

Baxter

SECRET 10/12/92

October 12, 1992

Juliet Shin
Alameda County Health Care Services
Department of Environmental Health
80 Swan Way Room 200
Oakland, Ca 94621

Dear Juliet,

I am enclosing the requested report from Geo Plexus concerning the monitoring of our site after the removal of two residential tanks May 10, 1992. The geologist, Mr. Glick, is hopeful that your departments will elect to "close" this site now due to the minimal detect levels.

You can well imagine the trauma this has caused for the last six months as we are in the process of selling our home. Our agent feels that our buyers will not close without clearance from your departments. In these economic times we would be very upset if we lost our buyers. May I help to facilitate this matter in any way?

Sincerely,
Mary Gifford
Mary Gifford
Owner 891 Union Street
510-769-7843

cc: Scott Seery - Alameda County Health Care Services
Richard Hiet - Regional Water Quality Control Bd

October 9, 1992
Project C92033

Mr. Wayne Gathright
DECON Environmental Services, Inc.
23490 Connecticut Street
Hayward, CA 94545

Subject: Preliminary Site Characterization Investigation Report
891 Union Street, Alameda, CA

Dear Mr. Gathright;

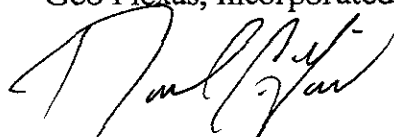
As requested and authorized, the attached Preliminary Site Characterization Investigation Report has been prepared to document the field investigation efforts performed at the subject site related to advancing three exploratory borings and installation of one ground water monitoring well. The report presents the findings of the investigation and analytical testing performed on soil and ground water samples obtained during the investigation along with conclusions and recommendations based on these findings.

In summary, the analytical testing did not detect Total Petroleum Hydrocarbons as diesel or Volatile Aromatic Compounds (Benzene, Toluene, Ethyl Benzene, or Total Xylenes) in the soil samples obtained from exploratory borings. Low concentrations of Oil & Grease (57 parts per million) were detected in the soil samples obtained from exploratory borings EB-1 and EB-3 but were not detected in the soil samples obtained from exploratory boring for MW-1. It is noted that the detection limit for Oil and Grease in soil is 50 parts per million. Boring EB-2 was terminated due to the presence of underground utilities.

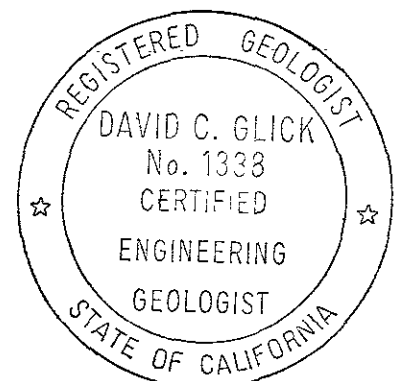
The analytical testing did not detect Total Petroleum Hydrocarbons as diesel or Oil & Grease in the water samples obtained from Monitoring Well MW-1. Benzene, Toluene, and Ethyl Benzene were not detected in the water samples obtained from Monitoring Well MW-1; however Total Xylenes were detected at a concentration of 0.4 parts per billion (detection limit of 0.3 ppb).

It is recommended that the ground water monitoring well at the site be sampled on a quarterly basis to monitor the absence of the hydrocarbon products in the ground water. It has been a pleasure to be of service to you on this project. Questions or comments regarding the attached report should be addressed to the undersigned.

Respectfully submitted,
Geo Plexus, Incorporated



David C. Glick, CEG 1338
Director, Geological and
Environmental Services



PRELIMINARY SITE CHARACTERIZATION INVESTIGATION

for

891 UNION STREET

ALAMEDA, CA

Prepared for:

DECON Environmental Services, Inc.

23490 Connecticut Street

Hayward, CA 94545

Project C92033

October 9, 1992

PRELIMINARY SITE CHARACTERIZATION INVESTIGATION
for
891 UNION STREET
ALAMEDA, CA

INTRODUCTION

The project site is located at 891 Union Street in the City of Alameda, in Alameda County, California as indicated on Figure 1. The site is occupied by a single family residential structure and it is understood that one underground heating fuel storage tank and one underground diesel fuel storage tank were removed in May, 1992 at the locations indicated on Figure 2).

It is noted that the project site is situated along the historic margin of Alameda Island (see Figure 3) and that the portion of the property adjacent to Union Street could be in-part occupied by man-made fill soil materials. Based on historic topographic maps of Alameda Island (see Figure 3) and local ground water information, it is understood that historic surface and ground water flow was southwesterly along Union Street flowing towards the bay (current lagoon). Based on the historic data, augmented with local ground water data, it is understood that ground water continues to flow along the trend of a former drainage beneath Union Street.

Based on these conditions, it was determined that one ground water monitoring well would be installed in the historic "down-gradient" direction of the former tanks and to be located between the location of the former tanks and the existing Alameda Lagoon (see Figure 4) to assess the potential impact to the underlying ground water resources from the former tanks.

SCOPE OF WORK

To characterize the potential impact to the underlying soil and ground water resources present at the site, Geo Plexus, Incorporated, in conjunction with DECON Environmental, performed an investigation as described below:

- (1) advancing four subsurface exploration borings to a maximum depth of 11 feet in the immediate area of the former underground storage tanks to define the subsurface conditions and to obtain soil samples from the soil borings for analytical testing;
- (2) continuing one of the borings to a depth of 19 feet and completing the boring as a ground water monitoring well;

- (3) development of the monitoring well and collection of ground water samples for analytical testing;
- (4) performing analytical testing on the soil and ground water samples; and
- (5) preparation of this report documenting the findings of the investigation and presenting the results of the analytical testing.

