2,000 |
| Diethylphthalate | ND | 2,000 |
| 4-Chlorophenyl-phenylether | ND | 2,000 |
| Fluorene | ND | 2,000 |
| 4-Nitroaniline | ND | 10,000 |
| N-Nitrosodiphenylamine | ND | 2,000 |
| Azobenzene | ND | 2,000 |
| 4-Bromophenyl-phenylether | ND | 2,000 |
| Hexachlorobenzene | ND | 2,000 |
| Phenanthrene | ND | 2,000 |
| Anthracene | ND | 2,000 |
| Di-n-butylphthalate | ND | 2,000 |
| Fluoranthene | ND | 2,000 |
| Pyrene | ND | 2,000 |
| Butylbenzylphthalate | ND | 2,000 |
| 3,3'-Dichlorobenzidine | ND | 10,000 |
| Benzo(a)anthracene | ND | 2,000 |
| Chrysene | ND | 2,000 |
| Bis(2-ethylhexyl)phthalate | ND | 2,000 |
| Di-n-octylphthalate | ND | 2,000 |
| Benzo(b)fluoranthene | ND | 2,000 |
| Benzo(k)fluoranthene | ND | 2,000 |
| Benzo(a)pyrene | ND | 2,000 |
| Indeno(1,2,3-cd)pyrene | ND | 2,000 |
| Dibenzo(a,h)anthracene | ND | 2,000 |
| Benzo(g,h,i)perylene | ND | 2,000 |

ND = Not detected at or above reporting limit.

SURROGATE RECOVERIES

| | | | |
|----------------------|----|------------------|-----|
| 2-Fluorophenol | 86 | Nitrobenzene-d5 | 109 |
| Phenol-d5 | 81 | 2-Fluorobiphenyl | 126 |
| 2,4,6-Tribromophenol | 68 | Terphenyl-d14 | 127 |



LABORATORY NUMBER: 125558-001
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 133.005
LOCATION: KOT
SAMPLE ID: MANHOLE-OIL LAYER

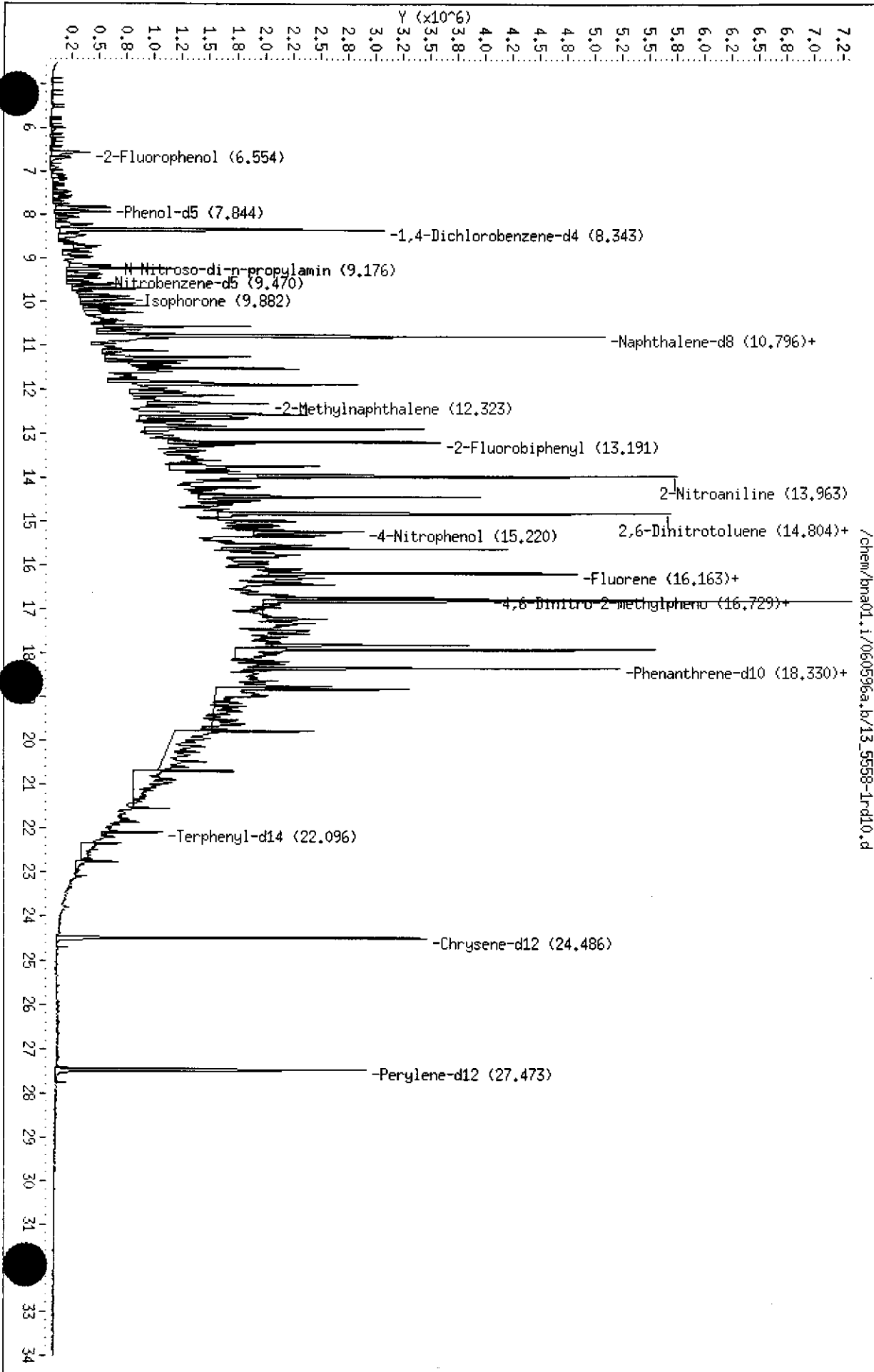
DATE SAMPLED: 05/13/96
DATE RECEIVED: 05/14/96
DATE EXTRACTED: 05/29/96
DATE ANALYZED: 06/05/96
BATCH NO: 27877

