File No. 8-90-421-SI

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REPORT OF SUPPLEMENTAL SUBSURFACE INVESTIGATION
FOR KAMUR INDUSTRIES, INC.
AT THE PLAZA CAR WASH
400 SAN PABLO AVENUE
ALBANY, CALIFORNIA
MAY 14, 1991

PREPARED FOR:
MR. MURRAY STEVENS
2351 SHORELINE DRIVE
ALAMEDA, CALIFORNIA 94501

BY:
SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD
SANTA CLARA, CALIFORNIA 95050

SOIL TECH ENGINEERING, INC.

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SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

May 14, 1991

File No. 8-90-421-SI

Kamur Industries
2351 Shoreline Drive
Alameda, California 94501

ATTENTION: MR. MURRAY STEVENS

SUBJECT: REPORT OF SUPPLEMENTAL SUBSURFACE INVESTIGATION FOR KAMUR INDUSTRIES, INC., AT THE PLAZA CAR WASH LOCATED AT 400 SAN PABLO AVENUE, ALBANY, CALIFORNIA

Dear Mr. Stevens:

Soil Tech Engineering, Inc. (STE), conducted a supplemental subsurface assessment at Plaza Car Wash, 400 San Pablo Avenue, in Albany, California during February and March 1991. Subsurface Consultants, Inc., conducted preliminary assessments in 1989, and their investigation detected elevated concentrations of petroleum hydrocarbons in the soil and shallow groundwater at this site. The purpose of the 1991 assessment was to further delineate the extent of petroleum hydrocarbons in the soil and groundwater. To accomplish these objectives, the scope of work was organized into the following tasks:

- Evaluate existing data;
- Auger and sample two soil borings;
- Analyze selected soil samples for petroleum hydrocarbons;
- Install and develop two additional groundwater monitoring wells;

- Sample all the wells including four on-site and one off-site (upgradient) wells
- Evaluate field and laboratory data and prepare a report of the assessment.

Alpha Geo Services (AGS) drilled two soil borings to a depth of 14 feet below the ground surface. The borings were converted to groundwater monitoring wells, and soil and groundwater samples were collected for laboratory analysis. The subsurface material at the site is an irregular layer of clayey silt and sandy clay, with some lenses of gravel.

AGS encountered groundwater during drilling at approximately seven feet below the ground surface. The measured static water level in the on-site monitoring wells was approximately 5 feet below the ground surface. The groundwater direction was northwest across the site.

Selected soil and groundwater samples were analyzed using EPA Method 5030 for Total Petroleum Hydrocarbons (TPH) and EPA Method 8020 for Benzene, Toluene, Ethylbenzene and Xylene (BTEX) compounds. Laboratory analytical reports for soil and groundwater samples confirm that TPH and BTEX compounds are present at low concentrations in the newly installed wells (STMW-1 and STMW-2). However, elevated levels of TPH and BTEX were detected in existing on-site wells MW-2 and MW-3. The off-site well OTMW-1 also had low levels of TPH and BTEX. Light free phase hydrocarbon was observed in well STMW-3 only.

Enclosed is the report on the supplemental subsurface investigation that STE did at the Plaza Car Wash.

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If you have any questions or require additional information, please feel free to contact our office at you convenience.

Sincerely,
SOIL TECH ENGINEERING, INC.

FRANK HAMEDI-FARD
GENERAL MANAGER

LAWRENCE KOO, P. E.
C. E. #34928

File No. 8-90-421-SI

REPORT OF SUPPLEMENTAL SUBSURFACE INVESTIGATION FOR KAMUR INDUSTRIES, INC. PLAZA CAR WASH SITE LOCATED AT 400 SAN PABLO AVENUE ALBANY, CALIFORNIA APRIL 26, 1991

INTRODUCTION:

This report presents the results of a supplemental subsurface assessment that Soil Tech Engineering, Inc. (STE), conducted during February and March 1991, at Plaza Car Wash, located at 400 San Pablo Avenue, in Albany, California (Figure 1). Kamur Industries requested that STE perform this work to further evaluate the nature and extent of subsurface hydrocarbons encountered during previous assessments by Subsurface Consultants, Inc. in August 1989 and International Technology in December 1989. The supplemental assessment was initiated in response to a request from the Alameda County Department of Health Services-Hazardous Material Program (ACHS-HMP) dated January 29, 1991, for additional information regarding soil and groundwater at this site.

PURPOSE:

The purpose of the subsurface assessment described in this report was to characterize and further delineate the extent of petroleum hydrocarbons in the soil and the shallow groundwater at this site.

SCOPE:

The scope of the work completed was intended to provide data to satisfy the objectives stated above. The basic tasks included in this assessment are summarized below:

- Evaluate existing data and prepare a work plan for a supplemental assessment. A work plan dated September 20, 1990, was prepared for ACHS-HMP for approval.
- Sample, treat, and dispose of the stockpiled contaminated soil. For a description of this task, see "Report on Soil Remediation at the Plaza Car Wash" dated May 12, 1991.
- Auger and sample two soil borings and convert them to groundwater monitoring wells.
- Develop two groundwater monitoring wells and sample all the wells including four on-site and one off-site well (i.e. the up-gradient well).
- Analyze groundwater and select soil samples for petroleum hydrocarbons.
- Evaluate field and laboratory data and prepare a report of the assessment.

SITE DESCRIPTION:

The site is located at 400 San Pablo Avenue, in Albany, California, approximately one mile east of San Francisco Bay (see Figure 1). The site is bordered by El Cerrito Creek to the north, San Pablo Avenue to the east and Adams Street to the west. The surrounding area consists of light commercial and residential sites (Figure 2).

BACKGROUND:

The site was vacant until the late 1950's when the Plaza Car Wash and the adjacent Norge Dry Cleaner buildings were constructed. The three underground fuel storage tanks were installed on the site in 1970.

The observation of petroleum free-product in the adjacent El Cerrito Creek, on July 3, 1989, prompted the Albany Fire Department to install absorbent materials and a boom as a temporary containment measure. A storm drain, which borders the site on the west, was found to be the source of the petroleum products discharged into the El Cerrito Creek.

The inventory reconciliation records for Plaza Car Wash, reviewed by Kamur Industries in July 1989, showed discrepancies in the unleaded gasoline inventory. A product line test, conducted in mid-July 1989, confirmed a small leak in the unleaded gasoline fuel lines beneath the pump island. The leak was repaired and approximately five to ten cubic yards of gasoline contaminated soil was removed from beneath the line. Analytical results of a composite sample of the excavated soil revealed a Total Petroleum Hydrocarbon (TPH) concentration of 7,500 parts per million (ppm).

PREVIOUS INVESTIGATION:

Subsurface Consultants, Inc. (SCI) was retained by Kamur Industries to perform a site assessment. In August 1989, SCI drilled five soil borings and obtained soil samples for laboratory analysis. Four of the soil borings were completed as monitoring

wells. Laboratory analysis showed the presence of gasoline contaminants in all soil and groundwater samples.

Per CRWQCB staff request, water samples were also obtained from El Cerrito Creek and the storm drain outlet on August 3, 1989. Laboratory analysis revealed high levels of dissolved hydrocarbons at the storm drain outlet and low levels approximately 20 feet down-stream.

A soil vapor study (SVS), conducted by SCI in the area of the Plaza Car Wash and adjacent properties, revealed the presence of hydro-carbon contamination in the soil.