Specifics of the individual investigative phases are described in the following sections of this report.

SUBSURFACE INVESTIGATION

Three subsurface exploration borings were advanced in the immediate vicinity of the former underground storage tanks (see Figure 3) to characterize the underlying soils and to obtain soil samples for analytical testing. A fourth boring (identified as EB-2) was terminated after encountering underground utility lines. The borings were drilled by Exploration Geoservices, a State of California Licensed Drilling Contractor, C57 License No. 489288.

The borings were advanced using an eight (8) inch, nominal diameter, continuous flight hollow stem auger. Soil samples were obtained from the borings at five foot intervals through the use of a 2-inch I.D. split-barrel sampler. The sampler was advanced into the undisturbed soil ahead of the auger to obtain a core sample. Pre-cleaned brass liners were placed in the sampler to retain the soil. The borings were logged under the supervision of a State of California Certified Engineering Geologist. The Boring Logs are presented as Figures 5-8.

The drill cuttings and soil samples obtained from the borings were monitored during drilling to observe moisture changes in the soils and to determine the depth of the first saturated zone. The borings which were not completed as ground water monitoring wells were terminated upon intercepting the saturated zone (10 feet) and were grout sealed with an 11-sack sand slurry. The Monitoring Well Permit for Monitoring Well MW-1 is included as Figure 9.

The drilling and sampling equipment was thoroughly steam cleaned before drilling began to prevent the introduction of off-site contamination and the augers were steam cleaned between borings to prevent cross-contamination. The sampling equipment was cleaned between each sample event by washing in a hot water bath with a phosphate-free detergent and then rinsed in a hot water bath to prevent cross contamination. The soil cuttings and rinsate water derived from the soil borings and steam cleaning were contained in 55-gallon containers.

The soil samples obtained from the borings were immediately sealed in the liners using aluminum foil and plastic caps and properly labeled including: the date, time, sample location, and project number. The samples were placed on ice immediately for storage and were transported to the laboratory under chain-of-custody documentation (see Appendix A).

MONITORING WELL INSTALLATION

Following completion of the drilling, the "down-gradient" boring was completed as an open standpipe piezometer monitoring well (identified as Monitoring Well MW-1 on Figure 4). The monitoring well was constructed in accordance with Alameda County Monitoring Well Construction Guidelines by installing 2-inch diameter polyvinyl chloride (PVC) flush-threaded casing and slotted pipe directly through the hollow stem auger. The slotted section of the PVC pipe installed through the saturated zone in Monitoring Well MW-2 had 0.010 inch factory perforations. The PVC materials used in the well construction were thoroughly cleaned prior to introduction into the boring.

The monitoring well was filter-packed with clean #2/12 silica sand throughout the screened interval. The filter-pack material was installed in the annular spacing between the monitoring well pipe and the auger as the auger was removed. The filter-pack was extended two feet above the top of the screened interval. To assure continuity and integrity of the filter material, and to prevent the bore hole from caving, no more than five feet of auger was removed at a time during placement of the filter-pack.

A one foot thick layer of bentonite pellets was placed above the filter material to provide an annular seal. The bentonite was hydrated with water prior to placement of the grout seal. The remainder of the boring was filled with an 11-sack cement-sand slurry to within one foot of grade. A locking cap was placed on the PVC well casing and a water tight aluminum traffic box was installed in concrete flush with the ground surface over the well casing. Figure 10 illustrates the construction of Monitoring Well MW-1.

MONITORING WELL DEVELOPMENT

Free product measurements were obtained prior to development utilizing an acrylic bailer lowered into the well to obtain a water sample. The bailer was used to collect a water sample to observe the presence of hydrocarbon odors, visible sheen, or free product. Free product or visible sheen were not observed in the monitoring well.

The monitoring well was allowed to stabilize for a minimum of 72 hours between construction and development activities. The initial well development was through the use of a Brainard Kilman 1.7-inch hand pump (to remove sediment) and was followed by purging with a teflon bailer. The wells were developed until a minimum of four well volumes had been purged and the discharged water appeared clear of sediment. Electrical conductivity, temperature, and pH of the ground water was recorded throughout the development process. The well development continued until the electrical conductivity, temperature, and pH of the discharged water stabilized. Depth to water measurements were recorded prior to and following the well development activities.

MONITORING WELL SAMPLING

The monitoring well was allowed to stabilize for a minimum of 72 hours between development and sampling activities. Free product measurements were obtained for each monitoring well at the time of sample acquisition utilizing an acrylic bailer lowered into the wells to obtain a surface water sample. The bailer was used to collect a water sample to observe the presence of hydrocarbon odors, visible sheen, or free product. Free product was not observed in the wells prior to the purging activities.

Prior to sampling, a minimum of four well volumes were purged from the well through the use of a teflon bailer. Electrical conductivity, temperature, and pH of the ground water were recorded throughout the purging process. The purging activities continued until the electrical conductivity, temperature, and pH of the discharged water stabilized. Water samples for analytical testing were obtained through the use of the teflon bailer. The water developed from the monitoring wells was contained on-site pending receipt of the laboratory test results.

The water samples were collected in sterilized glass vials with Teflon lined screw caps. The water samples collected for Volatile Organics were collected in 40 mil. vials acidified with HCL by the analytical laboratory. The water samples collected for Total Petroleum Hydrocarbons as diesel and Oil & Grease were collected in sterilized 1-liter amber jars with Teflon lined screw caps. The samples were immediately sealed in the vials and properly labeled including: the date, time, sample location, project number, and indication of any preservatives added to the sample. The samples were placed on ice immediately for transport to the laboratory under chain-of-custody documentation.