EPA 8270 - LIBRARY SEARCH RESULTS

The 70,000 compound Wiley/NBS mass spectral data library was searched using the Hewlett-Packard probability matching search algorithm. The compounds with the highest match probabilities determined by this program are identified and presented with their match probabilities and approximate concentrations below:

| COMPOUND | PROBABILITY | RESULT (mg/Kg) |
|---|-------------|----------------|
| Undecane | 93 % | 3,000 |
| Dodecane | 95 % | 2,000 |
| Undecane, 2,6-dimethyl- | 92 % | 3,000 |
| unknown hydrocarbon | -- | 3,000 |
| Decane, 2,6,7-trimethyl- | 64 % | 2,000 |
| Naphthalene, 1,2,3,4-tetrahydro-5-methyl- | 70 % | 3,000 |
| Tridecane | 95 % | 4,000 |
| unknown hydrocarbon | -- | 3,000 |
| Dodecane, 2,6,10-trimethyl- | 74 % | 4,000 |
| Naphthalene, 2,6-dimethyl- | 98 % | 4,000 |
| Pentadecane | 98 % | 4,000 |
| Hexadecane | 95 % | 4,000 |
| Pentadecane, 2,6,10,14-tetramethyl- | 98 % | 10,000 |
| Octadecane | 96 % | 3,000 |
| Hexadecane, 2,6,10,14-tetramethyl- | 92 % | 10,000 |
| Nonadecane | 98 % | 10,000 |
| Eicosane | 95 % | 20,000 |
| Heneicosane | 95 % | 10,000 |
| unknown hydrocarbon | -- | 3,000 |

125558-001



Data File: /chem/bna01.i/060596a.br/13_5558-1r-d10.d
Date: 05-JUN-1996 20:49
Client ID: CURTIS&TOMPKINS,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Kti 5 x .5 u

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



LABORATORY NUMBER: 125558-METHOD BLANK
 CLIENT: SUBSURFACE CONSULTANTS
 PROJECT ID: 133.005
 LOCATION: KOT
 SAMPLE ID: MB

DATE EXTRACTED: 05/29/96
 DATE ANALYZED: 06/05/96
 DATE REPORTED: 06/12/96
 BATCH NO: 27877

EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
 Extraction Method: EPA 3550 Sonication

| ACID COMPOUNDS | RESULT mg/Kg | REPORTING LIMIT mg/Kg |
|------------------------------|-----------------|-----------------------------|
| Phenol | ND | 2,000 |
| 2-Chlorophenol | ND | 2,000 |
| Benzyl Alcohol | ND | 2,000 |
| 2-Methylphenol | ND | 2,000 |
| 4-Methylphenol | ND | 2,000 |
| 2-Nitrophenol | ND | 10,000 |
| 2,4-Dimethylphenol | ND | 2,000 |
| Benzoic Acid | ND | 10,000 |
| 2,4-Dichlorophenol | ND | 10,000 |
| 4-Chloro-3-methylphenol | ND | 2,000 |
| 2,4,6-Trichlorophenol | ND | 2,000 |
| 2,4,5-Trichlorophenol | ND | 10,000 |
| 2,4-Dinitrophenol | ND | 10,000 |
| 4-Nitrophenol | ND | 10,000 |
| 4,6-Dinitro-2-methylphenol | ND | 10,000 |
| Pentachlorophenol | ND | 10,000 |
| BASE/NEUTRAL COMPOUNDS | | |
| N-Nitrosodimethylamine | ND | 2,000 |
| Aniline | ND | 2,000 |
| Bis(2-chloroethyl) ether | ND | 2,000 |
| 1,3-Dichlorobenzene | ND | 2,000 |
| 1,4-Dichlorobenzene | ND | 2,000 |
| 1,2-Dichlorobenzene | ND | 2,000 |
| Bis(2-chloroisopropyl) ether | ND | 2,000 |
| N-Nitroso-di-n-propylamine | ND | 2,000 |
| Hexachloroethane | ND | 2,000 |
| Nitrobenzene | ND | 2,000 |
| Isophorone | ND | 2,000 |
| Bis(2-chloroethoxy) methane | ND | 2,000 |
| 1,2,4-Trichlorobenzene | ND | 2,000 |
| Naphthalene | ND | 2,000 |
| 4-Chloroaniline | ND | 2,000 |
| Hexachlorobutadiene | ND | 2,000 |
| 2-Methylnaphthalene | ND | 2,000 |
| Hexachlorocyclopentadiene | ND | 2,000 |
| 2-Chloronaphthalene | ND | 2,000 |
| 2-Nitroaniline | ND | 10,000 |



LABORATORY NUMBER: 125558-METHOD BLANK
SAMPLE ID: MB

BASE/NEUTRAL COMPOUNDS

| | RESULT | REPORTING |
|----------------------------|--------|-----------|
| | ug/Kg | LIMIT |
| | | ug/Kg |
| Dimethylphthalate | ND | 2,000 |
| Acenaphthylene | ND | 2,000 |
| 2,6-Dinitrotoluene | ND | 2,000 |
| 3-Nitroaniline | ND | 10,000 |
| Acenaphthene | ND | 2,000 |
| Dibenzofuran | ND | 2,000 |
| 2,4-Dinitrotoluene | ND | 2,000 |
| Diethylphthalate | ND | 2,000 |
| 4-Chlorophenyl-phenylether | ND | 2,000 |
| Fluorene | ND | 2,000 |
| 4-Nitroaniline | ND | 10,000 |
| N-Nitrosodiphenylamine | ND | 2,000 |
| Azobenzene | ND | 2,000 |
| 4-Bromophenyl-phenylether | ND | 2,000 |
| Hexachlorobenzene | ND | 2,000 |
| Phenanthrene | ND | 2,000 |
| Anthracene | ND | 2,000 |
| Di-n-butylphthalate | ND | 2,000 |
| Fluoranthene | ND | 2,000 |
| Pyrene | ND | 2,000 |
| Butylbenzylphthalate | ND | 2,000 |
| 3,3'-Dichlorobenzidine | ND | 10,000 |
| Benzo(a)anthracene | ND | 2,000 |
| Chrysene | ND | 2,000 |
| Bis(2-ethylhexyl)phthalate | ND | 2,000 |
| Di-n-octylphthalate | ND | 2,000 |
| Benzo(b)fluoranthene | ND | 2,000 |
| Benzo(k)fluoranthene | ND | 2,000 |
| Benzo(a)pyrene | ND | 2,000 |
| Indeno(1,2,3-cd)pyrene | ND | 2,000 |
| Dibenzo(a,h)anthracene | ND | 2,000 |
| Benzo(g,h,i)perylene | ND | 2,000 |

ND = Not detected at or above reporting limit.