On September 19, 1989, Pacific Pipeline Survey conducted a video inspection of the Adams Street storm drain. The inspection revealed excess concrete along the pipe bottom, a bend across the pipe section and large cracks in the pipe. The bend area was considered to be the most likely location for petroleum products to enter the storm drain pipe and eventually be discharged into El Cerrito Creek.

On October 10 and 11, 1989, Riedel Environmental Services, Inc. installed a sump on Adams Street adjacent to the damaged section of the storm drain for optimum groundwater level influence.

Storm drain pipe joints exposed during sump installation procedures were sealed with mortar. All excavated soils found to be contaminated (when screened with an organic vapor analyzer) were removed and stored on-site pending proper disposal. Stockpiled soils from the product line repair and sump installation areas were treated on-site and transported to the West Contra Costa Sanitary Landfill for disposal.

In December 1989, Kamur Industries retained International Technology Environmental Services (ITES) to conduct the monitoring and sampling of on-site monitoring wells, the Adams Street sump and El Cerrito Creek. The sampling was conducted on a monthly basis from December 1989 through May 1990. All on-site wells showed high levels of dissolved hydrocarbons and one well showed traces of floating product. The sump also indicated high levels of dissolved hydrocarbons. The El Cerrito Creek samples, taken after each significant rainstorm, showed non-detectable levels in the up-stream station; the storm drain outlet samples showed moderate levels of dissolved hydrocarbons and the down-stream station showed fairly low to non-detectable levels.

In September 1990, Kamur Industries, Inc., retained AGS and STE to remove three underground tanks, conduct soil sampling, and excavate, characterize and dispose of contaminated soil. In addition, STE conducted water sampling of El Cerrito Creek during rainy months per Regional Water Quality Control Board requirements and installed additional monitoring wells as requested by ACHS-HMP.

The details of tank removal, soil sampling and the excavation of the contaminated soil are described in the AGS and STE reports entitled "Removal of 3 Underground Storage Tanks" dated January 9, 1991 and "Underground Tank Soil Sampling and Excavation Report" dated January 15, 1991. The report on soil treatment and disposal is included in the STE report entitled "Report on Soil Remediation at the Plaza Car Wash" dated May 12, 1991.

SUPPLEMENTAL SUBSURFACE ASSESSMENT:

This section describes the methods and procedures used in soil boring and sampling, well installation, monitoring well developing, and soil and water sampling.

Soil Boring and Sampling:

Alpha Geo Services drilled two soil borings at the site on February 24, 1991. The locations of the two borings are shown in Figure 2. These borings were drilled to the depth of 14 feet below the ground surface using eight-inch I.D. hollow stem auger equipment. All down-hole equipment was steam cleaned before use and between boreholes to minimize the potential for cross-contamination.

The STE staff project engineer prepared a detailed lithologic log of each boring on-site. These logs provide a record of subsurface materials encountered, hydrogeologic information and the results of field screening of soil samples for volatile hydrocarbon compounds. Boring logs are included in Appendix "B" of this report.

Discrete soil samples were collected at five-foot depth intervals using a California modified sampler with stainless steel or brass liners. The deepest tube from each driven sample was immediately sealed with Teflon tape and plastic caps, then stored in a cold ice chest. A portion of the remaining soil from each sample was screened for volatile hydrocarbon compounds in the field using a photo-ionization detector (PID). Strict chain-of-custody procedures were followed throughout sample acquisition, storage and

transport. Copies of chain-of-custody records for soil sampling are included in Appendix "C" of this report.

Soil cuttings from drilling operations were placed on and covered with plastic sheeting and temporarily stored on-site pending the results of laboratory analyses. After review of the analytical results, the soil cuttings from drilling were mixed with the stockpiled soil from the tank excavation and treated at the site and disposed of at a Class III landfill. See "Report on Soil Remediation at the Plaza Car Wash" dated May 12, 1991.

Monitoring Wells Installation:

Two groundwater monitoring wells were installed in the soil borings augered by AGS immediately following the completion of each boring. The locations of these wells are shown in Figure 2. The rationale for selecting these well locations is as follows:

- STMW-1 replaced the former down-gradient wells MW-1 and MW-4, which were abandoned during soil excavation of the tank complex, and provided soil and groundwater data down-gradient of the former underground tank complex.

- STMW-2 cross-gradient well north of the former tank complex provides soil and groundwater data near the northern property boundary.

- OTMW-5 is an existing off-site well located up-gradient of the property installed for the paint company located up-gradient and south of the property. The well is used for monitoring and sampling.

The two new monitoring wells were constructed of two-inch diameter schedule 40 PVC flush-threaded casing. The slotted interval extends through the interval where water was initially encountered in each boring. Blank casing extends from the top of the slotted casing to the surface. Schematic diagrams of the construction details for wells STMW-1 and STMW-2 are attached and included in Appendix "B" of this report.

The annular space between the casing and the borehole was filled with a gravel pack of washed sand from the bottom of the hole to approximately one foot above the slotted interval. A one foot plug of hydrated crushed bentonite was placed immediately above the gravel pack. The remainder of the annular space was filled with cement grout. A traffic box was installed in concrete slightly above grade to protect each well, and the wells were secured with locking expansion plugs.

The ground surface and top-of-casing elevations of the two new wells and two existing wells on-site and the one off-site were surveyed relative to a fixed datum. This data was used to calculate the local groundwater gradient and develop a groundwater contour map (Figure 3). Monitoring well permits were obtained from the Alameda County Flood Control and Water Conservation District (ACFCWD) prior to initiating field operations. Copies of these permits are included in Appendix "D" of this report.

Well Development and Sampling:

On March 6, 1991, two new wells (STMW-1 and STMW-2) were developed. Prior to development, the newly installed wells were

sounded to determine the depth of water and potential presence of free phase hydrocarbons. No indication of free phase hydrocarbon was observed in the two new wells. Measured water levels in each well were shallower than the depth at which water was first encountered during drilling.

The monitoring wells were developed by mechanical surging and bailing until the water was reasonably free of sediment. The development equipment was steam cleaned prior to use in each well to reduce the potential for cross-contamination. Approximately 25 gallons of water was produced from each well during development. This water was temporarily stored on-site in labeled DOT 17H drums pending the results of laboratory analyses. Arrangements were made for appropriate off-site disposal of this material.

STE collected a groundwater sample from all on-site wells STMW-1, STMW-2, MW-2 and MW-3, and from off-site well OTMW-5 on March 11, 1991. Approximately five well volumes of water were removed from each well using a bailer before the sample was collected. Temperature, pH and conductivity were allowed to stabilize before the collection of each sample. A Teflon bailer was used for sample collection. Water sampling equipment was decontaminated before and after each well using non-phosphate soap and water wash, followed by double rinsing in potable and de-ionized water.

Groundwater samples were contained in laboratory-cleaned 40 milli-liter glass vials with Teflon-lined septa. After labeling, they were immediately stored in a cold ice chest. Strict chain-of-custody procedures were maintained during sample acquisition,

storage and transport. A copy of the chain-of-custody report is included in Appendix "C" of this report.

Drilling, installation of monitoring wells and sampling are described in the STE's Standard Operation Procedures which are included in Appendix "A" of this report.