ANALYTICAL TESTING

The soil and ground water samples were submitted to and tested by Superior Precision Analytical, Inc., a State of California, Department of Health Services certified testing laboratories. Analytical testing was scheduled and performed in accordance with the State of California, Regional Water Quality Control Board and Alameda County Guidelines. The analytical test data, along with the Chain-of-Custody Forms are presented in Appendix A.

The soil and water samples were tested for Total Petroleum Hydrocarbons as gasoline by Method GCFID 5030/8015, Oil and Grease by Method 5520, and Volatile Aromatics by EPA Method 8020 as indicated on the Chain-of-Custody Form.

SUBSURFACE CONDITIONS

The soil borings revealed near uniform subsurface soil conditions consisting of 6-8 feet of dark-brown, loose silty sand (interpreted to be fill soils) to a depth of ranging from 6 feet in EB-1 to 7 feet in EB-3 and MW-1. The silty sand was underlain by natural sediments composed of orange-brown, medium dense to dense, silty sand (Merritt Sand Formation) to a depth of 18 feet (limit of soil borings).

Ground water was encountered in the exploration borings at a depth of 10 feet below the ground surface at the time of drilling. Water stabilized in Monitoring Well MW-1 at a depth of 10.5 feet.

CONCLUSIONS

The soil boring EB-1, EB-3, and MW-1 encountered a dark-brown silty sand to a depth of 6 to 7 feet below the ground surface (which are interpreted to be man-made fill soils) underlain by natural, dense orange-brown silty sand. Ground water was encountered at a depth of 10 feet below the ground surface at the time of drilling.

The soil samples and soil cuttings from the borings did not exhibit visible discoloration or emit noticeable vapors related to diesel fuel, heating oils, or volatile aromatic compounds.

The analytical testing did not detect Total Petroleum Hydrocarbons as diesel or Volatile Aromatic Compounds (Benzene, Toluene, Ethyl Benzene, or Total Xylenes) in the soil samples obtained from exploratory borings.

The analytical testing did not detect Oil & Grease in the soil samples obtained from exploratory boring for Monitoring Well MW-1; however, low concentrations of Oil & Grease (57 parts per million) were detected in the soil samples obtained from 9-9.5 feet from exploratory borings EB-1 and EB-3. It is noted that the detection limit for Oil and Grease in soil is 50 parts per million.

The analytical testing did not detect Total Petroleum Hydrocarbons as diesel or Oil & Grease in the water samples obtained from Monitoring Well MW-1. Benzene, Toluene, and Ethyl Benzene were not detected in the water samples obtained from Monitoring Well MW-1; however, Total Xylenes were detected at a concentration of 0.4 parts per billion. It is noted that the detection limit for Xylenes in water is 0.3 parts per billion.

RECOMMENDATION

It is recommended that the ground water monitoring well at the site be sampled on a quarterly basis to monitor the absence of the hydrocarbon products in the ground water.

LIMITATIONS

We have only observed a small portion of the pertinent soil and ground water conditions present at the site. Subsurface conditions across the site have been extrapolated from information obtained from review of existing documents and from the field investigation. The conclusions made herein are based on the assumption that soil conditions do not deviate appreciably from those described in the reports and observed during the field investigation.

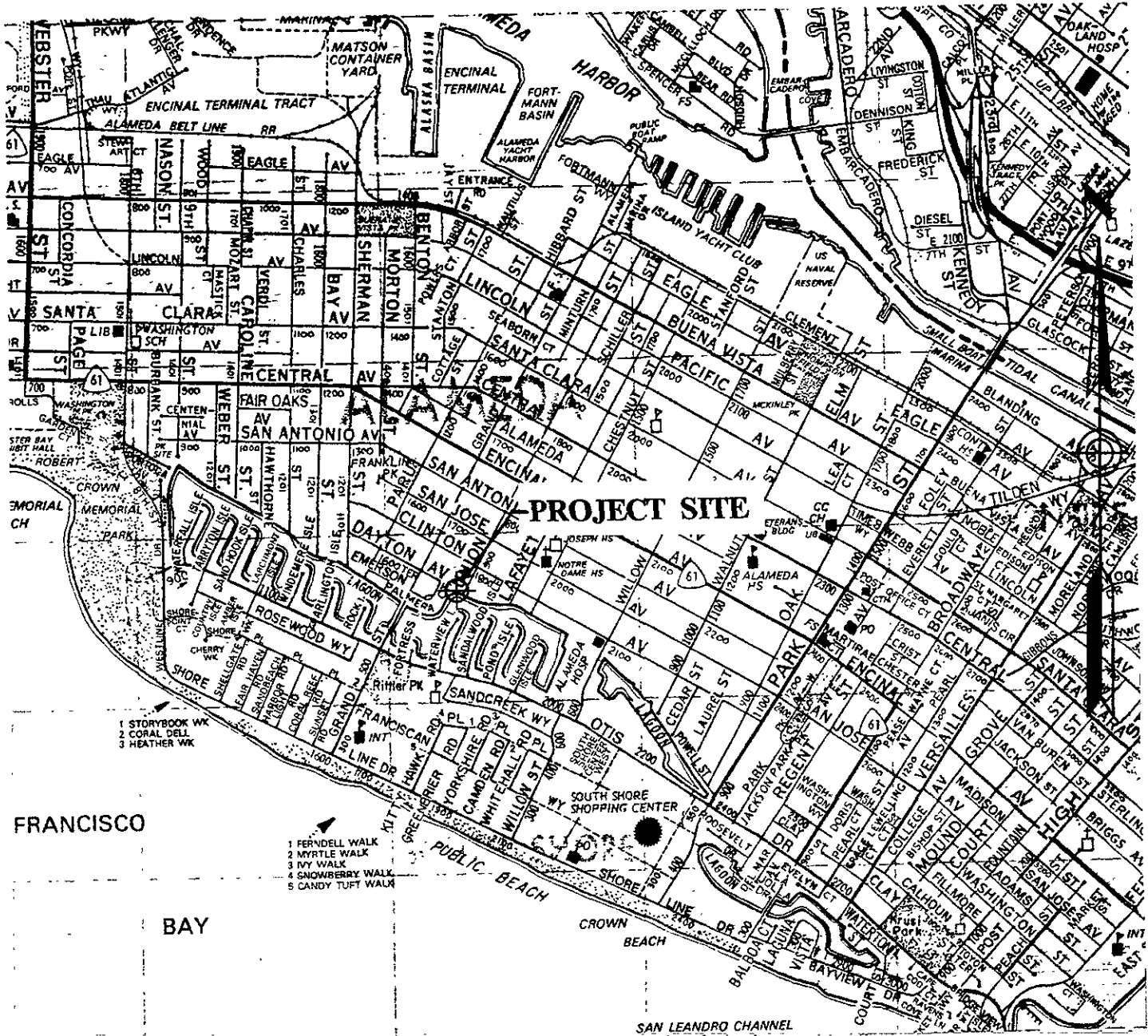
Geo Plexus, Incorporated provides consulting services in the fields of Geology and Engineering Geology performed in accordance with presently accepted professional practices. Professional judgments presented herein are based partly on information obtained from review of published documents, partly on evaluations of the technical information gathered, and partly on general experience in the fields of geology and engineering geology.