SURROGATE RECOVERIES

| | | | |
|----------------------|----|------------------|-----|
| 2-Fluorophenol | 93 | Nitrobenzene-d5 | 106 |
| Phenol-d5 | 92 | 2-Fluorobiphenyl | 118 |
| 2,4,6-Tribromophenol | 85 | Terphenyl-d14 | 117 |

LABORATORY NUMBER: 125558
CLIENT: SUBSURFACE CONSULTANTS
LOCATION: KOT

DATE EXTRACTED: 05/29/96
DATE ANALYZED: 06/05/96
DATE REPORTED: 06/13/96
BATCH NO: 27877

EPA METHOD 8270 QC SUMMARY

| COMPOUND | PERCENT RECOVERY |
|-----------------------------------|------------------|
| ===== | |
| Laboratory Control Spike Results: | |
| Phenol | 88 % |
| 2-Chlorophenol | 90 % |
| 4-Chloro-3-methylphenol | 72 % |
| 4-Nitrophenol | 49 % |
| Pentachlorophenol | 48 % |
| 1,4-Dichlorobenzene | 109 % |
| N-Nitroso-di-n-propylamine | 99 % |
| 1,2,4-Trichlorobenzene | 108 % |
| Acenaphthene | 112 % |
| 2,4-Dinitrotoluene | 95 % |
| Pyrene | 108 % |



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8270
Prep Method: EPA 3520

Field ID: MANHOLE-H2O LAYER
Lab ID: 125558-002
Matrix: Water
Batch#: 27608
Units: ug/L
Diln Fac: 50

Sampled: 05/13/96
Received: 05/14/96
Extracted: 05/15/96
Analyzed: 05/20/96

| Analyte | Result | Reporting Limit |
|------------------------------|--------|-----------------|
| Phenol | ND | 2400 |
| 2-Chlorophenol | ND | 2400 |
| Benzyl alcohol | ND | 2400 |
| 2-Methylphenol | ND | 2400 |
| 4-Methylphenol | ND | 2400 |
| 2-Nitrophenol | ND | 12000 |
| 2,4-Dimethylphenol | ND | 2400 |
| Benzoic acid | ND | 12000 |
| 2,4-Dichlorophenol | ND | 2400 |
| 4-Chloro-3-methylphenol | ND | 2400 |
| 2,4,6-Trichlorophenol | ND | 2400 |
| 2,4,5-Trichlorophenol | ND | 12000 |
| 2,4-Dinitrophenol | ND | 12000 |
| 4-Nitrophenol | ND | 12000 |
| 4,6-Dinitro-2-methylphenol | ND | 12000 |
| Pentachlorophenol | ND | 12000 |
| N-Nitrosodimethylamine | ND | 2400 |
| Aniline | ND | 2400 |
| bis(2-Chloroethyl) ether | ND | 2400 |
| 1,3-Dichlorobenzene | ND | 2400 |
| 1,4-Dichlorobenzene | ND | 2400 |
| 1,2-Dichlorobenzene | ND | 2400 |
| bis(2-Chloroisopropyl) ether | ND | 2400 |
| N-Nitroso-di-n-propylamine | ND | 2400 |
| Hexachloroethane | ND | 2400 |
| Nitrobenzene | ND | 2400 |
| Isophorone | ND | 2400 |
| bis(2-Chloroethoxy)methane | ND | 2400 |
| 1,2,4-Trichlorobenzene | ND | 2400 |
| Naphthalene | ND | 2400 |
| 4-Chloroaniline | ND | 2400 |
| Hexachlorobutadiene | ND | 2400 |
| 2-Methylnaphthalene | ND | 2400 |
| Hexachlorocyclopentadiene | ND | 2400 |
| 2-Chloronaphthalene | ND | 2400 |
| 2-Nitroaniline | ND | 12000 |
| Dimethylphthalate | ND | 2400 |
| Acenaphthylene | ND | 2400 |



Semivolatile Organics by GC/MS

| | |
|-----------------------------|---------------------|
| Field ID: MANHOLE-H2O LAYER | Sampled: 05/13/96 |
| Lab ID: 125558-002 | Received: 05/14/96 |
| Matrix: Water | Extracted: 05/15/96 |
| Batch#: 27608 | Analyzed: 05/20/96 |
| Units: ug/L | |
| Diln Fac: 50 | |

| Analyte | Result | Reporting Limit |
|----------------------------|-----------|-----------------|
| 2,6-Dinitrotoluene | ND | 2400 |
| 3-Nitroaniline | ND | 12000 |
| Acenaphthene | ND | 2400 |
| Dibenzofuran | ND | 2400 |
| 2,4-Dinitrotoluene | ND | 2400 |
| Diethylphthalate | ND | 2400 |
| 4-Chlorophenyl-phenylether | ND | 2400 |
| Fluorene | ND | 2400 |
| 4-Nitroaniline | ND | 12000 |
| N-Nitrosodiphenylamine | ND | 2400 |
| Azobenzene | ND | 2400 |
| 4-Bromophenyl-phenylether | ND | 2400 |
| Hexachlorobenzene | ND | 2400 |
| Phenanthrene | ND | 2400 |
| Anthracene | ND | 2400 |
| Di-n-butylphthalate | ND | 2400 |
| Fluoranthene | ND | 2400 |
| Pyrene | ND | 2400 |
| Butylbenzylphthalate | ND | 2400 |
| 3,3'-Dichlorobenzidine | ND | 12000 |
| Benzo(a)anthracene | ND | 2400 |
| Chrysene | ND | 2400 |
| bis(2-Ethylhexyl)phthalate | ND | 2400 |
| Di-n-octylphthalate | ND | 2400 |
| Benzo(b)fluoranthene | ND | 2400 |
| Benzo(k)fluoranthene | ND | 2400 |
| Benzo(a)pyrene | ND | 2400 |
| Indeno(1,2,3-cd)pyrene | ND | 2400 |
| Dibenz(a,h)anthracene | ND | 2400 |
| Benzo(g,h,i)perylene | ND | 2400 |
| 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 = Diluted out



Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 125558-002
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 133.005
LOCATION: KOT
SAMPLE ID: MANHOLE-H2O LAYER