SITE GEOLOGY AND HYDROGEOLOGY:

This section describes site-specific geology and hydrogeology. This information has been developed from soil borings and monitoring wells completed recently at the site by STE and Subsurface Consultants (SCI) in 1989.

Site Geology:

STE explored the soil stratigraphy beneath the site by augering two shallow borings. Both of these borings were completed as monitoring wells (STMW-1 and STMW-2). SCI augered five borings and completed four of these as wells MW-1 to MW-4. In November 1990, two of these monitoring wells (MW-1 and MW-4) were destroyed during the excavation of contaminated soil from underground fuel storage tanks. However, monitoring wells MW-2 and MW-3 remain intact, and the locations of these wells are shown on Figure 2. Descriptions of the subsurface materials encountered are provided on the boring logs included in Appendix "B" of this report.

Boring logs indicate that the native soil beneath the site consists of an irregularly layered sequence of clayey silt, sandy clay and some lenses of gravel.

Site Hydrogeology:

Groundwater was encountered during drilling at approximately seven feet below the ground surface. Measured static water levels in monitoring wells on-site ranged from about approximately 5 feet below the ground surface. Water level and well construction data are included in Table 3.

A groundwater flow direction map was constructed using groundwater elevation data from on-site wells (Figure 3). The groundwater direction was in the northerly direction in April 1991.

RESULTS OF LABORATORY ANALYSES:

This section presents the results of laboratory analyses for soil and groundwater samples collected during this assessment. Copies of laboratory reports and chain-of-custody records are included in Appendix "C " of this report.

Results of Laboratory Analysis of Soil Samples:

Two soil samples from borings B1 to B2 were submitted to Anametrix, Inc. of San Jose on February 25, 1991. These samples were analyzed using EPA Method 5030 for Total Petroleum Hydrocarbons as Gasoline (TPHg), and EPA Method 8020 for differentiation of Benzene, Toluene, Ethylbenzene and Xylene (BTEX). Copies of laboratory reports and the chain-of-custody record for these samples are included in Appendix "C" of this report.

The results of laboratory analysis of soil samples are presented in Table 1. These results show the presence of Total Petroleum

Hydro-carbon as Gasoline at elevated concentrations in the shallow soil (1200 mg/kg and 510 mg/kg). BTEX compounds were also detected in the soil samples analyzed.

Results of Laboratory Analysis of Groundwater Samples:

Groundwater samples from on-site wells (STMW-1, STMW-2, MW-2 and MW-4) and off-site well OTMW-5 were submitted to Anametrix, Inc. in San Jose on March 13, 1991. Samples were analyzed by EPA Method 5030 for TPH as Gasoline and EPA Method 8020 for BTEX. Copies of laboratory reports and the chain-of-custody record for these samples are included in Appendix "C" of this report.

The results of groundwater samples are presented in Table 2. These results show the presence of petroleum hydrocarbon compounds in all of the wells. Low levels of TPHg and BTEX were detected in the up-gradient well OTMW-5. The new wells (STMW-1 and STMW-2) show low concentration of TPH and BTX, which were less than 1 part per million (ppm). No Ethylbenzene was detected in well STMW-1 and STMW-2. The existing down-gradient on-site wells MW-2 and MW-3 did have elevated levels of TPHg and BTEX.

During sampling, light petroleum sheen was noted in well MW-3 only, and mild petroleum odors were detected in well MW-2 and OTMW-5.

FINDINGS:

Based on field and laboratory data generated during this supplemental subsurface investigation, the following are STE's findings:

- The soil material beneath the site consists of an irregular layer of clayey silt and sandy clay with some lenses of gravel.

- Groundwater was encountered beneath the site during drilling at approximately 7 feet below the ground surface. Measured static water levels in monitoring wells on-site ranged from approximately 5 feet below ground surface. The piezometer surface slopes north to northwest across the site.

- TPH and BTEX compounds were reported in soil samples from the two newly installed wells at the depth of five feet.

- No free phase hydrocarbons or odors were observed in the newly installed wells in March of 1991. However, light sheen and odor were noted in existing on-site well MW-3. Well MW-2 and off-site well OTMW-5 also had a mild petroleum odor.

- All wells did show petroleum hydrocarbon compounds. TPH and BTEX concentrations were less than 1 ppm for wells STMW-1, STMW-2 and OTMW-5, but elevated levels of TPH and BTEX were detected in down-gradient wells MW-2 and MW-3. This suggests that petroleum hydrocarbons have migrated beyond the former tank complex area.

RECOMMENDATIONS:

The water analytical results indicate that the groundwater has been impacted by both an on-site inadvertent leak and a possible off-site source. Since an off-site source has been discovered, we recommend the following:

Phase I:

- Review all data from the off-site well (OTMW-5) for both soil and groundwater.
- Conduct three more quarterly groundwater samplings of on-site and off-site to complete one year cycle.

Phase II:

Design and install a groundwater treatment system after evaluating the data from the proposed Phase I investigation.

Since substantial amounts of contaminated soil and groundwater were removed during the tank removal in 1990, STE believes that the proposed additional monitoring and sampling will give sufficient data to evaluate and design a remedial alternative for soil and groundwater clean up if necessary.

The above recommendations should be discussed with the ACHS-HMP staff for approval. This report should be submitted to ACHS-HMP and the California Regional Water Quality Control Board.

LIMITATIONS:

This report and the associated work has been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. The contents of this report reflect the conditions of the site at this particular time. The findings of this reports are based on:

1) The exploratory test borings drilled at the site.

2) The observations of field personnel.

3) Referenced documents.

4) The results of laboratory analyses performed by a state-certified laboratory.

It is possible that variations in the soil and groundwater could exist beyond the points explored in this investigation. Also, changes in groundwater conditions of a property can occur with the passage of time due to variations in rainfall, temperature, regional water usage and other natural processes or the works of man on this property or adjacent properties.

This report is issued with the understanding that it is the responsibility of the owner or his/her representative to ensure that the information and recommendations contained herein are called to the attention of the Local Environmental Agency.

Services performed by STE have been in accordance with generally accepted environmental professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. This report is not meant to represent a legal opinion. No other warranty, express or implied, is made.

TABLE 1
SOIL ANALYTICAL RESULTS
IN
MILLIGRAM PER KILOGRAM (mg/kg)

Sample No.	Depth feet	TPHg	B	T	E	X
SW-1-5	5	1200	27	98	24	120
SW-2-5	5	510	13	35	8.9	43
Detection Limit		0.5	0.005	0.005	0.005	0.005

TPHg = Total Petroleum Hydrocarbons as Gasoline
BTEX = Benzene, Toluene, Ethylbenzene, Xylene

TABLE 2
WATER ANALYTICAL RESULTS
IN
PARTS PER MILLION (ppm)