No attempt was made to verify the accuracy of the published information prepared by others used in preparation of this assessment report.

If you have questions regarding the findings, conclusions, or recommendations contained in this report, please contact us. We appreciate the opportunity to serve you.

Geo Plexus, Incorporated

Geo Plexus, Incorporated



FRANCISCO

BAY

SAN LEANDRO CHANNEL

- 1 STORYBOOK WK
- 2 CORAL DELL
- 3 HEATHER WK

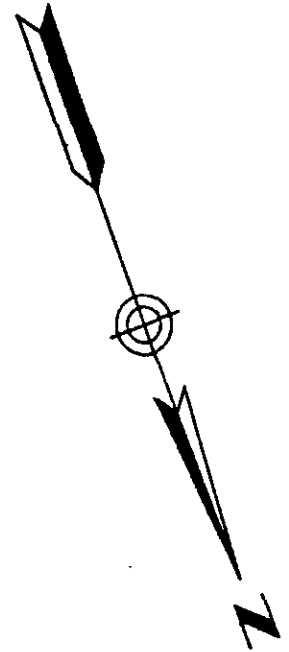
- 1 FERNDLE WALK
- 2 MYRTLE WALK
- 3 NY WALK
- 4 SNOWBERRY WALK
- 5 CANDY TUFT WALK

Source: Thomas Brothers

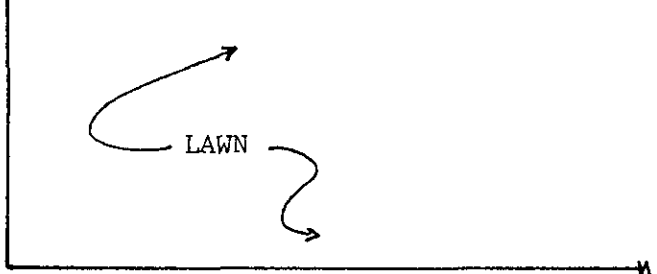
VICINITY MAP		
DATE 10/8/92	SCALE n/a	CRAWN BY dcg
891 UNION STREET, ALAMEDA, CA		
		Figure 1

GeoPlexus, Inc.