DATE SAMPLED: 05/13/96
DATE RECEIVED: 05/14/96
DATE EXTRACTED: 05/15/96
DATE ANALYZED: 06/20/96
BATCH NO: 27608

EPA 8270 - LIBRARY SEARCH RESULTS

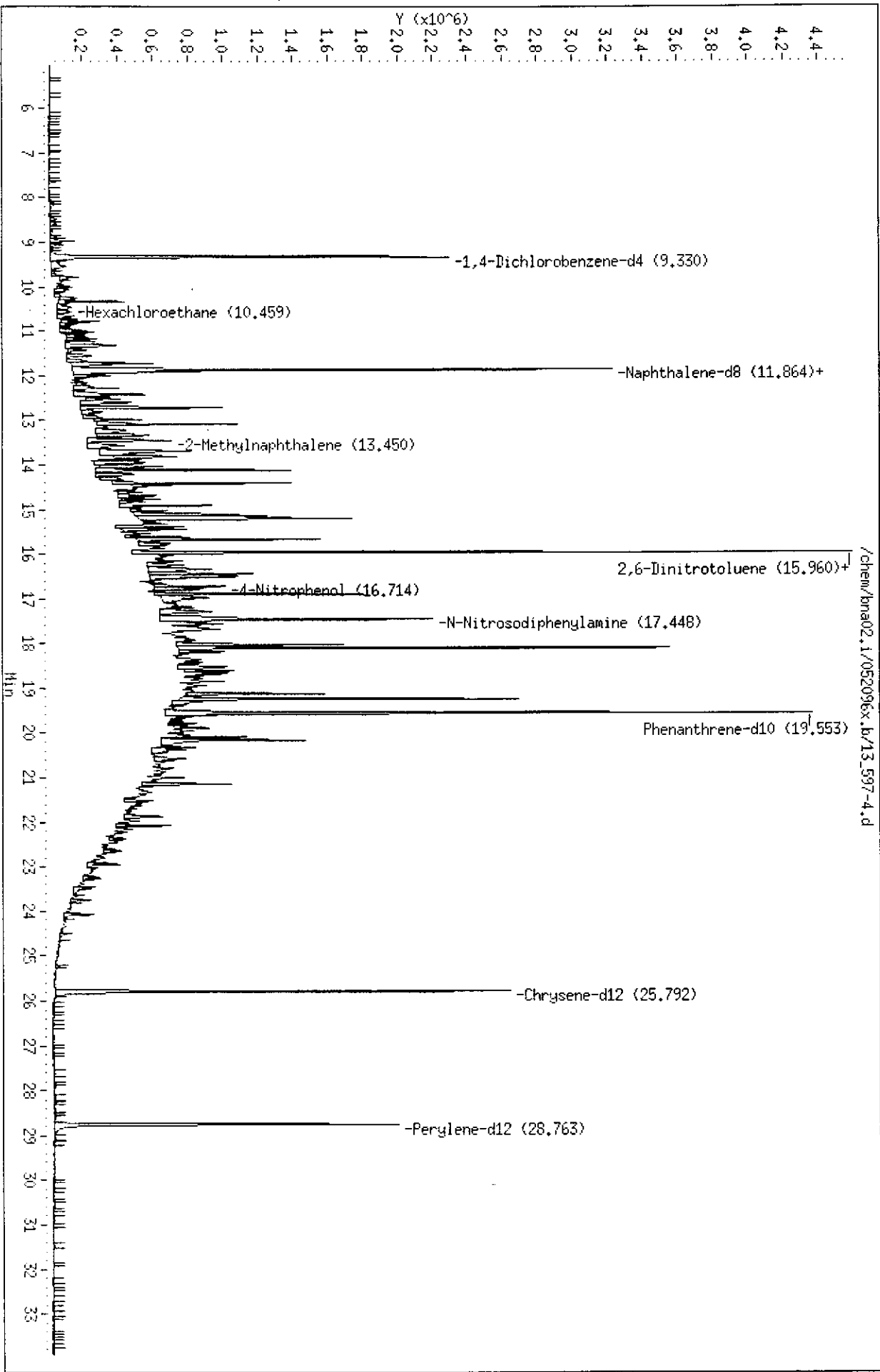
The 70,000 compound Wiley/NBS mass spectral data library was searched using the Hewlett-Packard probability matching search algorithm. The compounds with the highest match probabilities determined by this program are identified and presented with their match probabilities and approximate concentrations below:

| COMPOUND | PROBABILITY | RESULT (mg/Kg) |
|-------------------------------|-------------|-------------------|
| Tridecane | 96 % | 2,000 |
| Benzocycloheptatriene | 96 % | 3,000 |
| Dodecane, 2,6,10-trimethyl- | 91 % | 2,000 |
| Dodecane, 2,6,10-trimethyl- | 87 % | 4,000 |
| Pentadecane | 96 % | 2,000 |
| Naphthalene, 1,6,7-trimethyl- | 95 % | 2,000 |
| Hexadecane | 96 % | 2,000 |
| Heptadecane | 97 % | 2,000 |
| Tetratetracontane | 87 % | 4,000 |
| Pentadecane | 94 % | 2,000 |

125558-002

Data File: /chem/bna02.i/052096x.b/13_597-4.d
Date: 20-MAY-1996 23:44
Client ID: CURTIS&TOMPKINS,LTD
Sample Info:
Volume Injected (uL): 1.0
Column phase: Xti 5 x .5 u

Instrument: bna02.i
Operator: beg
Column diameter: 0.25



/chem/bna02.i/052096x.b/13_597-4.d



Lab #: 125558

BATCH QC REPORT

Page 1 of 2

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#: 27608
Units: ug/L
Diln Fac: 1

Prep Date: 05/15/96
Analysis Date: 05/20/96

MB Lab ID: QC21782

| 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 |



Lab #: 125558

BATCH QC REPORT

Page 2 of 2

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#: 27608
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/15/96
 Analysis Date: 05/20/96

MB Lab ID: QC21782

| 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 | 86 | 21-110 |
| Phenol-d5 | 85 | 10-110 |
| 2,4,6-Tribromophenol | 82 | 10-123 |
| Nitrobenzene-d5 | 86 | 35-114 |
| 2-Fluorobiphenyl | 79 | 43-116 |
| Terphenyl-d14 | 100 | 33-141 |



Lab #: 125558

BATCH QC REPORT

Page 1 of 1

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#: 27608
 Units: ug/L
 Diln Fac: 1

Prep Date: 05/15/96
 Analysis Date: 05/20/96

BS Lab ID: QC21783

| Analyte | Spike Added | BS | %Rec # | Limits |
|----------------------------|-------------|--------|--------|--------|
| Phenol | 100 | 84.71 | 85 | 12-110 |
| 2-Chlorophenol | 100 | 84.38 | 84 | 27-123 |
| 4-Chloro-3-methylphenol | 100 | 85.95 | 86 | 23-97 |
| 4-Nitrophenol | 100 | 62.75 | 63 | 10-80 |
| Pentachlorophenol | 100 | 51.58 | 52 | 9-103 |
| 1,4-Dichlorobenzene | 50 | 37.47 | 75 | 36-97 |
| N-Nitroso-di-n-propylamine | 50 | 34.97 | 70 | 41-116 |
| 1,2,4-Trichlorobenzene | 50 | 40.49 | 81 | 39-98 |
| Acenaphthene | 50 | 41.99 | 84 | 46-118 |
| 2,4-Dinitrotoluene | 50 | 38.25 | 77 | 24-96 |
| Pyrene | 50 | 48.07 | 96 | 26-127 |
| Surrogate | %Rec | Limits | | |
| 2-Fluorophenol | 91 | 21-110 | | |
| Phenol-d5 | 92 | 10-110 | | |
| 2,4,6-Tribromophenol | 97 | 10-123 | | |
| Nitrobenzene-d5 | 95 | 35-114 | | |
| 2-Fluorobiphenyl | 86 | 43-116 | | |
| Terphenyl-d14 | 101 | 33-141 | | |

BSD Lab ID: QC21784

| Analyte | Spike Added | BSD | %Rec # | Limits | RPD # | Limit |
|----------------------------|-------------|--------|--------|--------|-------|-------|
| Phenol | 100 | 88.16 | 88 | 12-110 | 3 | <42 |
| 2-Chlorophenol | 100 | 87.83 | 88 | 27-123 | 5 | <40 |
| 4-Chloro-3-methylphenol | 100 | 88.28 | 88 | 23-97 | 2 | <42 |
| 4-Nitrophenol | 100 | 65.79 | 66 | 10-80 | 5 | <50 |
| Pentachlorophenol | 100 | 53.77 | 54 | 9-103 | 4 | <50 |
| 1,4-Dichlorobenzene | 50 | 38.68 | 77 | 36-97 | 3 | <88 |
| N-Nitroso-di-n-propylamine | 50 | 35.93 | 72 | 41-116 | 3 | <88 |
| 1,2,4-Trichlorobenzene | 50 | 41.04 | 82 | 39-98 | 1 | <88 |
| Acenaphthene | 50 | 42.1 | 84 | 46-118 | 0 | <31 |
| 2,4-Dinitrotoluene | 50 | 38.65 | 77 | 24-96 | 0 | <38 |
| Pyrene | 50 | 48.96 | 98 | 26-127 | 2 | <31 |
| Surrogate | %Rec | Limits | | | | |
| 2-Fluorophenol | 91 | 21-110 | | | | |
| Phenol-d5 | 95 | 10-110 | | | | |
| 2,4,6-Tribromophenol | 96 | 10-123 | | | | |
| Nitrobenzene-d5 | 94 | 35-114 | | | | |
| 2-Fluorobiphenyl | 85 | 43-116 | | | | |
| Terphenyl-d14 | 98 | 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



CORE LABORATORIES
ANALYTICAL REPORT
Job Number: 960950
Prepared For:
Curtis & Tompkins, Ltd.
Tracy Babjar
2323 Fifth Street
Berkeley, CA 94710
Date: 05/17/96

Signature 

Date: 5/17/96

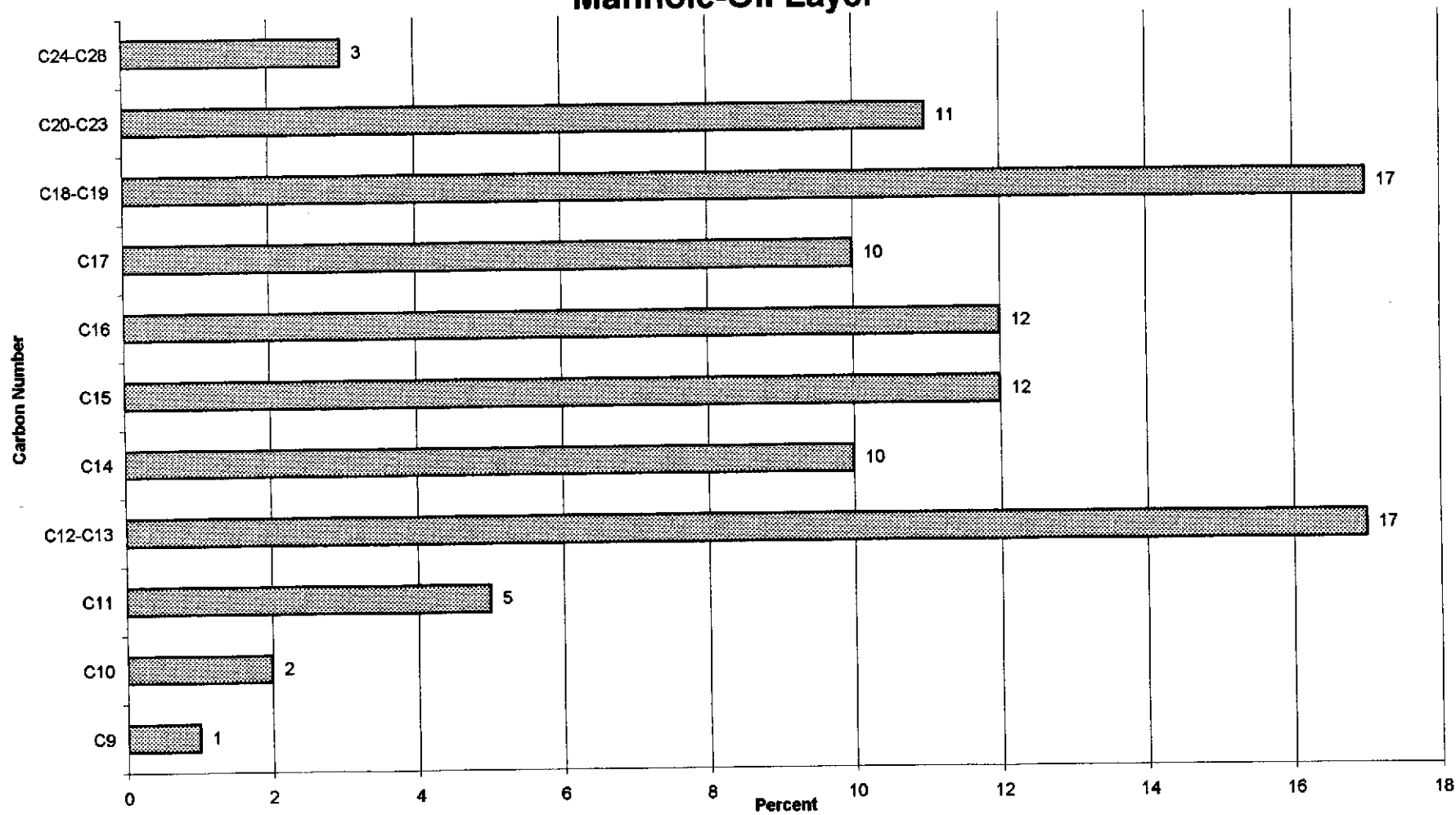
Name: Greg L. Cook

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

Title: Laboratory Manager



Project 960950-1 Carbon Distribution Manhole-Oil Layer



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CORE LABORATORIES

LABORATORY TESTS RESULTS 05/17/96

JOB NUMBER: 960950

CUSTOMER: Curtis & Tompkins, Ltd.

ATTN: Tracy Babjar

CLIENT I.D.: Manhole-Oil Layer
 DATE SAMPLED: 05/13/96
 TIME SAMPLED: 00:00
 WORK DESCRIPTION: Manhole-Oil Layer

LABORATORY I.D.: 960950-0001
 DATE RECEIVED: 05/16/96
 TIME RECEIVED: 10:14
 REMARKS: 8oz. Glass Jar

| TEST DESCRIPTION | FINAL RESULT | LIMITS/*DILUTION | UNITS OF MEASURE | TEST METHOD | DATE | TECHN |
|------------------------------------|--------------|------------------|------------------|-------------|----------|-------|
| Simulated Distillation, Distillate | | *1 | | ASTM D-2887 | 05/16/96 | CSS |
| IBP | 311 | 1 | Deg F | ASTM D-2887 | | |
| 1 % Off | 335 | 1 | Deg F | ASTM D-2887 | | |
| 2 % Off | 361 | 1 | Deg F | ASTM D-2887 | | |
| 3 % Off | 377 | 1 | Deg F | ASTM D-2887 | | |
| 4 % Off | 389 | 1 | Deg F | ASTM D-2887 | | |
| 5 % Off | 398 | 1 | Deg F | ASTM D-2887 | | |
| 6 % Off | 405 | 1 | Deg F | ASTM D-2887 | | |
| 7 % Off | 411 | 1 | Deg F | ASTM D-2887 | | |
| 8 % Off | 417 | 1 | Deg F | ASTM D-2887 | | |
| 9 % Off | 422 | 1 | Deg F | ASTM D-2887 | | |
| 10 % Off | 428 | 1 | Deg F | ASTM D-2887 | | |
| 11 % Off | 433 | 1 | Deg F | ASTM D-2887 | | |
| 12 % Off | 438 | 1 | Deg F | ASTM D-2887 | | |
| 13 % Off | 442 | 1 | Deg F | ASTM D-2887 | | |
| 14 % Off | 446 | 1 | Deg F | ASTM D-2887 | | |
| 15 % Off | 450 | 1 | Deg F | ASTM D-2887 | | |
| 16 % Off | 454 | 1 | Deg F | ASTM D-2887 | | |
| 17 % Off | 459 | 1 | Deg F | ASTM D-2887 | | |
| 18 % Off | 464 | 1 | Deg F | ASTM D-2887 | | |
| 19 % Off | 468 | 1 | Deg F | ASTM D-2887 | | |
| 20 % Off | 471 | 1 | Deg F | ASTM D-2887 | | |
| 21 % Off | 475 | 1 | Deg F | ASTM D-2887 | | |
| 22 % Off | 478 | 1 | Deg F | ASTM D-2887 | | |
| 23 % Off | 480 | 1 | Deg F | ASTM D-2887 | | |
| 24 % Off | 483 | 1 | Deg F | ASTM D-2887 | | |
| 25 % Off | 486 | 1 | Deg F | ASTM D-2887 | | |
| 26 % Off | 490 | 1 | Deg F | ASTM D-2887 | | |
| 27 % Off | 493 | 1 | Deg F | ASTM D-2887 | | |
| 28 % Off | 497 | 1 | Deg F | ASTM D-2887 | | |
| 29 % Off | 500 | 1 | Deg F | ASTM D-2887 | | |
| 30 % Off | 503 | 1 | Deg F | ASTM D-2887 | | |
| 31 % Off | 506 | 1 | Deg F | ASTM D-2887 | | |
| 32 % Off | 509 | 1 | Deg F | ASTM D-2887 | | |
| 33 % Off | 512 | 1 | Deg F | ASTM D-2887 | | |
| 34 % Off | 514 | 1 | Deg F | ASTM D-2887 | | |
| 35 % Off | 517 | 1 | Deg F | ASTM D-2887 | | |
| 36 % Off | 520 | 1 | Deg F | ASTM D-2887 | | |
| 37 % Off | 522 | 1 | Deg F | ASTM D-2887 | | |
| 38 % Off | 525 | 1 | Deg F | ASTM D-2887 | | |
| 39 % Off | 527 | 1 | Deg F | ASTM D-2887 | | |
| 40 % Off | 530 | 1 | Deg F | ASTM D-2887 | | |
| 41 % Off | 532 | 1 | Deg F | ASTM D-2887 | | |
| 42 % Off | 534 | 1 | Deg F | ASTM D-2887 | | |

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



CORE LABORATORIES

LABORATORY TESTS RESULTS 05/17/96

JOB NUMBER: 960950

CUSTOMER: Curtis & Tompkins, Ltd.

ATTN: Tracy Babjar

CLIENT I.D.....: Manhole-Oil Layer
 DATE SAMPLED.....: 05/13/96
 TIME SAMPLED.....: 00:00
 WORK DESCRIPTION...: Manhole-Oil Layer

LABORATORY I.D....: 960950-0001
 DATE RECEIVED....: 05/16/96
 TIME RECEIVED....: 10:14
 REMARKS.....: 8oz.Glass Jar

| TEST DESCRIPTION | FINAL RESULT | LIMITS/*DILUTION | UNITS OF MEASURE | TEST METHOD | DATE | TECHN |
|-----------------------------------|--------------|------------------|------------------|-------------|----------|-------|
| 43 % Off | 537 | 1 | Deg F | ASTM D-2887 | | |
| 44 % Off | 539 | 1 | Deg F | ASTM D-2887 | | |
| 45 % Off | 541 | 1 | Deg F | ASTM D-2887 | | |
| 46 % Off | 544 | 1 | Deg F | ASTM D-2887 | | |
| 47 % Off | 546 | 1 | Deg F | ASTM D-2887 | | |
| 48 % Off | 548 | 1 | Deg F | ASTM D-2887 | | |
| 49 % Off | 551 | 1 | Deg F | ASTM D-2887 | | |
| 50 % Off | 554 | 1 | Deg F | ASTM D-2887 | | |
| Simulated Distillation, Continued | | *1 | | ASTM D-2887 | 05/16/96 | CSS |
| 51 % Off | 557 | 1 | Deg F | ASTM D-2887 | | |
| 52 % Off | 559 | 1 | Deg F | ASTM D-2887 | | |
| 53 % Off | 561 | 1 | Deg F | ASTM D-2887 | | |
| 54 % Off | 564 | 1 | Deg F | ASTM D-2887 | | |
| 55 % Off | 566 | 1 | Deg F | ASTM D-2887 | | |
| 56 % Off | 569 | 1 | Deg F | ASTM D-2887 | | |
| 57 % Off | 571 | 1 | Deg F | ASTM D-2887 | | |
| 58 % Off | 573 | 1 | Deg F | ASTM D-2887 | | |
| 59 % Off | 575 | 1 | Deg F | ASTM D-2887 | | |
| 60 % Off | 577 | 1 | Deg F | ASTM D-2887 | | |
| 61 % Off | 579 | 1 | Deg F | ASTM D-2887 | | |
| 62 % Off | 582 | 1 | Deg F | ASTM D-2887 | | |
| 63 % Off | 584 | 1 | Deg F | ASTM D-2887 | | |
| 64 % Off | 587 | 1 | Deg F | ASTM D-2887 | | |
| 65 % Off | 589 | 1 | Deg F | ASTM D-2887 | | |
| 66 % Off | 592 | 1 | Deg F | ASTM D-2887 | | |
| 67 % Off | 595 | 1 | Deg F | ASTM D-2887 | | |
| 68 % Off | 597 | 1 | Deg F | ASTM D-2887 | | |
| 69 % Off | 600 | 1 | Deg F | ASTM D-2887 | | |
| 70 % Off | 602 | 1 | Deg F | ASTM D-2887 | | |
| 71 % Off | 604 | 1 | Deg F | ASTM D-2887 | | |
| 72 % Off | 607 | 1 | Deg F | ASTM D-2887 | | |
| 73 % Off | 609 | 1 | Deg F | ASTM D-2887 | | |
| 74 % Off | 612 | 1 | Deg F | ASTM D-2887 | | |
| 75 % Off | 615 | 1 | Deg F | ASTM D-2887 | | |
| 76 % Off | 618 | 1 | Deg F | ASTM D-2887 | | |
| 77 % Off | 620 | 1 | Deg F | ASTM D-2887 | | |
| 78 % Off | 623 | 1 | Deg F | ASTM D-2887 | | |
| 79 % Off | 626 | 1 | Deg F | ASTM D-2887 | | |
| 80 % Off | 629 | 1 | Deg F | ASTM D-2887 | | |
| 81 % Off | 632 | 1 | Deg F | ASTM D-2887 | | |
| 82 % Off | 636 | 1 | Deg F | ASTM D-2887 | | |
| 83 % Off | 639 | 1 | Deg F | ASTM D-2887 | | |
| 84 % Off | 643 | 1 | Deg F | ASTM D-2887 | | |

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CORE LABORATORIES

LABORATORY TESTS RESULTS 05/17/96

JOB NUMBER: 960950

CUSTOMER: Curtis & Tompkins, Ltd.

ATTN: Tracy Babjar

CLIENT I.D.: Manhole-Oil Layer
 DATE SAMPLED: 05/13/96
 TIME SAMPLED: 00:00
 WORK DESCRIPTION: Manhole-Oil Layer

LABORATORY I.D.: 960950-0001
 DATE RECEIVED: 05/16/96
 TIME RECEIVED: 10:14
 REMARKS: 8oz. Glass Jar

| TEST DESCRIPTION | FINAL RESULT | LIMITS/*DILUTION | UNITS OF MEASURE | TEST METHOD | DATE | TECHN |
|-------------------------------|--------------|------------------|------------------|-------------|----------|-------|
| 85 % Off | 646 | 1 | Deg F | ASTM D-2887 | | |
| 86 % Off | 650 | 1 | Deg F | ASTM D-2887 | | |
| 87 % Off | 654 | 1 | Deg F | ASTM D-2887 | | |
| 88 % Off | 658 | 1 | Deg F | ASTM D-2887 | | |
| 89 % Off | 663 | 1 | Deg F | ASTM D-2887 | | |
| 90 % Off | 668 | 1 | Deg F | ASTM D-2887 | | |
| 91 % Off | 673 | 1 | Deg F | ASTM D-2887 | | |
| 92 % Off | 679 | 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 | 702 | 1 | Deg F | ASTM D-2887 | | |
| 96 % Off | 715 | 1 | Deg F | ASTM D-2887 | | |
| 97 % Off | 733 | 1 | Deg F | ASTM D-2887 | | |
| 98 % Off | 763 | 1 | Deg F | ASTM D-2887 | | |
| 99 % Off | 809 | 1 | Deg F | ASTM D-2887 | | |
| FBP | 835 | 1 | Deg F | ASTM D-2887 | | |
| Bottom Sediment & Water | | *1 | | ASTM D-96 | 05/17/96 | SJ |
| B.S. & W. - Water Fraction | <0.05 | 0.05 | Volume % | ASTM D-96 | | |
| B.S. & W. - Sediment Fraction | 1.2 | 0.05 | Volume % | ASTM D-96 | | |
| B.S. & W. - Oil Fraction | 98.8 | 0.05 | Volume % | ASTM D-96 | | |

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CORE LABORATORIES

QUALITY ASSURANCE REPORT 05/17/96

JOB NUMBER: 960950

CUSTOMER: Curtis & Tompkins, Ltd.

ATTN: Tracy Babjar

Simulated Distillation, Distillate

DATE ANALYZED: 05/16/96

TIME ANALYZED: 11:40

METHOD: ASTM D-2887

QC NUMBER: 951512

B L A N K S

| 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 05/17/96

JOB NUMBER: 960950

CUSTOMER: Curtis & Tompkins, Ltd.

ATTN: Tracy Babjar

Simulated Distillation, Distillate

DATE ANALYZED: 05/16/96

TIME ANALYZED: 11:40

METHOD: ASTM D-2887

QC NUMBER: 951512

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 | 1 | 236 | 238 | 99 | 1 | Deg F |
| 5 % Off | " | " | 1 | 288 | 289 | 100 | 1 | Deg F |
| 10 % Off | " | " | 1 | 339 | 336 | 101 | 1 | Deg F |
| 15 % Off | " | " | 1 | 389 | 384 | 101 | 1 | Deg F |
| 20 % Off | " | " | 1 | 430 | 429 | 100 | 1 | Deg F |
| 30 % Off | " | " | 1 | 497 | 496 | 100 | 1 | Deg F |
| 40 % Off | " | " | 1 | 548 | 548 | 100 | 1 | Deg F |
| 50 % Off | " | " | 1 | 595 | 594 | 100 | 1 | Deg F |
| 60 % Off | " | " | 1 | 630 | 629 | 100 | 1 | Deg F |
| 70 % Off | " | " | 1 | 670 | 669 | 100 | 1 | Deg F |
| 80 % Off | " | " | 1 | 709 | 709 | 100 | 1 | Deg F |
| 85 % Off | " | " | 1 | 733 | 732 | 100 | 1 | Deg F |
| 90 % Off | " | " | 1 | 760 | 759 | 100 | 1 | Deg F |
| 95 % Off | " | " | 1 | 798 | 797 | 100 | 1 | Deg F |
| | " | " | 1 | 884 | 887 | 100 | 1 | Deg F |

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CORE LABORATORIES

QUALITY ASSURANCE REPORT 05/17/96

JOB NUMBER: 960950

CUSTOMER: Curtis & Tompkins, Ltd.

ATTN: Tracy Babjar

Simulated Distillation, Distillate

DATE ANALYZED: 05/16/96

TIME ANALYZED: 11:40

METHOD: ASTM D-2887

QC NUMBER: 951512

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 | 960950-1 | 1 | 311 | 312 | 0 | 1 | Deg F |
| 5 % Off | " | 960950-1 | 1 | 398 | 399 | 0 | 1 | Deg F |
| 10 % Off | " | 960950-1 | 1 | 428 | 430 | 0 | 1 | Deg F |
| 15 % Off | " | 960950-1 | 1 | 450 | 452 | 0 | 1 | Deg F |
| 20 % Off | " | 960950-1 | 1 | 471 | 474 | 1 | 1 | Deg F |
| 30 % Off | " | 960950-1 | 1 | 503 | 505 | 0 | 1 | Deg F |
| 40 % Off | " | 960950-1 | 1 | 530 | 532 | 0 | 1 | Deg F |
| 50 % Off | " | 960950-1 | 1 | 554 | 557 | 1 | 1 | Deg F |
| 60 % Off | " | 960950-1 | 1 | 577 | 580 | 1 | 1 | Deg F |
| 70 % Off | " | 960950-1 | 1 | 602 | 605 | 0 | 1 | Deg F |
| 80 % Off | " | 960950-1 | 1 | 629 | 632 | 0 | 1 | Deg F |
| 85 % Off | " | 960950-1 | 1 | 646 | 649 | 0 | 1 | Deg F |
| 90 % Off | " | 960950-1 | 1 | 668 | 670 | 0 | 1 | Deg F |
| 95 % Off | " | 960950-1 | 1 | 702 | 705 | 0 | 1 | Deg F |
| | " | 960950-1 | 1 | 835 | 840 | 1 | 1 | Deg F |

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CORE LABORATORIES

QUALITY ASSURANCE REPORT 05/17/96

JOB NUMBER: 960950

CUSTOMER: Curtis & Tompkins, Ltd.

ATTN: Tracy Babjar

Bottom Sediment And Water

DATE ANALYZED: 05/17/96 TIME ANALYZED: 10:05 METHOD: 'STM D-96

QC NUMBER:951531

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 | 960878-1 | 1 | 0.70 | 0.70 | 0 | 0.00 | Volume % |
| B.S. & W. - Sediment Fraction | Analytical | 960878-1 | 1 | 0.000 | 0.000 | 0 | 0.00 | Volume % |
| B.S. & W. - Oil Fraction | Analytical | 960878-1 | 1 | 99.3 | 99.3 | 0 | 0.00 | Volume % |

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CORE LABORATORIES

QUALITY ASSURANCE FOOTER 05/17/96

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

12555

PAGE 01 ANALYSIS REQUESTED

PROJECT NAME: KOT
 JOB NUMBER: 133.005 LAB: Curtis & Tompkins
 PROJECT CONTACT: Jeriana Alexander / Jerome DeVerrier TURNAROUND: Normal - 5 day
 SAMPLED BY: Jerome DeVerrier REQUESTED BY: Jeriana Alexander

| ANALYSIS REQUESTED | |
|-------------------------------|--|
| Boiling Point | |
| Hydrocarbon Analysis (5-c-50) | |
| Metals (Cam 17) | |
| 8240 | |
| 8270 | |
| PCBs | |
| Bottom Sediment + water | |

| LABORATORY I.D. NUMBER | SCI SAMPLE NUMBER | MATRIX | | | | | CONTAINERS | | | | METHOD PRESERVED | | | | | SAMPLING DATE | | | | NOTES | | | | | |
|------------------------|-----------------------|--------|------|-------|-----|--------------|------------|-------|------|------|------------------|-------|------|-----|------|---------------|-----|------|------|-------|---|---|---|---|---|
| | | WATER | SOIL | WASTE | AIR | oily product | VOA | LITER | PINT | TUBE | HCL | H2SO4 | HNO3 | ICE | NONE | MONTH | DAY | YEAR | TIME | | | | | | |
| -1 | Manhole - Oil Layer | | | | | X | | 2 | | | | | | X | | 05 | 13 | 96 | 0900 | X | X | X | X | X | X |
| -2 | Manhole - Water Layer | X | | | | | | 4 | 4 | | | | | X | X | 05 | 13 | 96 | 1000 | X | X | X | X | X | X |

| CHAIN OF CUSTODY RECORD | | | |
|--|--------------------------------|--|--------------------------------|
| RELEASED BY: (Signature) <i>Jeriana Alexander</i> | DATE / TIME 5/14/96 2:00 PM | RECEIVED BY: (Signature) <i>[Signature]</i> | DATE / TIME 5-14-96 2:00 PM |
| 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 |

COMMENTS & NOTES: * Please send chromatograms with analysis

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

APPENDIX D

FIELD INVESTIGATION PROTOCOLS

APPENDIX D

Field Investigation Protocols

A. Monitoring Well Installation

Three monitoring wells (SCIMW-1 through SCIMW-3) 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. A well schematic is 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-1 and

SCIMW-2 and the lower 13 feet of Well SCIMW-3 consists of machine-slotted well screen having 0.01-inch slots. The remaining portion of the wells consists of blank pipe. The well was provided with a bottom cap and locking top cap. The well screen is encased in a filter composed of Lonestar No. 212 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 extends from just below the bottom of the well to about 0.5 feet in Wells SCIMW-1 and SCIMW-2 and 1 foot in Well SCIMW-3 above the screened section. A 0.5 feet to 1 foot thick bentonite pellet seal was placed above the sand filter. The bentonite pellets were hydrated using de-ionized 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.

B. Soil and Groundwater Sampling

Subsurface conditions were explored by drilling 31 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-18, SCI-20, SCI-23, SCI-24, and SCI-25 were located in the area of 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, 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 Blue Ice 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.

The wells were purged by bailing with a disposable bailer until temperature, pH, and conductivity measurements had 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.