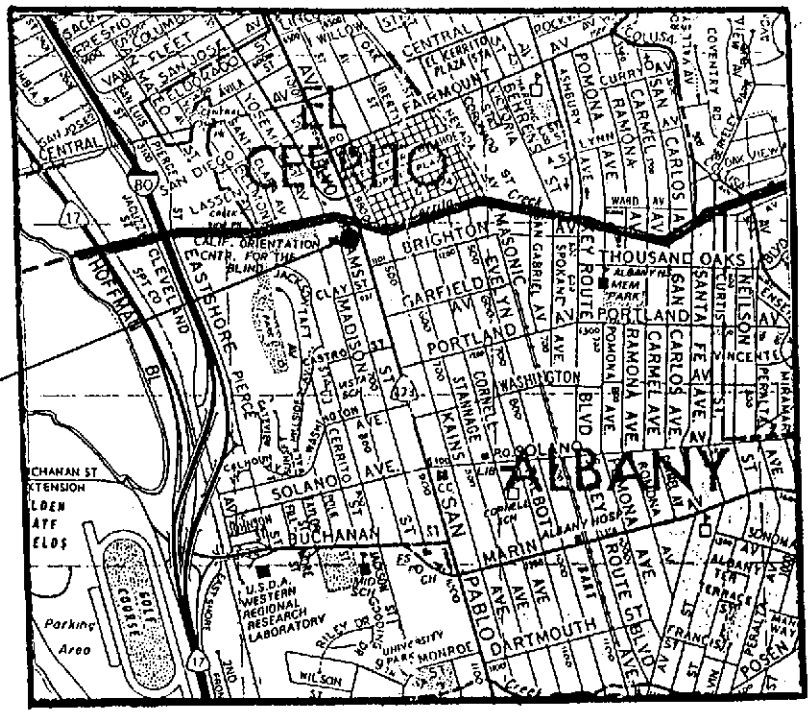
Sample No.	TPHg	B	T	E	X
STMW-1	0.85	0.1	0.007	ND	0.15
STMW-2	0.17	0.001	0.0017	ND	0.028
MW-2*	25.0	2.6	4.4	ND	5.8
MW-3*	47.0	9.1	9.9	0.27	8.1
OTMW-5**	0.12	0.046	0.012	0.001	0.004
Detection Limit	0.05	0.005	0.005	0.005	0.005

** = Off-site up-gradient well
* = Existing on-site well

TABLE 3
GROUNDWATER MONITORING

Well No.	Water Elevation feet	Product Thickness	Observation Sheen	Odor
STMW-1		ND	None	No
STMW-2		ND	None	No
MW-2		ND	None	Light Petro.
MW-3		ND	Light Brown	Moderate Petro.
OTMW-5		ND	None	Light Petro.