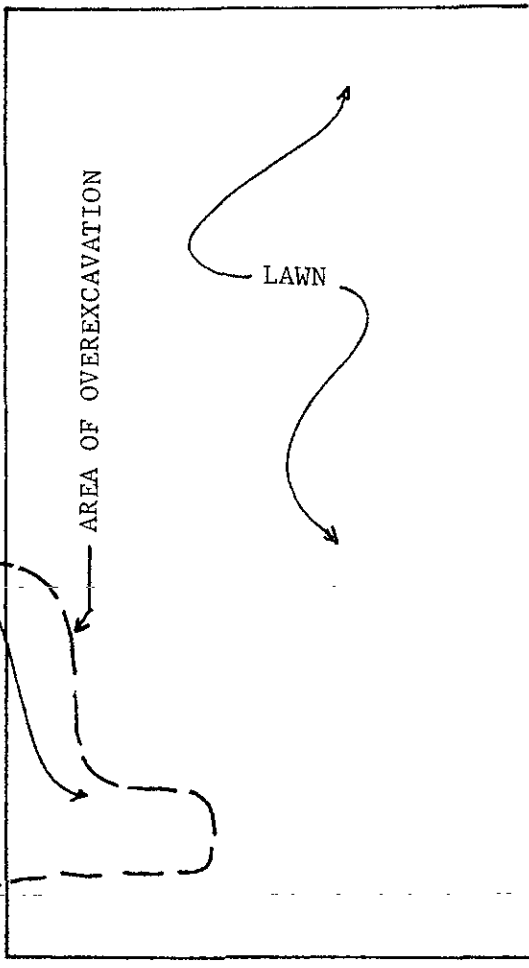
ALAMEDA LAGOON



ROCK WALL



SIDEWALK



UNION STREET

PLANTER
SIDEWALK

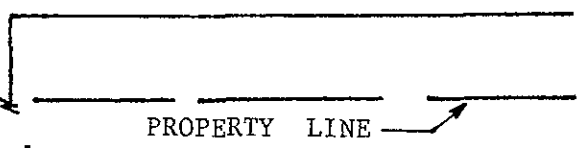
AREA OF OVEREXCAVATION

LAWN

891 UNION STREET
RESIDENTIAL STRUCTURE

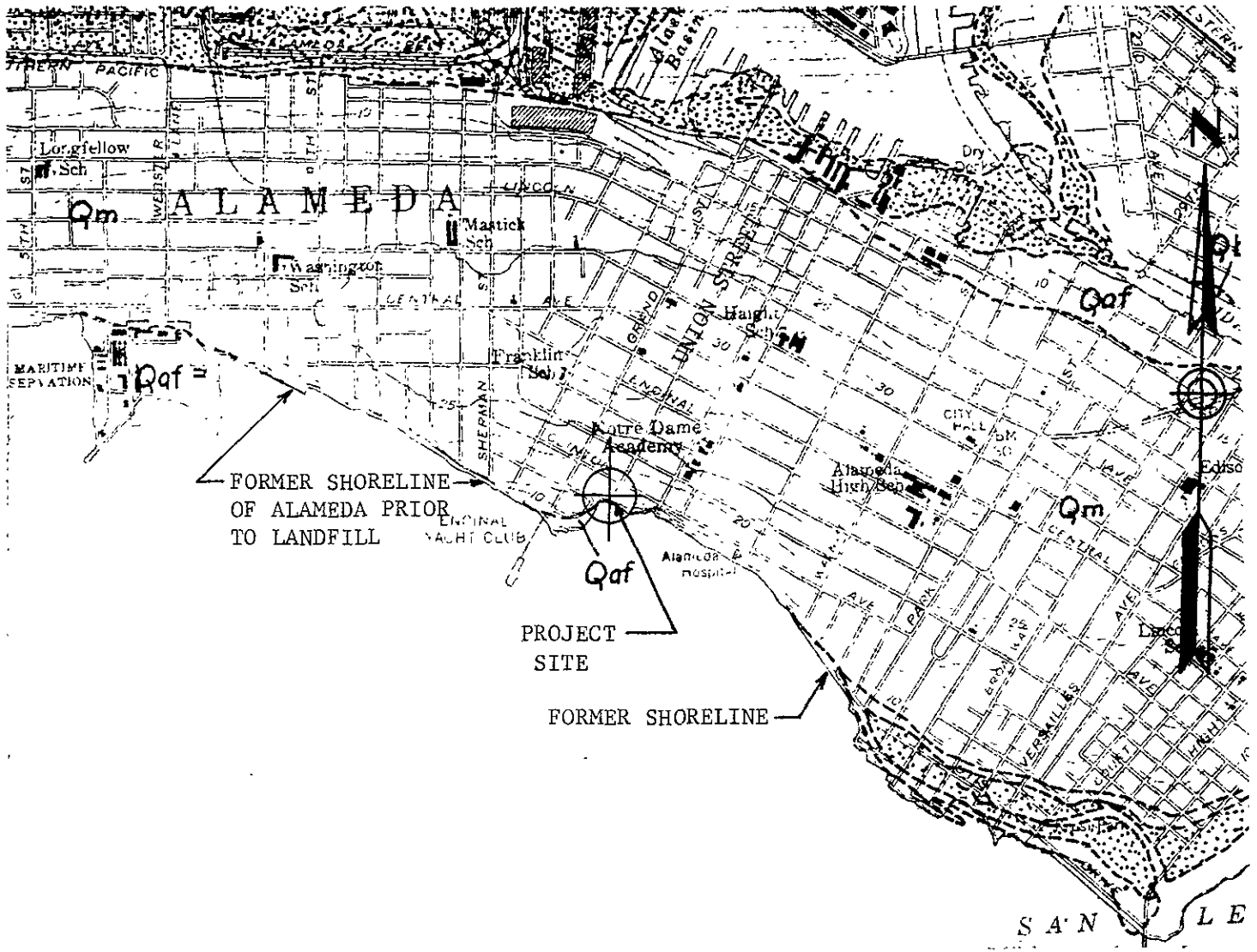
DRIVEWAY

APPROXIMATE
LOCATION OF
FORMER TANKS



PROPERTY LINE

SITE PLAN		
DATE 10/8/92	SCALE 1"=10'	DRAWN BY dcg
891 UNION STREET, ALAMEDA, CA		
		Figure 2



Source: Preliminary Geologic Map and Engineering Geologic Information, Oakland and Vicinity, Calif.
 U.S.G.S. Open-File Report 67-183, 1967

Topographic Base Map - 1947
 Qaf - denotes artificial fill material
 Qm - denotes Merritt Sand Formation

HISTORIC TOPOGRAPHIC MAP		
DATE	SCALE	DRAWN BY
10/8/92	1"=2000'	dgc
891 UNION STREET, ALAMEDA, CA		
		Figure 3

ALAMEDA LAGOON

ROCK WALL

LAWN

SIDEWALK

LAWN

AREA OF OVEREXCAVATION

891 UNION STREET

RESIDENTIAL STRUCTURE

UNION STREET

PLANTER

SIDEWALK

MW

EB-1

DIRECTION OF GROUND WATER FLOW BASED ON HISTORIC TOPOGRAPHY AND FORMER CHANNEL ALONG UNION STREET.

EB-3

APPROXIMATE LOCATION OF FORMER TANKS

DRIVEWAY

EB-2 (abandoned)

PROPERTY LINE

BORING/WELL LOCATION MAP

DATE 10/8/92 SCALE 1"=10' DRAWN BY dcg


891 UNION STREET, ALAMEDA, CA

Figure 4

SUBSURFACE DATA LOG

DRY DENSITY (lbs cu. ft.)	MOISTURE (% of dry wt.)	"N" VALUE (blows/ft.)	OVTY READING (ppm)	SAMPLE TYPE	DEPTH (ft.)	LOG	U.S.C.	LOG No. <u>EB-1</u> DATE: <u>9-18-92</u> LOCATION: <u>891 Union Street, Alameda, CA</u> EQUIPMENT: <u>Exploration Geoservices</u> PROJECT No. _____
	push			S1	5	SM		<p><u>SILTY SAND</u>, dark-brown, moist, loose (fill soils)</p> <p>sample S-1 had significant root volumes</p>
	cored			S2	10	SM		<p><u>SILTY SAND</u>, orange-brown, moist, dense (native)</p> <p>wet</p>
					15			<p>Bottom of boring 10.5 feet. Ground water encountered at 10 feet. Boring backfilled with 11-sack sand slurry.</p>

SUBSURFACE DATA LOG

DRY DENSITY (lbs cu. ft.)	MOISTURE (% of dry wt.)	"N" VALUE (blows/ft.)	OVM READING (ppm)	SAMPLE TYPE	DEPTH (ft.)	LOG	U.S.C.
					5	SM	
							
<p><u>SILTY SAND</u>, dark-brown, moist, loose (fill soils)</p>							
<p>Boring terminated at 3 feet upon encountering utilities.</p>							

LOG No. EB-2 DATE: 9-18-92
 LOCATION: 891 Union Street, Alameda, CA
 EQUIPMENT: ExplorationGeoservices
 PROJECT No. _____

SUBSURFACE DATA LOG

LOG No. EB-3 DATE: 9-18-92
 LOCATION: 891 Union Street, Alameda, CA
 EQUIPMENT: Exploration Geoservices
 PROJECT No. _____

DRY DENSITY (lbs. cu. ft.)	MOISTURE (% of dry wt.)	"N" VALUE (blows/ft.)	OPV READING (ppm)	SAMPLE TYPE	DEPTH (ft.)	LOG	U.S.C.
					0		2-inch Asphalt/8" Aggregate Base
					1	GM	GRAVELLY SAND, redish-brown, moist, dense (fill)
					2	SM	SILTY SAND, yellow-brown, moist, medium dense (fill soils)
	core			S1	5	SM	SILTY SAND, yellow-brown, moist, medium dense (native soils)
					10		
	core			S2			
							Boring terminated at 10 feet. Ground water encountered at 10 feet. Boring backfilled with 11-sack sand slurry.

SUBSURFACE DATA LOG

DRY DENSITY (lbs cu ft.)	MOISTURE (% of dry wt.)	"N" VALUE (blows/ft.)	OVM READING (ppm)	SAMPLE TYPE	DEPTH (ft.)	LOG	U.S.C.	LOG No. <u>MW-1</u> DATE: <u>9-18-92</u>
					5	SM		LOCATION: <u>891 Union Street, Alameda, CA</u>
		core		S1		SM		EQUIPMENT: <u>Exploration Geoservices</u>
					10	SM		PROJECT No. _____
		core		S2		SM		
					15	SM		
		core		S3		SM		
					20			

SILTY SAND, dark-gray, moist, loose (fill soils)

SILTY SAND, reddish-brown, moist, loose (fill soil)

SILTY SAND, yellowish-brown, moist, loose (fill)
 Sample S-1 contained significant roots and was not retained for analytical testing.

SILTY SAND, yellow-brown, moist, medium dense (native soil) sediments have iron-oxide stains
 wet

Sample S-3 saturated and not retained for testing

Boring terminated at 18 feet.
 2-inch monitoring well installed.
 Ground water encountered at 10 feet.



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600

FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 891 Union Street, Alameda, CA

PERMIT NUMBER 92460

LOCATION NUMBER _____

CLIENT

Name DECON Environmental Services, Inc.
Address 23490 Connecticut Phone (510) 732-6444
City Hayward, CA. Zip 94545

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT

Name Geo Flexus Inc
Address 2922 Scott Blvd Phone (408) 287-8588
City Santa Clara, CA Zip 95054

A. GENERAL

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

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection _____	General _____
Water Supply _____	Contamination <u>X</u>
Monitoring <u>X</u>	Well Destruction _____

B. WATER WELLS, INCLUDING PIEZOMETERS

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

PROPOSED WATER SUPPLY WELL USE

Domestic _____	Industrial _____	Other _____
Municipal _____	Irrigation _____	

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

DRILLING METHOD:

Mud Rotary _____	Air Rotary _____	Auger <u>X</u> 8"
Cable _____	Other _____	Hollow Stem _____

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

DRILLER'S LICENSE NO. C57 489288

E. WELL DESTRUCTION. See attached.

WELL PROJECTS

Drill Hole Diameter	<u>8</u> in.	Maximum	
Casing Diameter	<u>2</u> in.	Depth	<u>25</u> ft.
Surface Seal Depth	<u>5</u> ft.	Number	<u>1</u>

GEOTECHNICAL PROJECTS

Number of Borings	_____	Maximum	
Hole Diameter	_____ in.	Depth	_____ ft.