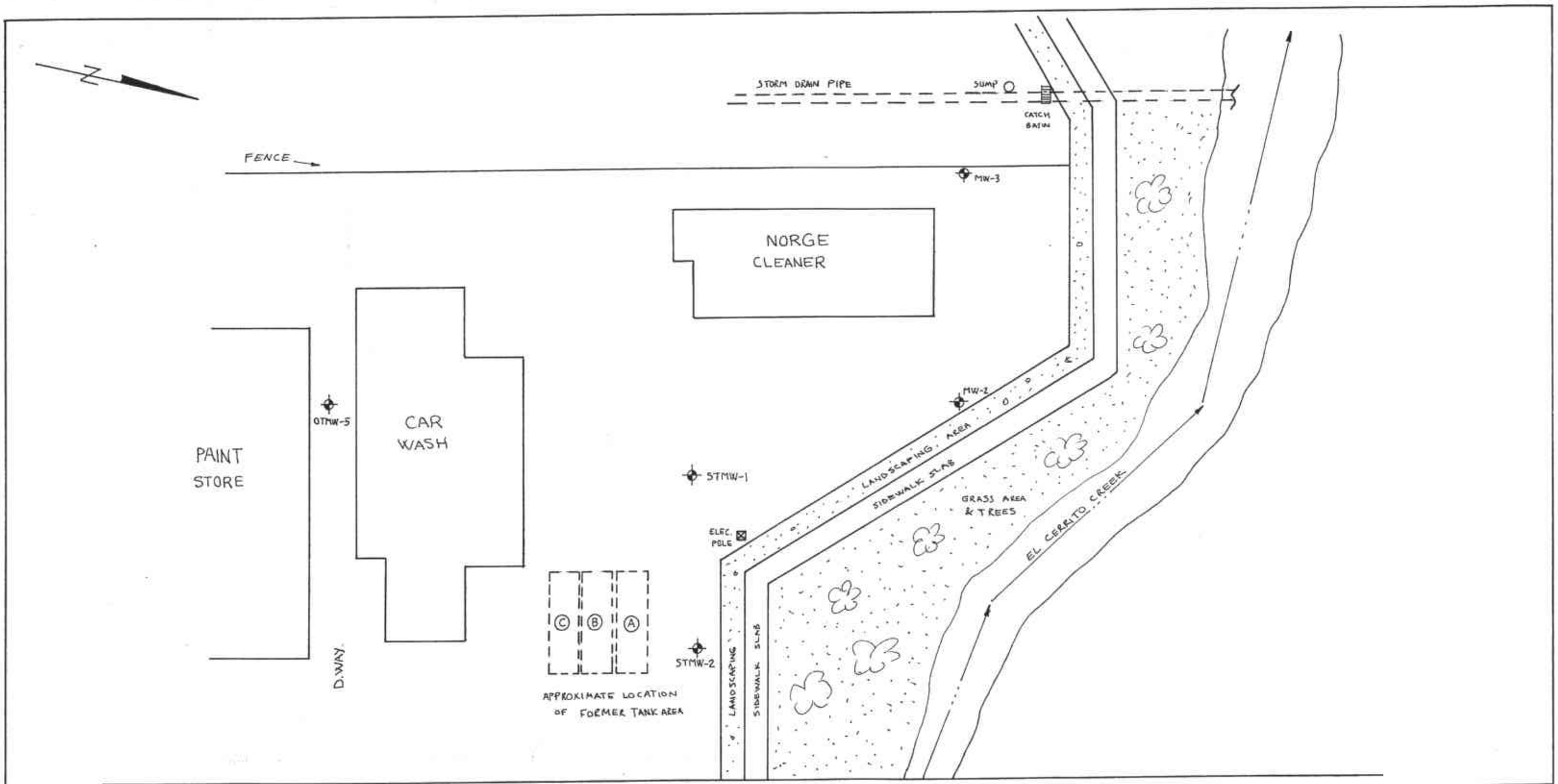
Petro. = Petroleum
ND = Not Detected



THOMAS BROS. MAP, 1982 EDITION
ALAMEDA COUNTY

PAGE 1 D2

Figure 1: Vicinity Map

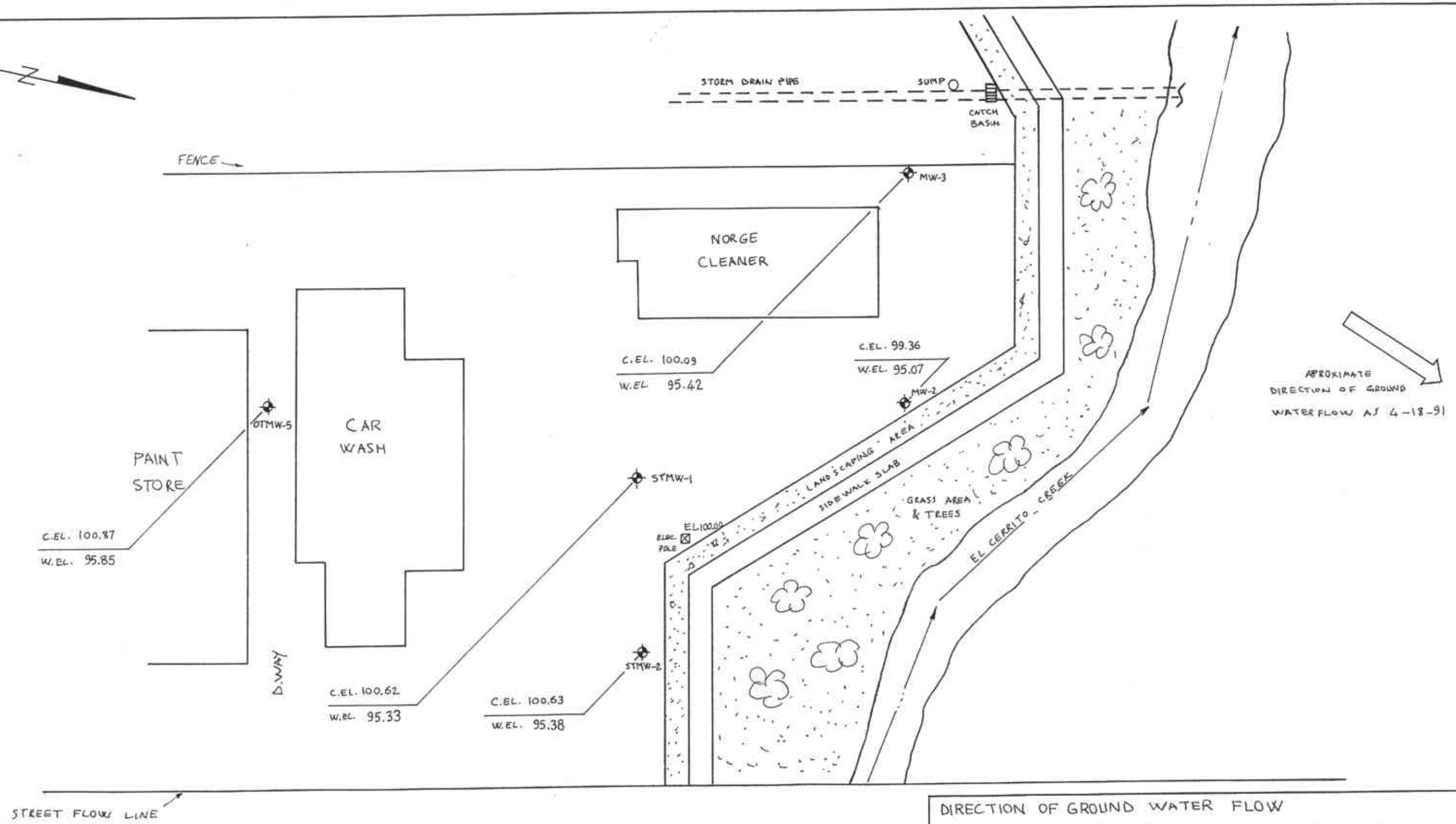


LOCATION OF THE MONITORING WELLS

400 SAN PABLO AVE. ALBANY CA

1"=20'	PROJECT NO. 8-90-421-S1	FIG-2
DRAWN BY N.A.		2-24-91

SOIL TECH ENGINEERING INC.
298 BROKAW RD. SANTA CLARA CA 95050



DIRECTION OF GROUND WATER FLOW

400 SAN PABLO AVE. ALBANY CA

1"=30'	PROJECT NO 8-90-421-SI	FIG-3
DRAWN BY N.A.		4-18-91

SOIL TECH ENGINEERING INC.
298 BROKAW RD. SANTA CLARA CA 95050

DRILLING AND SOIL SAMPLING PROCEDURE

A truck mounted drill rig, using a continuous solid flight, hollow-stem auger was used in drilling the soil boring to the desired depth (see Boring Log for more details).

Prior to drilling, all drilling equipment (i.e. auger, pin, drilling head) was thoroughly steam-cleaned to minimize the possibility of cross-contamination and/or vertical migration of possible contaminants.

In addition, prior to obtaining each individual soil sample, all sampling tools, including the split-spoon sampler and brass liners were thoroughly washed in a Trisodium Phosphate (TSP) solution followed by a rinse in distilled water.

During the drilling operation, relatively undisturbed soil samples were taken from the required depth by forcing a 2-inch I.D., split-spoon sampler insert with a brass liner into the ground by means of a 140-lb. hammer falling 30-inches or by hydraulic forces at various depths.

The samplers withdrew relatively undisturbed soil. In general, the first section of soil from the sampler (shoe) was used in the field for lithologic inspection and evidence of contamination. The selected brass liner was immediately trimmed, the ends of the brass liner was covered tightly with aluminum foil and plastic caps, sealed with tape, labeled, placed in a plastic bag and stored in

an ice chest in order to minimize the escape of any volatiles present in the samples. Soil samples for analysis were sent to a state-certified hazardous waste laboratory accompanied by a chain-of-custody record.

Soil samples collected at each sampling interval were inspected for possible contamination (odor or peculiar colors). Soil vapor concentrations were measured in the field by using Photoionization Detector (PID), PhotoVac Tip Air Analyzer. The purpose of this field analysis is to qualitatively determine the presence or absence of hydrocarbons and to establish which soil samples will be analyzed at the laboratory. The soil sample is sealed in a ZipLoc plastic bag and placed in the sun to enhance volatilization of the hydrocarbons from the sample. The data is recorded on the drilling log at the depth corresponding to the sampling point.

Other soil samples may be collected to document the stratigraphy and estimate relative permeability of the subsurface materials.

Soil tailings obtained during drilling were stored at site, pending the analytical test results, for proper disposal.

MONITORING WELL INSTALLATION

Prior to well installation, all the necessary permits were obtained from the local regulatory agencies.

The boreholes for monitor wells were drilled with the diameter at least two inches larger than the casing outside diameter (O.D.).

Monitor wells are cased with threaded, factory-perforated and blank, schedule 40 P.V.C. The perforated interval consists of slotted casing, generally 0.010 to 0.040 inch wide by 1.5 inch long slot size, with 42 slots per foot (slots which match formation grain size as determined by field grain-size distribution analysis), a P.V.C. cap is fastened to the bottom of the casing (no solvents, adhesive, or cements are used). The well casing is thoroughly washed and steam-cleaned.

After setting the casing inside the borehole, kiln dried sand or gravel filter material was poured into the annular space to fill from the bottom of the boring to 2 feet above the perforated interval. A 1 to 2 feet thick bentonite plug was placed above this filter material to prevent grout from infiltrating down into the filter material. Approximately 1 to 2 gallon of distilled water was added to hydrate the bentonite pellets. the well was then sealed from the top of the bentonite seal to the surface with concrete or neat cement containing about 5% bentonite (see Well Construction Detail).

For protection of the well from vandalism and surface water contamination, Christy boxes with a special type of Allen screw were installed around the well head, (for wells in parking lots, driveways and building areas). Steel stove pipes with padlocks are usually set over well-heads in landscaped areas.

In general, groundwater monitoring wells shall extend to the base of the upper aquifer, as defined by the consistent (less than 5 feet thick) clay layer below the upper aquifer, or at least 10 to 15 feet below the top of the upper aquifer, whichever is shallower. The wells shall not extend through the laterally extensive clay layer below the upper aquifer. The wells shall be terminated 1 to 2 feet into such a clay layer.

WELL DEVELOPMENT

For all newly installed groundwater monitoring wells, the well casing, filter pack and adjacent formations shall be cleared of disturbed sediment and water.