ESTIMATED STARTING DATE 9/18/92

ESTIMATED COMPLETION DATE 9/18/92

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

Approved

Wyman Hong
Wyman Hong

Date 14 Sep 92

APPLICANT'S SIGNATURE

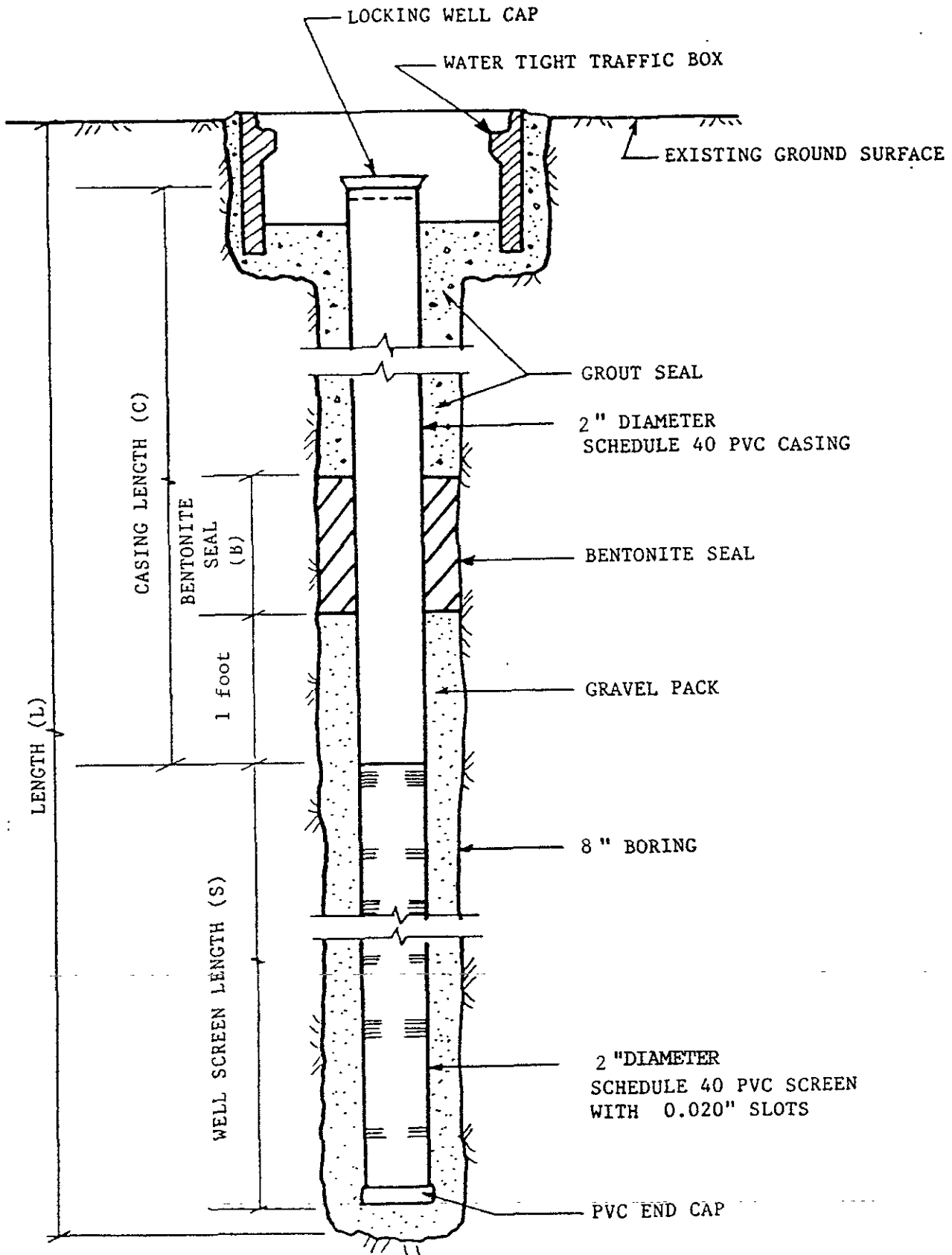
David C. Glick
David C. Glick, CEG 1338

Date

9/11/92

Figure 9

31292



L= 18.0 feet
 S= 10.0 feet
 C= 8.0 feet
 B= 1.0 foot

MONITORING WELL MW-1		
DATE 9/18/92	SCALE n/a	DRAWN BY dcg
891 UNION STREET, ALAMEDA, CA		
		Figure 10

APPENDIX A
CHAIN-OF-CUSTODY FORMS
AND
ANALYTICAL TEST DATA

55569

PROJECT NUMBER		PROJECT NAME				Number of Cntrs	Type of Containers	Type of Analysis						Condition of Samples	Initial
CA 2035		DECON (GIFFORD) UNION AVE						TPH d	BTEX	OIL & GREASE	552	E.P.E			
Send Report Attention of:		Report Due		Verbal Due											
David Glick		1 1		1 1											
Sample Number	Date	Time	Comp	Grab	Station Location										
✓ MW1-52	9/18/92	955		1	MON Well 1. 9-10'	1EA	6" BRASS	✓	✓	✓					
✓ EB1-51		1115		1	BORING 1 4.5-5'			✓	✓	✓					
✓ EB1-52		1130		1	BORING 1 9-9.5			✓	✓	✓					
✓ EB3-51		1330		1	BORING 3 4.5-5'			✓	✓	✓					
✓ EB3-52		1340		1	BORING 3 9-9.5			✓	✓	✓					
per David Glick 9/22/92															

Please initial: RD

Samples Stored in ice. YES

Appropriate containers. YES

Samples preserved. NO

VOA's without headspace. NA

Comments: (initials)

Relinquished by: (Signature) <u>[Signature]</u>	Date/Time <u>9/21/92 16:40</u>	Received by: (Signature) <u>W. Coy #593</u>	Date/Time <u>9/21/92 16:40</u>	Remarks: Purchase Order No.: 92. 30047 STANDARD TURN AROUND
Relinquished by: (Signature) <u>W. Coy #593</u>	Date/Time <u>9/21/92 16:59</u>	Received by: (Signature) <u>Mary C. 1255</u>	Date/Time <u>9-21-92 16:59</u>	
Relinquished by: (Signature) <u>[Signature]</u>	Date/Time <u>9-21-92 17:52</u>	Received by: (Signature) <u>[Signature]</u>	Date/Time <u>9/21/92</u>	



Superior Precision Analytical, Inc.

1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55569
CLIENT: GEO PLEXUS, INC.
CLIENT JOB NO.: C92033

DATE RECEIVED: 09/21/92
DATE REPORTED: 09/28/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/kg) Diesel Range
1	MW1-S2	ND<10
2	EB1-S1	ND<10
3	EB1-S2	ND<10
4	EB3-S1	ND<10
5	EB3-S2	ND<10

mg/kg - parts per million (ppm)

Minimum Detection Limit for Diesel in Soil: 10mg/kg

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 87%: Duplicate RPD = 2%

Richard Srna, Ph.D.

[Signature]
Laboratory Director

dy
9/29/92



Superior Precision Analytical, Inc.

1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55569
CLIENT: GEO PLEXUS, INC.
CLIENT JOB NO.: C92033

DATE RECEIVED: 09/21/92
DATE REPORTED: 09/28/92

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration (mg/kg)			
		Benzene	Toluene	Ethyl Benzene	Xylenes
1	MW1-S2	ND<.003	ND<.003	ND<.003	ND<.003
2	EB1-S1	ND<.003	ND<.003	ND<.003	ND<.003
3	EB1-S2	ND<.003	ND<.003	ND<.003	ND<.003
4	EB3-S1	ND<.003	ND<.003	ND<.003	ND<.003
5	EB3-S2	ND<.003	ND<.003	ND<.003	ND<.003

mg/kg - parts per million (ppm)

Method Detection Limit in Soil: 0.003 mg/kg

QAQC Summary:

Daily Standard run at 20 ug/L: RPD = <15%
MS/MSD Average Recovery = 96%: Duplicate RPD = 5%

Richard, Srna, Ph.D.


Laboratory Manager

CSG
9/29/92



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LABORATORY NO.: 55569
CLIENT: GEO PLEXUS, INC.
CLIENT JOB NO.: C92033

DATE RECEIVED: 09/21/92
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ANALYSIS FOR TOTAL PETROLEUM OIL AND GREASE by Method 5520F (formerly 503E)

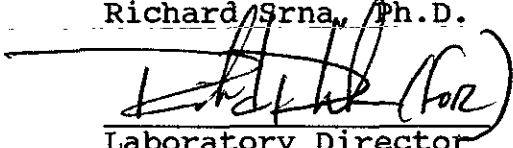
LAB #	Sample Identification	Concentration (mg/kg) Total Petroleum Oil & Grease
1	MW1-S2	ND<50
2	EB1-S1	ND<50
3	EB1-S2	57
4	EB3-S1	ND<50
5	EB3-S2	57

mg/kg - parts per million (ppm)

Minimum Detection Limit for oil & grease in Soil: 50mg/kg

QAQC Summary:
MS/MSD Average Recovery = 87%
Duplicate RPD = 11%

Richard Srna, Ph.D.


Laboratory Director

CSG
9/29/92



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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55598
CLIENT: DECON ENVIRONMENTAL SERVICES
CLIENT JOB NO.: C92033

DATE RECEIVED: 09/28/92
DATE REPORTED: 10/06/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (ug/L) Diesel Range
3	MW1-WS2A,B	ND<50

ug/L - parts per billion (ppb)

Minimum Detection Limit for Diesel in Water: 50ug/L

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 84%: Duplicate RPD = 2%

Richard Srna, Ph.D.

Cecilia J. Jonquini (for)
Laboratory Director



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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55598
CLIENT: DECON ENVIRONMENTAL SERVICES
CLIENT JOB NO.: C92033

DATE RECEIVED: 09/28/92
DATE REPORTED: 10/06/92

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration (ug/L)			
		Benzene	Toluene	Ethyl Benzene	Xylenes
1	MWA-WS1A,B	ND<0.3	ND<0.3	ND<0.3	ND<0.3
2	MW1-WS1A,B,C	ND<0.3	ND<0.3	ND<0.3	0.4

ug/L - parts per billion (ppb)

Method Detection Limit in Water: 0.3 ug/L

QAQC Summary:

Daily Standard run at 20 ug/L: RPD = <15%
MS/MSD Average Recovery = 94%; Duplicate RPD = 4%

Richard Srna, Ph.D.

Cecilia Y. Jorgensen (for)
Laboratory Manager



Superior Precision Analytical, Inc.

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55598
CLIENT: DECON ENVIRONMENTAL SERVICES
CLIENT JOB NO.: C92033

DATE RECEIVED: 09/28/92
DATE REPORTED: 10/06/92

ANALYSIS FOR TOTAL PETROLEUM OIL AND GREASE by Method 5520F (formerly 503E)

LAB #	Sample Identification	Concentration (mg/L) Total Petroleum Oil & Grease
4	MW1-WS3A	ND<5

mg/L - parts per million (ppm)

Minimum Detection Limit for oil & grease in Water: 5mg/L

QAQC Summary:
MS/MSD Average Recovery = 76%
Duplicate RPD = 11%

Richard Srna, Ph.D.

Cecilia J. Jonquist (for)
Laboratory Director