Well development techniques include pumping, bailing, surging, swabbing, jetting, flushing or air lifting by using a stainless steel or Teflon bailer, a submersible stainless steel pump, or air lift pump. The well development continues until the discharged water appears to be relatively free of all turbidity.

All water and sediment generated by well development was collected in 55-gallon steel drums (Department of Transportation approved) closed-head (17-H) for temporarily storage, and are then disposed of properly, depending on analytical results.

To assure that cross-contamination does not occur between wells, all well development tools were thoroughly washed in a Trisodium Phosphate (TSP) solution followed by a rinse in distilled water or steam-cleaned before each well development.

GROUNDWATER SAMPLING

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer, cables, bladder pump, discharge lines and etc...) were cleaned by pumping a TSP water solution followed by distilled water.

Prior to purging, the well "Water Sampling Field Survey Forms" were filled out (depth to water and total depth of water column, measured and recorded). The well was then bailed or pumped to remove four to ten well volumes or until the discharged water temperature, conductivity and pH stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another.

The groundwater sample was collected when the water level in the well recovered to 80% of its static level.

Forty milliliter (ml.), glass volatile organic analysis (VOA) vials with Teflon septa were used as sample containers. The groundwater sample is decanted into each VOA vial in such a manner that there is a meniscus at the top. The cap is quickly placed over the top of the vial and securely tightened. The VOA vial is then inverted and tapped to see if air bubbles are present. If none are present, the sample is labeled and refrigerated for delivery under chain-of-custody to the laboratory. Label information includes a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

File No. 8-90-421-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-1
Date Drilled: 2/24/91	Approx. Elevation	Boring Diameter 8-inch

Drilling Method: Mobile drill rig B-40L

Sampling Method:

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					6-inch asphalt, 3-inch baserock. Light brown silty gravelly clay.
2					
3					Dark brown to black sandy clay with some samll and medium size gravel.
4					
5	SW-1-5				▼ Static groundwater level (5 feet). Black silty clay, stiff with some pea gravel, petroleum odor.
6					
7					▽ Groundwater level encountered at 7 feet.
8					Medium brown silty clay with some pea gravel.
9					
10					
11					Light brown silty clay with some pea gravel.
12					
13					
14					Boring terminated at 14 feet.
15					
16					

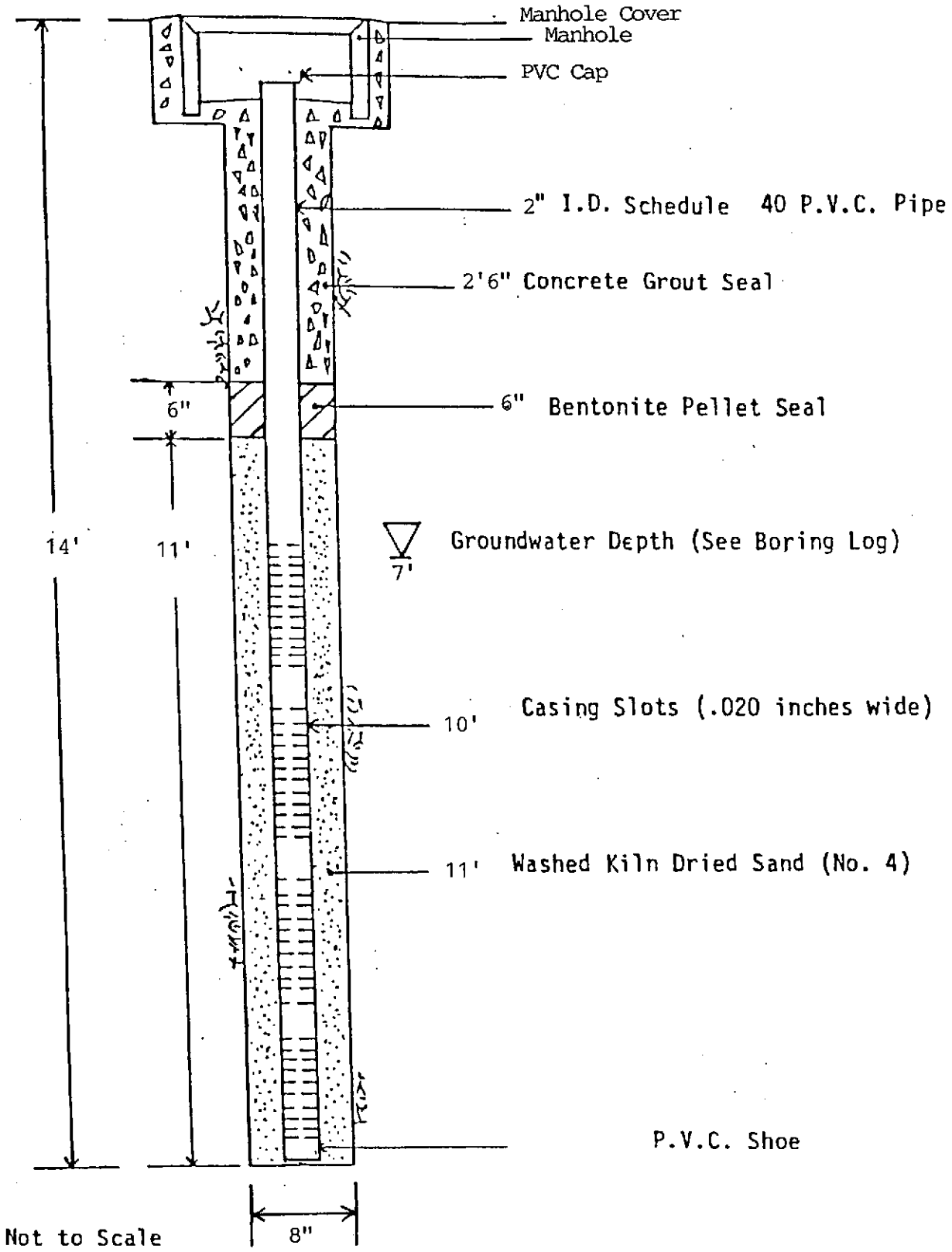
Remarks

File No. 8-90-421-SI

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-2
Date Drilled: 2/24/91	Approx. Elevation	Boring Diameter 8-inch
Drilling Method: Mobile drill rig B-40L		Sampling Method

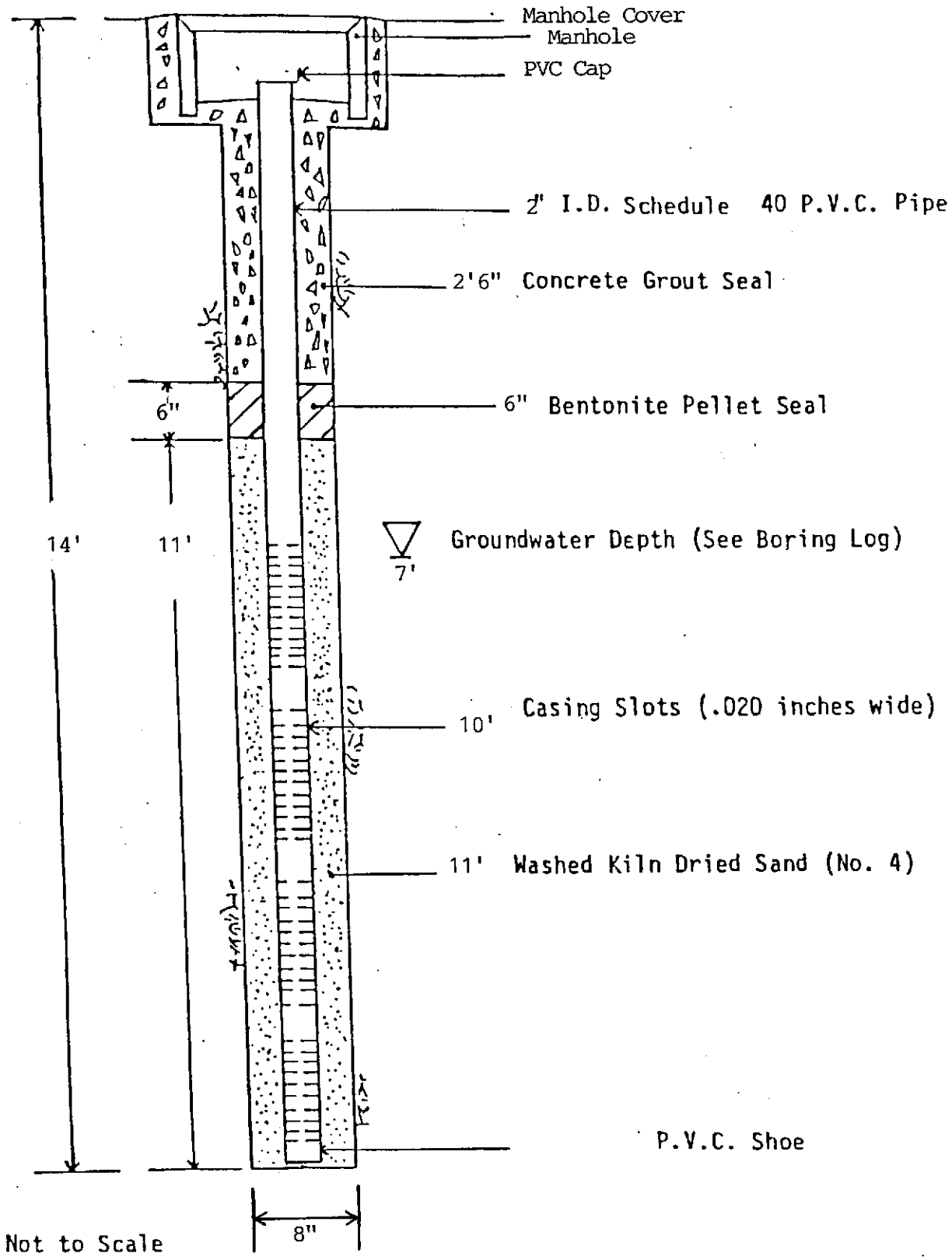
Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					4-inch asphalt, 3-inch baserock. Medium brown silty gravelly clay (small to medium size gravel).
2					
3					
4					Dark brown to black silty clay.
5	SW-2-5				▼ Static groundwater level (5 feet). Black silty clay some pea gravel, stiff, petroleum odor.
6					
7					▽ Groundwater level encountered at 7 feet.
8					
9					
10					Medium brown silty clay with some pea gravel.
11					
12					Light brown silty clay with some pea gravel.
13					
14					Boring terminated at 14 feet.
15					
16					

Remarks



STMW-1

Figure 4 - Piezometer Schematic



SIMW-2

Figure 5 - Piezometer Schematic

SOIL TECH ENGINEERING, INC.

ANAMETRIX INC
Environmental & Analytical Chemistry
761 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9102260
Date Received : 02/25/91
Project ID : 8-90-421-SI
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9102260- 1	1
9102260- 2	2

This report consists of 3 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Burt Sutherland
Laboratory Director

2-28-91
Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9102260
Date Received : 02/25/91
Project ID : 8-90-421-SI
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9102260- 1	1	SOIL	02/24/91	TPHg/BTEX
9102260- 2	2	SOIL	02/24/91	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9102260
Date Received : 02/25/91
Project ID : 8-90-421-SI
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Department Supervisor Date

Chemist Date 2/28/91

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9102260
Matrix : SOIL
Date Sampled : 02/24/91

Project Number : 8-90-421-SI
Date Released : 02/28/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# 1 -01	Sample I.D.# 2 -02	Sample I.D.# 21B0227A BLANK
Benzene	0.005	27	13	ND
Toluene	0.005	98	35	ND
Ethylbenzene	0.005	24	8.9	ND
Total Xylenes	0.005	120	43	ND
TPH as Gasoline	0.5	1200	510	ND
% Surrogate Recovery		120%	108%	96%
Instrument I.D.		HP21	HP21	HP21
Date Analyzed		02/27/91	02/27/91	02/27/91
RLMF		500	500	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.
Anametrix Control limits for surrogate recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Garth Voyt 2/28/91
Analyst Date

Cheryl Palmer 2/28/91
Supervisor Date

CHAIN OF CUSTODY RECORD

Anametrix

PROJ. NO.	NAME
8-90-421-SI	400 SAN PABLO AVE. ALBANY

SAMPLERS: (Signature) N. Amelio

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested (2) TPHG/BTEX	REMARKS
								9102260
1	2/24/91	9[15] AM	✓		SW-1-5	1	✓	Cold, no headspace, proper container (ok?)
2	2/24/91	10[20] AM	✓		SW-2-5	1	✓	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Receive by: (Signature)
	2/25/91 12:00	2-25-91 1200	2/25/91 1215		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time: 02/25/91 1215	Remarks: N.T.A. Samples in ice from 1215 to 1140	

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

CHAIN OF CUSTODY [illegible]

PROJ. NO.	NAME
8-90-421-SI	400 SAN PABLO AVE. ALBANY

SAMPLERS: *(Signature)* N. Amelio

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	Analyses Requested (2) TPHG/BTEX	REMARKS
1	2/24/91	9[15] AM	✓		SW-1-5	1	✓	
2	2/24/91	10[20] AM	✓		SW-2-5	1	✓	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
[signature]	2/25/91 12:00	[signature] 2-25-91 1200			
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
				N. T. A.	

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

ANAMETRIX INC
Environmental & Analytical Chemistry
2261 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9103170
Date Received : 03/13/91
Project ID : 8-90-421-SI
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9103170- 1	1
9103170- 2	2
9103170- 3	3
9103170- 4	4
9103170- 5	5

This report consists of 4 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Burt Sutherland
Laboratory Director

3-27-91
Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9103170
Date Received : 03/13/91
Project ID : 8-90-421-SI
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9103170- 1	1	WATER	03/11/91	TPHg/BTEX
9103170- 2	2	WATER	03/11/91	TPHg/BTEX
9103170- 3	3	WATER	03/11/91	TPHg/BTEX
9103170- 4	4	WATER	03/11/91	TPHg/BTEX
9103170- 5	5	WATER	03/11/91	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. FRANK HAMEDI
SOIL TECH ENGINEERING
298 BROKAW ROAD
SANTA CLARA, CA 95050

Workorder # : 9103170
Date Received : 03/13/91
Project ID : 8-90-421-SI
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Balsmeier 3/27/91
Department Supervisor Date

Heath Voigt 3/26/91
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9103170
Matrix : WATER
Date Sampled : 03/11/91

Project Number : 8-90-421-SI
Date Released : 03/26/91

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# 1 -01	Sample I.D.# 2 -02	Sample I.D.# 3 -03	Sample I.D.# 4 -04	Sample I.D.# 5 -05
Benzene	0.5	100	1.0	2600	9100	46
Toluene	0.5	7	1.7	4400	9900	12
Ethylbenzene	0.5	ND	ND	ND	270	1.2
Total Xylenes	0.5	150	28	5800	8100	4.1
TPH as Gasoline	50	850	170	25000	47000	120
% Surrogate Recovery		98%	128%	106%	98%	145%
Instrument I.D.		HP21	HP21	HP21	HP21	HP4
Date Analyzed		03/20/91	03/19/91	03/20/91	03/20/91	03/18/91
RLMF		5	1	250	500	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.
Anametrix control limits for surrogate recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Garth Voigt 3/26/91
Analyst Date

Cheryl Bateman 3/27/91
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9103170
Matrix : WATER
Date Sampled : 03/11/91

Project Number : 8-90-421-SI
Date Released : 03/26/91

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# 21B0320C BLANK	Sample I.D.# 21B0319A BLANK	Sample I.D.# 04B0318A BLANK
Benzene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND
% Surrogate Recovery		97%	107%	111%
Instrument I.D.		HP21	HP21	HP4
Date Analyzed		03/20/91	03/19/91	03/18/91
RLMF		1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.
RLMF - Reporting Limit Multiplication Factor.
Anametrix control limits for surrogate recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 3.27.91 Date

Supervisor 3/27/91 Date

9103170 Anametrix

CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
8-90-421-SI	PLAZA CARWASH 400 SAN PABLO AVE. ALBANY

SAMPLERS: *(Signature)* [signature]

ANALYSES REQUESTED: TPHG / BTE&X (2)

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	TPHG / BTE&X						REMARKS
1	3/11/91	15 30		✓	STMW-1	5	✓						3x40ml; 2x1 liter on 10/28 HOLD for all samples (ND) per Diane 03/13/91
2	3/11/91	15 45		✓	STMW-2	5	✓						↓
3	3/11/91	16 30		✓	MW-2	5	✓						
4	3/11/91	16 15		✓	MW-3	5	✓						
5	3/11/91	16 00		✓	OTMW-5	5	✓						

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Diep Nguyen	3/13/91 11:55	[signature] 3/13/91 1155	[signature]	3/13/91 1210	
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*

Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks
		[signature]	03/13/91 1210	N.T.A.

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

■ (408) 866-0919 ■ (415) 791-6406

CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
8-90-421-SI	PLAZA CARWASH 400 SAN PABLO AVE. ALBANY

SAMPLERS: *(Signature)*

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG / BTEX	REMARKS
1	3/11/91	15:30		✓	STMW-1	5	✓	
2	3/11/91	15:45		✓	STMW-2	5	✓	
3	3/11/91	16:30		✓	MW-2	5	✓	
4	3/11/91	16:15		✓	MW-3	5	✓	
5	3/11/91	16:00		✓	OTMW-5	5	✓	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
Diep Nguyen	3/13/91 11:55	Penny S. Carrasco 3/13/91 1155			
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	
				N.T.A.	

SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94588 ♦ (415) 484-2600

11 February 1991

Alpha Geo Services, Inc.
298 Brokaw Road
Santa Clara, CA 95050

Gentlemen:

Enclosed is Groundwater Protection Ordinance permit 91075 for a monitoring well construction project at 400 San Pablo Avenue in Albany for Murray Stevens.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number.

If you have any questions, please contact Wyman Hong or Craig Mayfield at 484-2600.

Very truly yours,

J. Killingstad, Chief
Water Resources Engineering

WH:mm
Enc.

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94566 ♦ (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

(1) LOCATION OF PROJECT PLAZA CAR WASH
400 SAN PABLO AVE.
ALBANY, CA 94706

(2) CLIENT
Name MURRAY T. STEVENS
Address 400 SAN PABLO AVE. Phone (415) 523-7866
City ALBANY CA Zip 94706

(3) APPLICANT
Name ALPHA GEO SERVICES
Address 208 BROKAW RD. Phone (408) 988-1032
City SANTA CLARA CA Zip 95050

(4) DESCRIPTION OF PROJECT

Water Well Construction	X	Geotechnical Investigation	
Cathodic Protection		General	
Well Destruction		Contamination	

(5) PROPOSED WATER WELL USE

Domestic		Industrial		Irrigation	
Municipal		Monitoring	X	Other	

(6) PROPOSED CONSTRUCTION
Drilling Method:
Mud Rotary ____ Air Rotary ____ Auger X
Cable ____ Other ____

DRILLER'S LICENSE NO. 507520

WELL PROJECTS

Drill Hole Diameter	8 in.	Maximum Depth	25 ft.
Casing Diameter	2 in.		
Surface Seal Depth	7 ft.	Number	2

GEOTECHNICAL PROJECTS

Number of Borings		Maximum Depth	ft.
Hole Diameter	in.		

(7) ESTIMATED STARTING DATE 2/20/91
ESTIMATED COMPLETION DATE 2/21/91

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

APPLICANT'S SIGNATURE [signature] Date 2/8/91

FOR OFFICE USE

PERMIT NUMBER ____
LOCATION NUMBER ____

PERMIT CONDITIONS

Circled Permit Requirements Apply

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

B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal Industrial wells or 20 feet for domestic, irri tion, and monitoring wells unless a lesser de is specially approved.

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

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

E. WELL DESTRUCTION. See attached.

Approved ____ Date ____

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94566 ♦ (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

PERMIT NUMBER 91075

LOCATION NUMBER

(1) LOCATION OF PROJECT PLAZA CAR WASH
400 SAN PABLO AVE.
ALBANY, CA 94706

(2) CLIENT
Name MURRAY T. STEVENS
Address 400 SAN PABLO AVE. Phone (415) 523-7866
City ALBANY CA Zip 94706

(3) APPLICANT
Name ALPHA GEO SERVICES
Address 298 BROKAW Rd. Phone (408) 988-1032
City SANTA CLARA CA Zip 95050

(4) DESCRIPTION OF PROJECT
Water Well Construction X Geotechnical Investigation
Cathodic Protection ___ General ___
Well Destruction ___ Contamination ___

(5) PROPOSED WATER WELL USE
Domestic ___ Industrial ___ Irrigation ___
Municipal ___ Monitoring X Other ___

(6) PROPOSED CONSTRUCTION
Drilling Method:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. 507520

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 25 ft.
Surface Seal Depth 7 ft. Number 2

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

(7) ESTIMATED STARTING DATE 2/20/91
ESTIMATED COMPLETION DATE 2/21/91

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

APPLICANT'S SIGNATURE [signature] Date 2/8/91

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as arrive at the Zone 7 office five days prior proposed starting date.
2. Submit to Zone 7 within 60 days after completi of permitted work the original Department Water Resources Water Well Drillers Report equivalent for well projects, or drilling lo and location sketch for geotechnical projects.
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C. GEOTECHNICAL. Backfill bore hole with compacted cu tings or heavy bentonite and upper two feet with cc pacted material. In areas of known or suspect contamination, tremied cement grout shall be used place of compacted cuttings.

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

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 8 Feb 91
Wyman Hong

21

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED