H2OGEOL
A GROUNDWATER CONSULTANCY

# SOIL SAMPLING
# MONITORING WELL INSTALLATIONS
# AND
# INITIAL GROUNDWATER SAMPLING

AT

1628 WEBSTER STREET
ALAMEDA, CALIFORNIA

SEPTEMBER 19, 1995



*H2OGEOL* A GROUNDWATER CONSULTANCY

P.O.Box 2165 ▪ Livermore, California 94551 ▪ 510-373-9211

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H2OGEOL
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# MONITORING WELL INSTALLATIONS
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# AT
# 1628 WEBSTER STREET
# ALAMEDA, CALIFORNIA

## 1.0 INTRODUCTION

The property at 1628 Webster Street in Alameda, California was identified as an underground tank leak site by the Alameda County Health Care Services Agency, Department of Environmental Health, Environmental Protection Division (ACHCSA). The location of 1628 Webster Street property is shown in Figure 1. The property owner retained $H_2$OGEOL to conduct this investigation.

A workplan for the installation of three monitoring wells was prepared and was submitted to ACHCSA on May 16, 1995. The ACHCSA approved the workplan in their letter was dated May 23, 1995, with the addition to the groundwater sample analytical suite of volatile halocarbons (E.P.A. Method 8010/601) and semi-volatile compounds (E.P.A. Method 8270/624).

## 1.1 PRESENT INVESTIGATION

The purpose of this investigation is twofold: to determine groundwater flow direction (more precisely direction of groundwater gradient, since the horizontal hydraulic conductivity anisotropy will remain unknown) of the shallow portion of the Posey/Merritt Aquifer and to ascertain the potential presence of underground storage tank derived petrochemicals. The chemicals analyzed and reported are: Total Extractable Petroleum Hydrocarbons as diesel (TPH-D); Total Petroleum Hydrocarbons as Gasoline (TPH-G), along with the associated aromatic hydrocarbons benzene (B), toluene (T), ethylbenzene (E), and total xylene isomers (X), which are collectively referred to as BTEX; and Total Oil and Grease (TOG), in soil and groundwater, and volatile halogenated organics (halocarbon compounds) and semivolatile (Base/Neutral Extractable) compounds in groundwater.

The present investigations consisted of drilling three soil sampling boreholes to depths of about six feet and collecting soil samples from immediately above the first encountered groundwater; drilling and installation of three monitoring wells to depths of about fifteen; and collecting and analyzing groundwater samples from the three monitoring wells.

All three of the monitoring wells, and a borehole that could not be deepened for monitoring well construction (BH-2) are located within the fenced property (Figure 2). A ZONE 7 Water Agency (also known as Zone 7 Alameda County Flood Control and Water Conservation District) Drilling Permit Application was filed on May 16, 1995 and issued on June 01, 1995 (Attachment A). Upon completion of the well construction, a California Department of Water Resources (DWR) form 188 was filled out for each well and submitted to Zone 7 as required by the permit (the original DWR form 188 was also submitted to ZONE 7 as stipulated in the permit cover letter. DWR forms 188 are also included in Attachment A.

## 2.0 FIELD OPERATIONS AND INVESTIGATIVE METHODS

Field investigations consisted of the installation of four boreholes. Three 4-inch diameter, approximately six foot deep soil sampling boreholes MW-1 (BH-1), BH-2, and MW-3 (BH-3) were hand augered on June 23, 1995 for the indicated purpose. Two of these boreholes were successfully deepened to fifteen feet, reamed to 6.25-inch diameter, and completed into monitoring wells MW-1 and MW-3 on July 05th and 06th, respectively.

### 2.1 Lithologic Logging

During augering of each borehole, soil characteristics were logged in the field by a geologist. Distinguishing features such as soil composition, color, texture, and unusual odors were noted. The soil characteristics were logged in the field according to the Unified Soil Classification System.

Logging began during the hand augering of the 4-inch soil sampling boreholes. Logging continued when each monitoring well installation borehole was extended to final depth (15.5 feet). Borehole lithologic logs with well completion diagrams are included in Attachment B.

The soil between borehole BH-2 (originally called MW-2) and the adjacent former remedial excavation collapsed into the borehole when it reached a depth of about seven feet. Because much of the Webster Street edge of the former remedial excavation showed evidence of extending beneath (with an air gap between the soil face and the "Geofabric" liner, a thick plastic sheeting) the adjacent concrete widening of the sidewalk (i.e., not a part of the formal sidewalk) a new location was selected for monitoring well MW-2 and a new borehole was hand augered and monitoring well MW-2 was completed on July 06, 1995. The locations of the borehole (BH-2) and monitoring wells are shown on Figure 2.

## 2.2 Soil Sampling

The soil sampling boreholes were drilled with 4-inch AMS soil augers. The hand augered boreholes were advanced until an increase in moisture content indicated that the water table was being approached. Borehole MW-1 was advanced to 6.1 feet, MW-2 (BH-2) to 6.0 feet, and MW-3 to 5.5 feet. First encountered water was at 6.35 ± 0.05 feet in all three boreholes.

The soil samples were collected from the bottom of the augered boreholes using an AMS slide hammer to drive a core sampler. A 6-inch long brass soil sample retaining cylinder was housed within the core sampler. When the sampler was extracted from the borehole and disassembled, the brass cylinder was removed. The ends of the brass cylinder were covered with aluminum foil and a tight fitting "cap plug" was affixed to each end so as to ensure air tightness. The sealed tubes were labeled and then placed onto ice (water frozen in a 2-liter plastic bottle) in an ice chest while awaiting transport to Chromalab, Inc., a state certified laboratory, for analysis following proper chain of custody documentation (presented in Attachment C with the laboratory analytical report).

## 2.3 Monitoring Well Installation

Well construction commenced after each hand augered borehole was reamed to is final diameter. A ten foot section of flush threaded 2-inch inside diameter schedule 40 PVC well casing and slotted screens was installed into each monitoring well borehole. Each well was constructed with screen factory slotted to 0.020-inch. Sand (RMC Lonestar, No.3) was poured into the annulus from the ground surface until the sand was about one half foot above the screen. After the required amount of sand was added to the annulus, a one half foot bentonite chip seal was placed above the sand pack. The bentonite chips were hydrated with potable water poured from the surface. A neat cement seal was added to prevent infiltration of the sand pack from surface runoff. The well was secured with a locking cap and traffic rated box set onto concrete and sloped to drain away from the lid. The three monitoring wells were constructed identically, as follows:

WELL CONSTRUCTION DETAILS

| Well Number | Borehole Diameter (inches) | Casing/ Screen Diameter (inches) | Total Borehole Depth (feet) | Total Well Depth (feet) | Screened Interval (feet) |
|---|---|---|---|---|---|
| MW-1 | 6.25 | 2 | 15.5 | 15.05 | 5-15 |
| MW-2 | 6.25 | 2 | 15.5 | 15.05 | 5-15 |
| MW-3 | 6.25 | 2 | 15.5 | 15.05 | 5-15 |

Each monitoring well was developed on July 05 and 06, 1995 by the surge and pump technique. Well development continued until the turbidity was lowered to a point where the amount of sediment in the produced water would not interfere with the laboratory analytical procedures. Development occurred prior to the placement of the bentonite and the pouring of the neat cement grout seal. This sequence was followed to ensure that the sandpack was settled to its final depth. Since development occurred prior to grouting, there could be no effect on the seal by well development (the usual reason for waiting from 48 to 72 hours between installation and development of monitoring wells).

The wells were surveyed by Ron Archer Civil Engineer, Inc. on July 14, 1995. The borehole (BH-2) and well locations are shown on Figure 2 and the surveyor's report in included as Attachment D.

## 2.4 Monitoring Well Purging and Sampling

The monitoring wells were purged by pumping with an "ES-60" submersible pump marketed for monitoring well purging by Enviro-Tech Services Co. of Martinez, California. Field measured water quality parameters were measured using a Cambridge Scientific Industries Hydac™ Conductivity Temperature pH Tester. Well purging activities and the field measured water quality parameters are documented in Attachment E. For each well, purging continued until specific conductance stabilized to +/- 5% on consecutive readings.

The purge pump was slowly removed from each well while running to allow a sweeping of the wellbore, preventing significant surging of the wellbore and drainage of the discharge tubing into the well. Groundwater samples for TPH-D and TOG (nonvolatile) analysis were collected in one liter amber bottles directly from the end of the pump discharge tubing. Groundwater samples for TPH-G plus BTEX, volatile halocarbons, and semi-volatile compounds analysis were collected using a precleaned Teflon™ bailer suspended from a new nylon twine line, and emptied through a precleaned Teflon™ pepcock type bottom emptying device. One liter amber bottles were used for samples for semi-volatile compound and samples for volatile compound analysis were collected in 40-mL glass vials with Teflon™ septum lids, in duplicate.

Groundwater sample bottles were labeled and placed in an ice chest with 2 Liter plastic bottles containing ice. Chain-of-Custody forms were filled out and were delivered with the ice chest to Chromalab, Inc. of Pleasanton, California, a state certified laboratory. Laboratory reports and Chain-of-Custody documentation are contained in Attachment F.

## 3.0 RESULTS AND DISCUSSION

### 3.1 Geology and Borehole Lithology

The 1628 Webster Street property lies near the center of the western third of the late Pleistocene beach ridge that forms southern Alameda island (predevelopment peninsula), at an elevation of about 15 feet above mean sea level (amsl). The entire late Pleistocene beach ridge is comprised to a depth of 20 to 50 feet of the local phase of the Posey/Merritt Formations (Posey sands and Merritt sands). The ground surface slopes gently northward (Figure 1) toward a now filled predevelopment tidal flat.

Each of the three monitoring well boreholes encountered clayey sand of the Posey/Merritt Formations. The clay content of the clayey sands was not uniform in depth or between boreholes. Below the depth at which a locally derived fill was encountered (0.5 to 2 feet), the upper 15 feet of these clayey sands are dark yellowish brown at boreholes MW-2 and MW-3, and in MW-1 to the depth just above the water table. Below the capillary fringe, the clayey sands in borehole MW-1 had been gleyed as a consequence of the reducing conditions imposed by the presence of odoriferous concentrations of petroleum hydrocarbons. At the water table in MW-1 the clayey sand has lost the cohesiveness normally imparted by the clay content.

Below the water table the clayey sand encountered in the boreholes, comprises the upper portion of the Posey/Merritt Aquifer.

### 3.2 Soil Analytical Results

Soil samples were submitted to Chromalab, Inc. for analysis of TOG by Standard Method 5520 e & f, for TPH-D by U.S. EPA Method 3550/8015M, for TPH-G by U.S. EPA Method 5030/8015M, and for BTEX by U.S. EPA Method 8020. The laboratory report and Chain-of-Custody documentation is contained in Attachment C.

The soil sample analytical results for the MW-2 and MW-3 samples were all reported by the laboratory as not detected. The MW-1 sample was reported as containing:

| | | | |
|---|---|---|---|
| MW-1 @6-6.5' depth | TOG | N.D. | |
| | TPH-D | 8.4 | mg/Kg |
| | TPH-G | 830 | mg/Kg |
| | Benzene | 120 | µg/Kg |
| | Toluene | 220 | µg/Kg |
| | Ethylbenzene | 1,100 | µg/Kg |
| | Total Xylenes | 1,400 | µg/Kg |

Note: 1.0 mg/Kg = 1,000 µg/Kg; also 1 mg/Kg is about 1 part per million (1 ppm) and 1.0 µg/Kg is about 1 part per billion (1 ppb).

## 3.3 Groundwater Flow Direction and Gradient

The regional shallow groundwater flow beneath Alameda, in the Posey/Merritt Aquifer, is semiradial toward the nearby waters of San Francisco Bay and the Oakland Inner Harbor. Local perturbations caused by recharge/discharge form/to cultural features results in a complex pattern of shallow groundwater flow directions.

Depth to water in each monitoring well was measured to +/- 0.01 feet using a Solinst Model 101 water level meter on July 11, 1995. The depth to water was converted to potentiometric surface elevation by subtracting the measured depths to water from the casing top elevation. This information is presented below.

WELL AND GROUNDWATER ELEVATIONS
JULY 11, 1995

| Well Number | Top of Casing Elevation (feet, msl) | Time of Depth measurement | Depth to Water (feet) | Groundwater Surface Elevation (feet, msl) |
|---|---|---|---|---|
| MW-1 | 14.71 | 06:27 | 5.44 | 9.27 |
| MW-2 | 15.69 | 06:26 | 5.81 | 9.88 |
| MW-3 | 14.71 | 06:23 | 5.41 | 9.30 |

The approximate groundwater flow direction for the triangle with a well at each apex is N 6.41° E at a gradient of 0.00491. Figure 3 is a potentiometric surface map showing well locations and groundwater surface contours as measured on July 11, 1995.

## 3.4 Groundwater Analytical Results

The groundwater surface at each monitoring well was checked for free product, observation of sheen, and odor. No free product or sheen was found. Groundwater from monitoring well MW-1 possessed a septic odor.

Groundwater samples were submitted to Chromalab, Inc. for analysis of TOG by Standard Method 5520 b & f; for TPH-D by U.S. EPA Method 3510/8015M; for TPH-G by U.S. EPA Method 5030/8015M and for BTEX by method 602/8020; for volatile halogenated organics by EPA Method 8010; and for Semivolatile (Base/Neutral Extractable) Compounds by EPA Method 3510/625. The laboratory report and Chain-of-Custody documentation is contained in Attachment F.

A comparison is made with maximum contaminant levels (MCLs) as listed in: Marshack, Jon B., D. Env., May, 1993, A Compilation of Water Quality Goals, California Regional Water Quality Control Board, Central Valley Region.

Groundwater samples from all three monitoring wells was reported as N.D. for TOG and TPH-Diesel.

The gasoline fuel constituent (TPH-G+BTEX) analyses were reported as N.D. for MW-2 and MW-3. The groundwater sample from MW-1 contained all five analytes. Fuel hydrocarbon constituents are summarized as follows, with all concentrations are expressed in micrograms per liter (µg/L):

| Well | TPH-D | TPH-G | Benzene | Toluene | Ethyl-benzene | Total Xylenes |
|---|---|---|---|---|---|---|
| MW-1 | <50 | 6,300 ~~6.3~~ | 16 | 3.0 | 28 | 88 |
| MW-2 | <50 | <50 ~~<0.5~~ | <0.5 | <0.5 | <0.5 | <0.5 |
| MW-3 | <50 | <50 ~~<0.5~~ | <0.5 | <0.5 | <0.5 | <0.5 |
| California*Primary MCL's | | | | | | |
| | na | na | 1 | na | 680 | 1,750 |
| US E.P.A.*Primary MCL's | | | | | | |
| | na | na | 5 | 1,000 | 700 | 10,000 |

The only fuel hydrocarbon exceeding an identified published regulatory threshold is benzene in groundwater from monitoring well MW-1.

Volatile halocarbon compound analysis of groundwater samples identified three compounds: one from MW-1; two from MW-2; and none from MW-3. These are:

| Compound | Well | Concentration | MCL |
|---|---|---|---|
| Chloroform | MW-1 | 17 µg/L | 100 |
| Trichloroethene | MW-2 | 2.6 µg/L | 5 |
| Tetrachloroethene | MW-2 | 2.8 µg/L | 5 |

None of the identified volatile halocarbon compounds are above their respective published regulatory thresholds.

Chloroform is one of the trihalomethanes (THMs) produced as a byproduct of municipal water disinfection by chlorination. Chloroform is the most common THM formed in most natural waters.

Trichloroethene and tetrachloroethene were identified only in monitoring well MW-2, the furthest upgradient well. Consequently, these two compounds may have been derived from an offsite, upgradient source.

Semivolatile (Base/Neutral Extractable) Compounds were not identified in the groundwater samples from monitoring wells MW-2 and MW-3. Naphthalene (at a concentration of 190 µg/L) and 2-Methylnaphthalene (at a concentration of 32 µg/L) were identified in the groundwater sample from MW-1. A MCL has not been established for naphthalene and 2-Methylnaphthalene is not included in Marshack's list.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

The soil sample collected near the groundwater interface from the borehole for MW-1 was found to contain gasoline derived petroleum hydrocarbons at concentrations of concern (> 100 ppm). The other two boreholes did not contain detectable concentrations of petroleum hydrocarbons. MW-1 is downgradient, and immediately adjacent to the remedial excavation. The extent of the soil contamination remaining in the ground peripheral to the remedial excavation should be determined.

Groundwater samples from two of the monitoring wells (MW-2 and MW-3) were found not to contain detectable concentrations of petroleum hydrocarbons. The groundwater sample from MW-1 was found to contain benzene at a concentration above the MCL, as well as detectable concentrations of TPH-G and the other analyzed aromatic hydrocarbons (T, E, & X). The three monitoring wells should be monitored quarterly for fuel hydrocarbons (TPH-D and TPH-G + BTEX). There is no need to continue to monitor for TOG, especially in light of the high detection limit (1,000 µg/L).

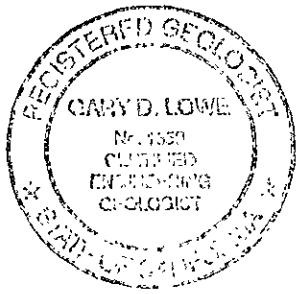
Three volatile halocarbon compounds were identified at typical urban groundwater background concentrations. One of these is derived from municipal water and two were in the upgradientmost monitoring well. There is no known reason to continue to monitor for the presence of volatile halocarbon compounds.

The two Semivolatile Compounds identified in the groundwater sample from monitoring well MW-1 appears to have been derived from the site in the vicinity of the floor hoist area. However, these two compounds were not present in the groundwater from monitoring well MW-1, during the initial monitoring, at a published level of concern. Any efforts to determine the extent of the soil contamination remaining in the ground should also concern itself

with these two Semivolatile Compounds. Any additional downgradient wells that are installed should also, at least initially, monitor Semivolatile Compounds. There is no apparent need to continue monitoring Semivolatile Compounds in monitoring wells MW-2 and MW-3.

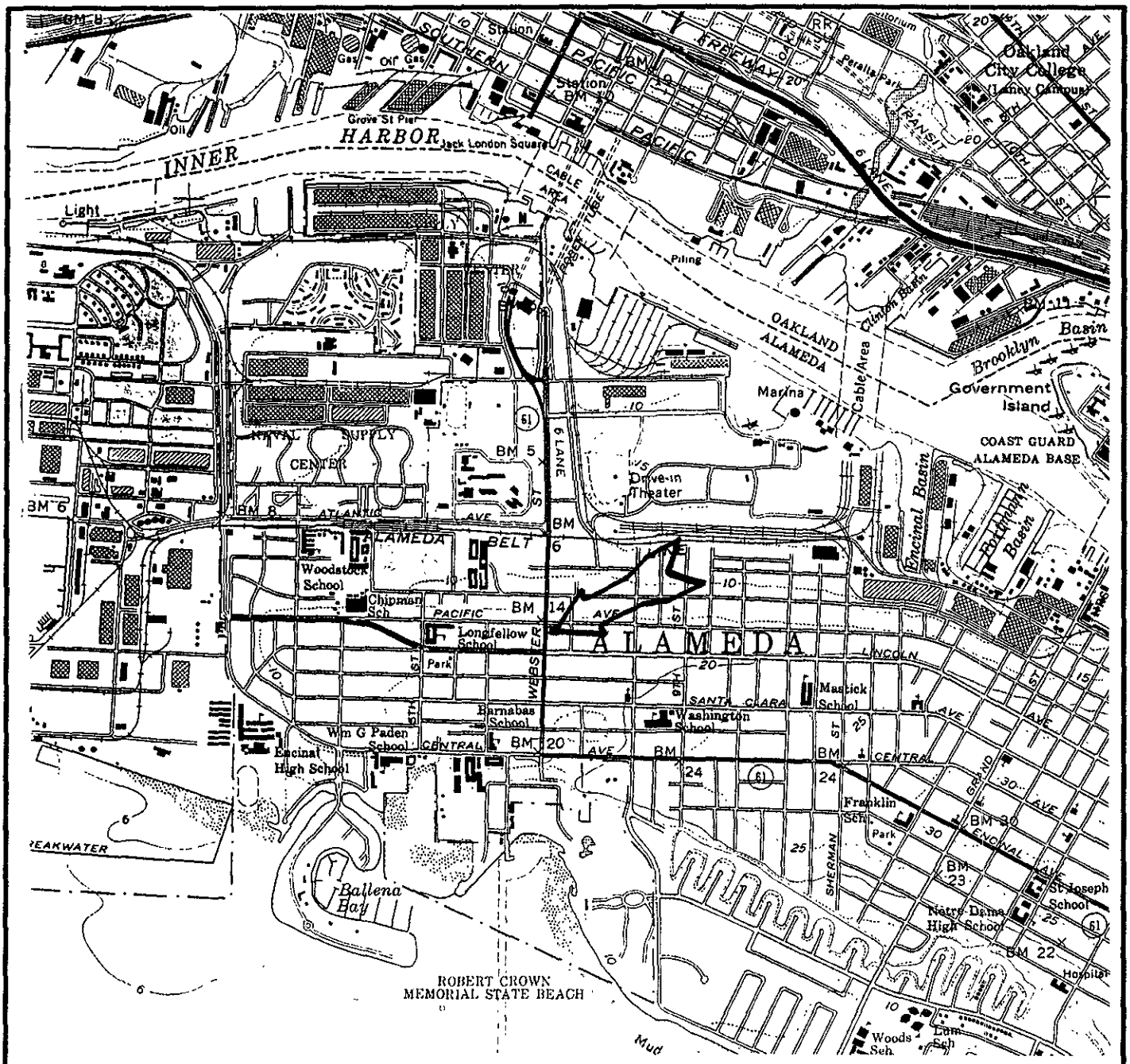
## 5.0 PROFESSIONAL CERTIFICATION

This report on additional boreholes and monitoring wells at the property at 1628 Webster Street in Alameda, California has been prepared by $H_2OGEOL$ A GroundWater Consultancy, by and under the professional supervision of the sole proprietor. The findings, recommendations, specifications, or professional opinions are presented after being investigated and prepared in accordance with generally accepted professional environmental hydrogeologic and groundwater monitoring practice. Incorporation of information developed and or reported by others does not necessarily mean that the undersigned accepts that information as valid. There is no other warranty, either expressed or implied.




This report was prepared by:

Gary D. Lowe, R.G.,C.E.G.,C.H.
Principal, Hydrogeologist
$H_2OGEOL$ A GroundWater Consultancy




Base from U.S. Geological Survey Oakland West 7.5 Minute Series Topographic Map

NORTH

1000 0 1000 2000 3000 4000 5000 FEET

CALIF

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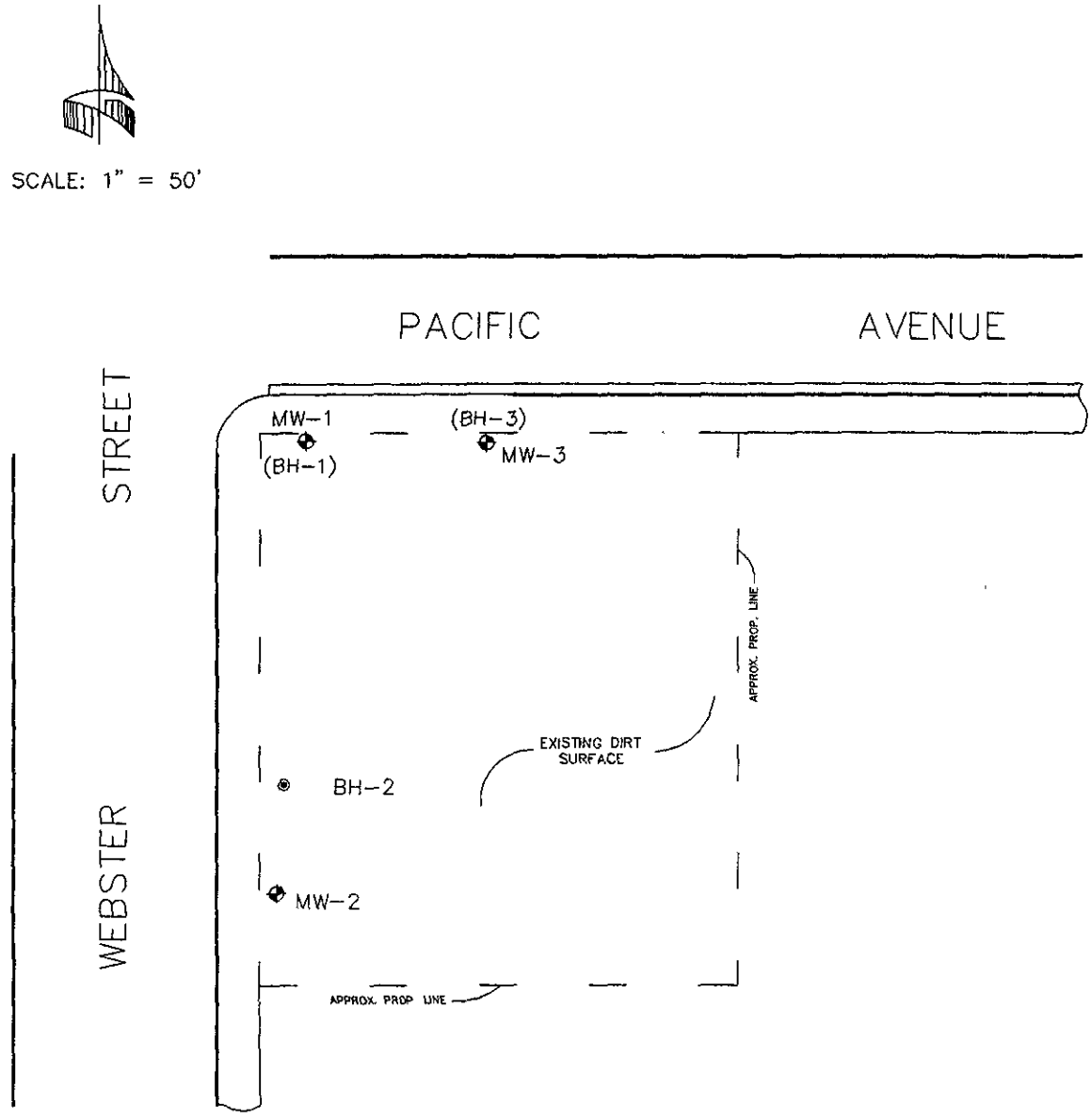
**SITE LOCATION MAP**

**1628 WEBSTER STREET**
**ALAMEDA, CALIFORNIA**

**FIGURE**

**1**

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**MONITORING WELL AND BOREHOLE LOCATION MAP**
**1628 WEBSTER STREET**
**ALAMEDA, CALIFORNIA**

**FIGURE 2**

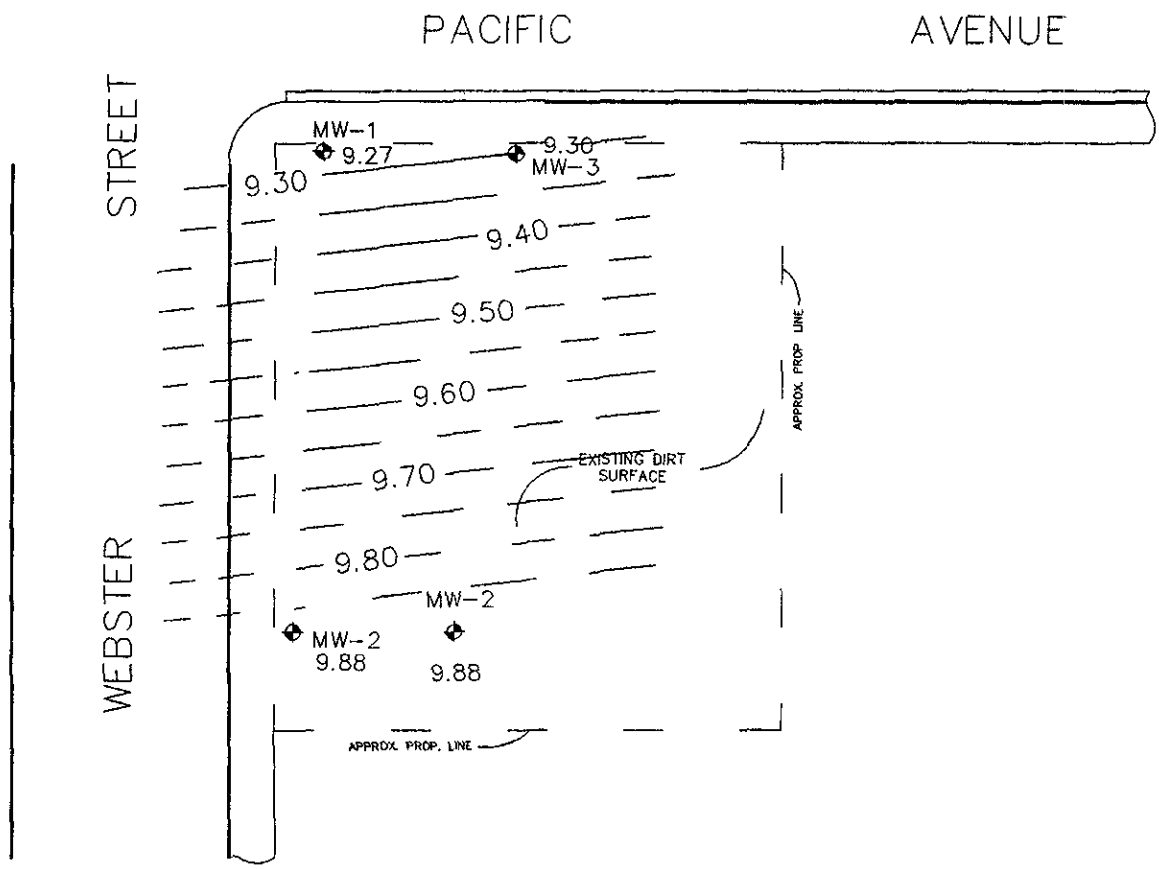
SCALE: 1" = 50'

MW-2 MONITORING WELL NAME/NUMBER

◆ MONITORING WELL LOCATION

9.88 GROUNDWATER ELEVATION AT WELL

— 9.30 — POTENTIOMITRIC SURFACE CONTOUR AND CONTOUR ELEVATION

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**POTENTIOMETRIC SURFACE MAP**
**JULY 11, 1995**
**1628 WEBSTER STREET**
**ALAMEDA, CALIFORNIA**

**FIGURE**
**3**

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# ATTACHMENT A

PERMITS/FORMS

ZONE 7 WATER AGENCY
DRILLING PERMIT APPLICATION/
PERMIT No. 95336

AND

CALIFORNIA DEPARTMENT OF WATER RESOURCES
FORM 188
No. 193170 FOR MW-1
No. 193171 FOR MW-2
No. 193172 FOR MW-3

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94588-5127 • PHONE (510) 484-2600 FAX (510) 462-3914

1 June 1995

H20 Geol
P.O. Box 2165
Livermore, CA 94551

Gentlemen:

Enclosed is drilling permit 95336 for a monitoring well construction project at 1628 Webster Street in Alameda for Mrs. Jean Ratto-Larkin\Jeff Larkin.

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. Please submit the original of your completion report. We will forward your submittal to the California Department of Water Resources.

If you have any questions, please contact Wyman Hong at extension 235 or me at extension 233.

Very truly yours,

Craig A. Mayfield

Craig A. Mayfield
Water Resources Engineer III

WH:mm
Enc.

# ZONE 7 WATER AGENCY

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

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1628 Webster Street. Alameda, California

FOR OFFICE USE

PERMIT NUMBER 95336
LOCATION NUMBER

CLIENT
Name Mrs. Jean Ratto-Lurkin / Jeff Gaskin
Address 16 Las Vegas Rd Voice 254-3035
City Orinda CA 94563 Zip

APPLICANT
Name Gary D. Lowe, R.S C.E.G.
dba HydroGeoSol Fax 373 9222
Address P.O. Box 2163 Voice 373 9211
City Livermore, CA Zip 94551

TYPE OF PROJECT

| Well Construction | | Geotechnical Investigation | |
|---|---|---|---|
| Cathodic Protection | ___ | General | ___ |
| Water Supply | ___ | Contamination | ___ |
| Monitoring (3) | ✓ | Well Destruction | ___ |

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

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger either hand or Holland Steam augers
Cable ___ Other ___

DRILLER'S LICENSE NO. Hand C57 629340 - ASC Drilling, Holland Steam augers C57-658786 V&W Drilling

WELL PROJECTS
Drill Hole Diameter 6 in. Maximum
Casing Diameter 2 in. Depth 16-20 ft., prob. 15'
Surface Seal Depth 5 ft. Number 3

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

ESTIMATED STARTING DATE 06/15/95
ESTIMATED COMPLETION DATE 06/30/95

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

APPLICANT'S SIGNATURE [signature] Date 05/16/95

PERMIT CONDITIONS

Circled Permit Requirements Apply

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

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

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

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

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 1 Jun 95
Wyman Hong

91992

# CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

# REMOVED

# CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

# REMOVED

# CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

# REMOVED

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# ATTACHMENT B

## BOREHOLE LITHOLOGIC LOGS

MW-1
MW-2
MW-3

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# BOREHOLE LITHOLOGIC LOG

BOREHOLE No. MW-1 Sheet 1 of 1

Project No.: Date: 06/23/95 & 07/06/95
Client: Mrs. Jean Ratto Larkin
Location: 1628 Webster Street
Alameda, California
Logged by: GDL Driller: RCV/GDL

Drilling Co. ASE Drilling Drill Model Iwan Auger
Drilling Method - Hand Operation Borehole Diameter 6.25-in
Ground Surface Elevation 15.0 Datum: ground surface
Borehole MW-1 was completed as a monitoring well MW-1

| | | | | |
|---|---|---|---|---|
| Water Level | 5.44 | | | |
| Time | 6:27 | | | |
| Date | 7/11/95 | | | |

| Sampling Blowcounts | PID/FID HNu/OVA reading | Depth test | Sample | Soil Sample Number | Graphic Soil Symbol | USCS Soil Symbol | Field Soil Description |
|---|---|---|---|---|---|---|---|
| | | 1 | | | | | Concrete and base rock |
| | | 2 | | | | | Dark yellowis brown 10YR 4/6 clayey sand |
| | | 3 | | | | SC | |
| | | 4 | | | | | Neat Cement Grout |
| | | 5 | | | | | Dark yellowis brown 10YR 4/6 mottled olive 5Y 5/4 clayey sand Bentonite Seal |
| | | 6 | | | | | Strong petroleum odor beginning at 5.1 - 5.2 feet |
| | | | | | | | First Encountered Water at 6.35 Feet. ▽ |
| | | 7 | | | | | Dark bluish gray 5B 4/1 clayey sand. |
| | | 8 | | | | | |
| | | 9 | | | | | Predominant color value lessening |
| | | 10 | | | | SC | |
| | | 11 | | | | | Bluish gray 5B 5/1mottled grayish green 5G 5/2 clayey sand. |
| | | 12 | | | | | LONESTAR No. 3 Sand |
| | | 13 | | | | | |
| | | 14 | | | | | |
| | | 15 | | | | | Strong petroleum odor continues to total depth. |
| | | 16 | | | | | Total Depth 15.5 (below grade) |
| | | 17 | | | | | Total Well Depth = 15.05 Feet (below reference mark) |
| | | 18 | | | | | Well completed with 8-inch flush box. |
| | | 19 | | | | | |
| | | 20 | | | | | |
| | | 21 | | | | | |
| | | 22 | | | | | |
| | | 23 | | | | | |
| | | 24 | | | | | |
| | | 25 | | | | | |

2-inch PVC casing and screen. 15 slot screen openings = 0.020 inch

well LOG

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# BOREHOLE LITHOLOGIC LOG

BOREHOLE No. MW-2 Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project No.: | Date: 06/23/95 & 07/05-06/95 | Drilling Co. ASE Drilling | Drill Model Iwan Auger |
| Client: Mrs. Jean Ratto Larkin | | Drilling Method - Hand Operation | Borehole Diameter 6.25-in |
| Location: 1628 Webster Street | | Ground Surface Elevation 16.0 | Datum: ground surface |
| Alameda, California | | Borehole MW-2 was completed as a monitoring well MW-2 | |
| Logged by: GDL | Driller: RCV/GDL | | |

| | | | | |
|---|---|---|---|---|
| Water Level | 5.81 | | | |
| Time | 6:26 | | | |
| Date | 7/11/95 | | | |

| Sampling Blowcounts | PID/FID HNu/OVA reading | Depth feet | Sample | Soil Sample Number | Graphic Soil Symbol | USCS Soil Symbol | Field Soil Description |
|---|---|---|---|---|---|---|---|
| | | 1 | | | | SC | Asphalt 0.15 feet, baserock 0.3 feet<br>Dark yellowish brown 10YR 4/4 clayey sand fill with brick fragments. |
| | | 2 | | | | | |
| | | 3 | | | | | Neat Cement Grout |
| | | 4 | | | | | |
| | | 5 | | | | | Bentonite Seal |
| | | 6 | | | | | Dark yellowish brown 10YR 4/4 clayey sand.<br>First Encountered Water at 6.35 Feet. ▽ |
| | | 7 | | | | | |
| | | 8 | | | | SC | |
| | | 9 | | | | | |
| | | 10 | | | | | |
| | | 11 | | | | | Dark yellowish brown 10YR 4/4 clayey sand<br>Possible 0.5-1.0 inch well gradded sands. LONESTAR No 3 Sand |
| | | 12 | | | | | |
| | | 13 | | | | | |
| | | 14 | | | | | |
| | | 15 | | | | | |
| | | 16 | | | | | Total Depth 15.6 (below grade)<br>Total Well Depth = 15.05 Feet (below reference mark)<br>Well completed with 8-inch flush box |
| | | 17 | | | | | |
| | | 18 | | | | | |
| | | 19 | | | | | |
| | | 20 | | | | | |
| | | 21 | | | | | |
| | | 22 | | | | | |
| | | 23 | | | | | |
| | | 24 | | | | | |
| | | 25 | | | | | |

2-inch PVC casing and screen

screen openings = 0.020 inch

H2OGEOL

A GROUND WATER CONSULTANCY

# BOREHOLE LITHOLOGIC LOG

BOREHOLE No. MW-3 Sheet 1 of 1

| | |
|---|---|
| Project No.: | Date: 06/23/95 & 07/05-06/95 |
| Client: Mrs. Jean Ratto Larkin | |
| Location: 1628 Webster Street | |
| Alameda, California | |
| Logged by: GDL | Driller: RCV/GDL |
| Drilling Co. ASE Drilling | Drill Model Iwan Auger |
| Drilling Method - Hand Operation | Borehole Diameter 6.25-in |
| Ground Surface Elevation 15.1 | Datum: ground surface |
| Borehole MW-3 was completed as a monitoring well MW-3 | |

| | | | | |
|---|---|---|---|---|
| Water Level | 5.41 | | | |
| Time | 6:23 | | | |
| Date | 7/11/95 | | | |

| Sampling Blowcounts | PID/FID HNu/OVA reading | Depth feet | Sample | Soil Sample Number | Graphic Soil Symbol | USCS Soil Symbol | Field Soil Description |
|---|---|---|---|---|---|---|---|
| | | 1 | | | | | Asphalt 0.15 feet, baserock 0.3 feet |
| | | 2 | | | | | Dark yellowish brown 10YR 4/4 clayey sand. |
| | | 3 | | | | | |
| | | 4 | | | | | Neat Cement Grout |
| | | 5 | | | | | Bentonite Seal |
| | | 6 | | | | | Dark yellowish brown 10YR 4/4 mottled olive 5Y 5/4 clayey sand. |
| | | 7 | | | | | First Encountered Water at 6.35 Feet. ▽ |
| | | 8 | | | | SC | Dark yellowish brown 10YR 4/4 clayey sand |
| | | 9 | | | | | Clay content varying 10 to 40 percent |
| | | 10 | | | | | |
| | | 11 | | | | | |
| | | 12 | | | | | LONESTAR No. 3 Sand |
| | | 13 | | | | | |
| | | 14 | | | | | |
| | | 15 | | | | | |
| | | 16 | | | | | Total Depth 16.6 (below grade) |
| | | 17 | | | | | Total Well Depth = 15.05 Feet (below reference mark) |
| | | 18 | | | | | Well completed with 8-inch flush box |
| | | 19 | | | | | |
| | | 20 | | | | | |
| | | 21 | | | | | |
| | | 22 | | | | | |
| | | 23 | | | | | |
| | | 24 | | | | | |
| | | 25 | | | | | |

2-inch PVC casing and screen.

screen openings = 0.020 inch

H2OGEOL
A GROUNDWATER CONSULTANCY

P.O.Box 2165 • Livermore, California 94551 • 510-373-9211

# ATTACHMENT C

SOIL SAMPLE ANALYTICAL RESULTS
CHROMALAB, INC.
SUBMISSION # 9506333

# CHROMALAB, INC.

Environmental Services (SDB)

July 6, 1995 *Submission #:* 9506333

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO-LARKIN PROPERTY
*Received:* June 23, 1995

*re:* 3 samples for Diesel analysis.
*Method:* EPA 3550/8015M

*Sampled:* June 23, 1995 *Matrix:* SOIL *Extracted:* July 3, 1995
*Run:* 7490-D *Analyzed:* July 4, 1995

| Spl # | Client Sample ID | DIESEL (mg/Kg) | REPORTING LIMIT (mg/Kg) | BLANK RESULT (mg/Kg) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|---|
| *93703* | MW-1 @ 6.1' | 8.4 | 1.0 | N.D. | 97 |
| *93704* | MW-2 @ 6.0' | N.D. | 1.0 | N.D. | 97 |
| *93705* | MW-3 @ 5.5' | N.D. | 1.0 | N.D. | 97 |

Dennis Mayugba
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

# CHROMALAB, INC.

Environmental Services (SDB)

July 6, 1995 *Submission #:* 9506333

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO-LARKIN PROPERTY
*Received:* June 23, 1995

*re:* 3 samples for Gasoline and BTEX analysis.
*Method:* EPA 5030/8015M/8020

*Sampled:* June 23, 1995 *Matrix:* SOIL
*Run:* 7486-J *Analyzed:* July 5, 1995

| Spl # | Client Sample ID | Gasoline (mg/Kg) | Benzene (ug/Kg) | Toluene (ug/Kg) | Ethyl Benzene (ug/Kg) | Total Xylenes (ug/Kg) |
|---|---|---|---|---|---|---|
| *93703* | MW-1 @ 6.1' | 830 | 120 | 220 | 1100 | 1400 |
| | *For above sample:* | *GAS DET.LIMIT=20mg/Kg, BTEX DET.LIMIT=100ug/Kg* | | | | |
| *93704* | MW-2 @ 6.0' | N.D. | N.D. | N.D. | N.D. | N.D. |
| 93705 | MW-3 @ 5.5' | N.D. | N.D. | N.D. | N.D. | N.D. |
| Reporting Limits | | 1.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Blank Result | | N.D. | N.D. | N.D. | N.D. | N.D. |
| Blank Spike Result (%) | | 96 | 96 | 97 | 100 | 100 |

Jack Kelly
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
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Federal ID #68-0140157

333/93703-93705

22604

# CHROMALAB, INC.

Environmental Services (SDB)

June 27, 1995 *Submission #:* 9506333

H2O GEOL

*Atten:* Gary Lowe

*Project:* RATTO-LARKIN PROPERTY
*Received:* June 23, 1995

re: 3 samples for Oil and Grease analysis.

*Matrix:* SOIL *Extracted:* June 26, 1995
*Sampled:* June 23, 1995 *Run:* 7332-C *Analyzed:* June 26, 1995
*Method:* STANDARD METHODS 5520 E&F

| Spl # CLIENT SMPL ID | OIL & GREASE (mg/Kg) | REPORTING LIMIT (mg/Kg) | BLANK RESULT (mg/Kg) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|
| 93703 MW-1 @ 6.1' | N.D. | 50 | N.D. | 88 |
| 93704 MW-2 @ 6.0' | N.D. | 50 | N.D. | 88 |
| 93705 MW-3 @ 5.5' | N.D. | 50 | N.D. | 88 |

Carolyn House
Extractions Supervisor

Ali Kharrazi
Organic Manager

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(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

$H_2OGEOL$ A GROUNDWATER CONSULTANCY

P.O. BOX 2165
LIVERMORE, CALIFORNIA 94551-2165

SAMPLER(S): Gary D. Lowe & Richard Voret

SAMPLER'S SIGNATURE:

CHAIN OF CUSTODY

DATE: 06/23/95 PAGE 1 of 1

Sample Source:
Ratto-Larkin Property
1628 Webster Street JOB #: 9506333 REP: GC
Alameda, California CLIENT: H2OGEOL
DATE: 07/06/95
ANALYTE REF #:22604

SAMPLE RECIEPT:
TOTAL No. of CONTAINERS 3
CHAIN OF CUSTODY SEALS N
REC'D GOOD CONDITION/COLD Y
CONFORMS TO RECORD Y
LAB NO.

FAX RESULTS TO (510) 373-9222

| SAMPLE ID. | DATE | TIME | MATRIX | LAB ID. | Total Petroleum Hydrocarbons as Diesel (EPA 3550/8015) | Total petroleum Hydrocarbons as Gasoline + BTEX (EPA 5030/8015M + 8020) | Total Oil and Grease (Standard Method 5520 e & f) | | | | NUMBER OF CONTAINERS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 at 6.1 Ft. | 6/23/95 | 08:15 | SOIL | | X | X | X | | | | 1 |
| MW-2 at 6.0 Ft. | 6/23/95 | 09:50 | SOIL | | X | X | X | | | | 1 |
| MW-3 at 5.5 Ft. | 6/23/95 | 10:25 | SOIL | | X | X | X | | | | 1 |

Please note special pricing
per Gary Cook.
10-Day TAT

RELINQUISHED BY:
SIGNATURE
PRINTED NAME Gary D. Lowe
COMPANY $H_2OGEOL$
TIME 12:51
DATE 6/23/95

RELINQUISHED BY:
SIGNATURE
PRINTED NAME
COMPANY
TIME
DATE

RECEIVED BY:
SIGNATURE
PRINTED NAME
COMPANY
TIME
DATE

RECEIVED BY LABORATORY:
SIGNATURE Ruda Nyachoto 12:55
PRINTED NAME Ruda Nyachoto
COMPANY Chromalab, Inc.
TIME
DATE 06/23/95

H2OGEOL
A GROUNDWATER CONSULTANCY

P.O.Box 2165 ■ Livermore, California 94551 ■ 510-373-9211

# ATTACHMENT D

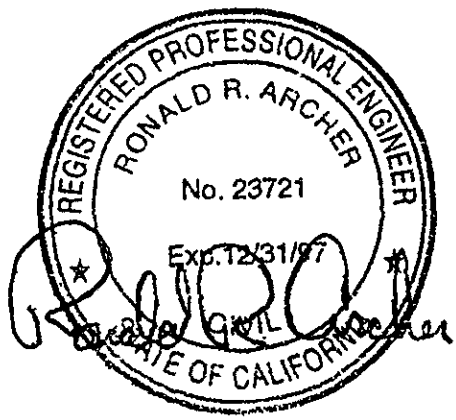
## WELL SURVEYOR'S REPORT
## RON ARCHER, CIVIL ENGINEER, INC.

# RON ARCHER

CIVIL ENGINEER INC.

CONSULTING • PLANNING • DESIGN • SURVEYING

4133 Mohr Ave., Suite E • Pleasanton, CA 94566
(510) 462-9372


JULY 14, 1995 JOB NO 2305

ELEVATIONS OF EXISTING MONITORING WELLS LOCATED AT 1628 WEBSTER STREET, CITY OF ALAMEDA, ALAMEDA COUNTY, CALIFORNIA.

FOR: *$H_2O$ GEOL*

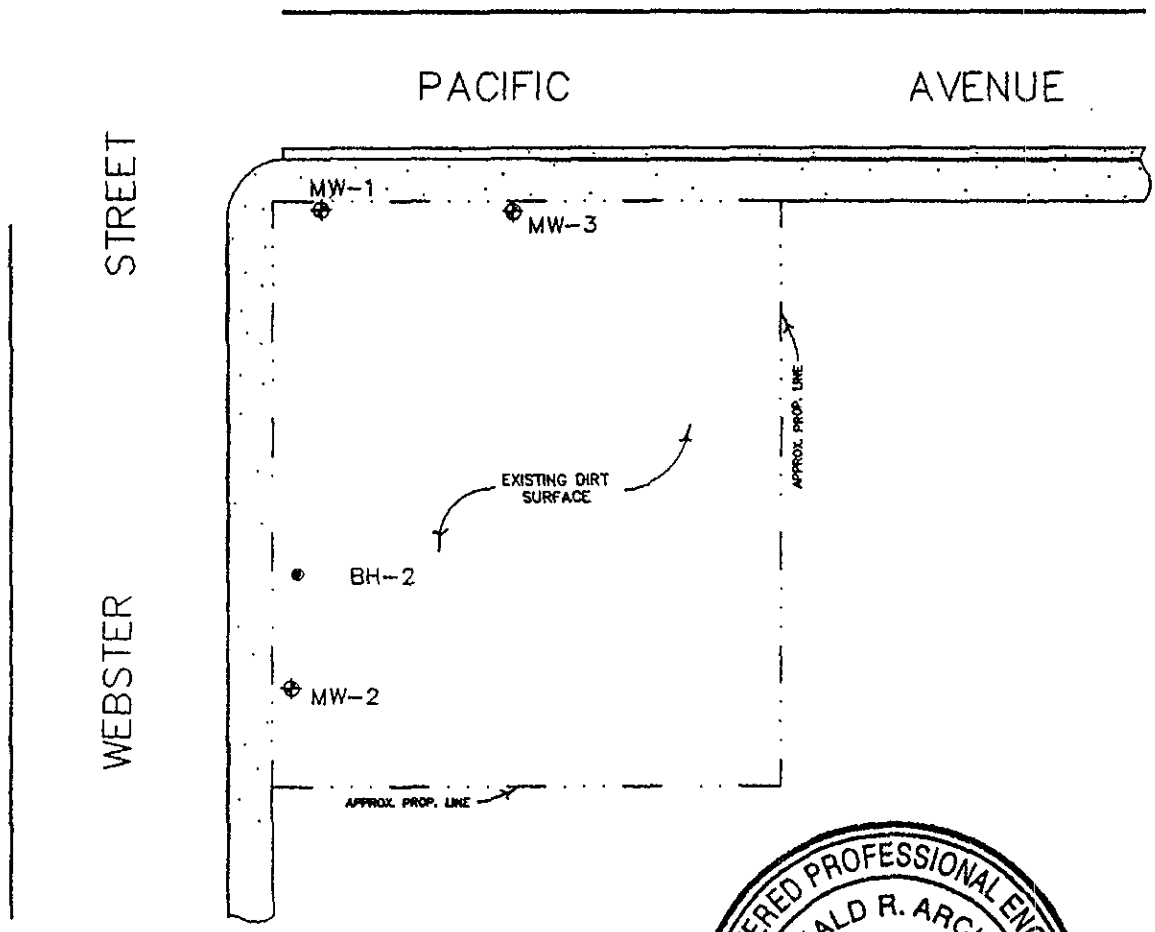
*BENCHMARK:* **WEB-PAC-1947**

THE TOP OF A FOUND U.S.G.S. BRASS DISK STAMPED WEB-PAC-1947, SET IN A STANDARD CITY MONUMENT CASING IN THE SIDEWALK AT THE NORTHWEST CORNER OF THE INTERSECTION OF PACIFIC AVENUE AND WEBSTER STREET, APPROXIMATELY 1 FOOT BELOW GROUND SURFACE. ELEVATION TAKEN AS 14.055 M.S.L. (N.G.V.D.)

## MONITORING WELL DATA TABLE

| WELL DESIGNATION | TOP OF CASING ELEVATION | TOP OF BOX ELEVATION |
|---|---|---|
| | | |
| MW-1 | 14.71 | 14.98 |
| | | |
| MW-2 | 15.69 | 15.95 |
| | | |
| MW-3 | 14.71 | 15.09 |
| | | |
| BH-2 | 15.53 (GROUND) | |
| | | |

SCALE: 1" = 50'

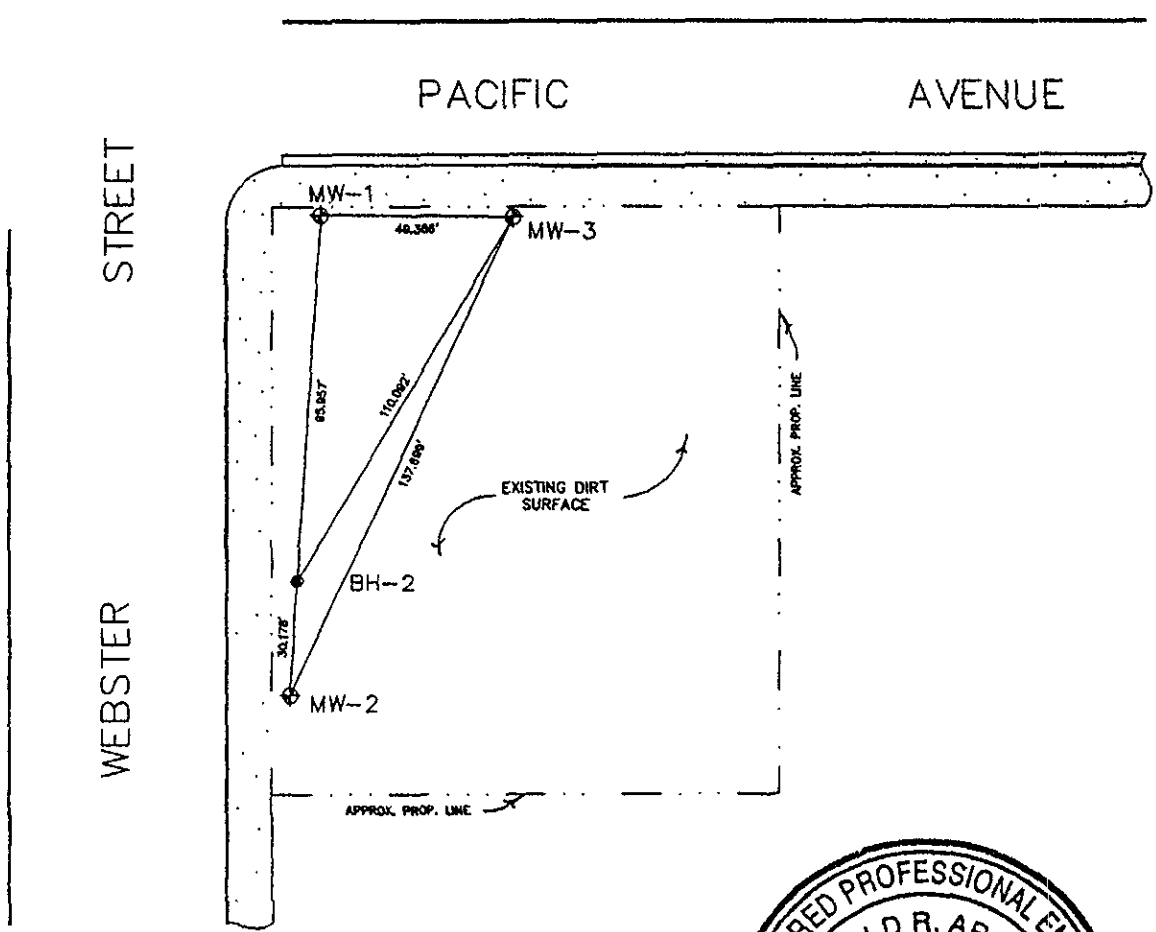



REGISTERED PROFESSIONAL ENGINEER
RONALD R. ARCHER
No. 23721
Exp. 12/31/97
STATE OF CALIFORNIA

1628 WEBSTER STREET
CITY OF ALAMEDA,
CALIFORNIA

RON ARCHER CIVIL ENGINEER INC. • 4133 MOHR AVE. SUITE E • PLEASANTON CA. 94566 | DATE: JULY 14, 1995 | JOB NO. 2305

SCALE: 1" = 50'




REGISTERED PROFESSIONAL ENGINEER
RONALD R. ARCHER
No. 23721
Exp. 12/31/97
CIVIL
STATE OF CALIFORNIA

1628 WEBSTER STREET
CITY OF ALAMEDA,
CALIFORNIA

| | | |
|---|---|---|
| RON ARCHER CIVIL ENGINEER INC. * 4133 MOHR AVE. SUITE E * PLEASANTON CA. 94566 | DATE: JULY 14, 1995 | JOB NO. 2305 |

H2OGEOL
A GROUND WATER CONSULTANCY

P.O.Box 2165 • Livermore,California 94551 • 510-373-9211

# ATTACHMENT E

## LOG OF WELL SAMPLING ACTIVITIES

## LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW-1 Project Name: 1625 Webster St, Alameda Date: 7/11/95

Sampled by: GTL Weather Conditions: Partly cloudy, 68°F

Well Location: _____ Well Casing Diameter: 2" Depth of Well Casing: 16.05

Measuring Point: Top of PVC Casing Initial Depth to Water: 5.44 @ 06:27 Final Depth to Water: _____

Casing Volume (1 vol./ 3 vol): 1.34 / 4.01 Well Borehole Volume: _____

Purging Method: Centrifugal Pump/Peristaltic Pump; Grundfos Submersible Pump; Centrifugal Pump/ES-60 Submersible; ES-60 12v Submersible Pump ✓

Sampling Method: Peristaltic Pump; Grundfos Submersible Pump; Teflon Bailer; ES-60 ✓

Purging Rate: See below Total Discharge: 8.0 Casing Volumes Purged: 5.2

Comments: _____

Waste Water Disposal: To Drum

Starting Time: 8:14

Time Pump on: 8:19

| Date | Time | Gal. Purged | pH | T deg. F | Diluted S.C. | | Dil. Factor | | S.C. (µS/cm) | Color |
|---|---|---|---|---|---|---|---|---|---|---|
| 7/11/95 | 8:21 | 1.5 | 7.19 | 68.1 | | x | | = | 693 | colorless |
| " | 8:25 | 4.0 | 6.97 | 68.0 | | x | | = | 681 | " " |
| " | 8:27 | 5.0 | 6.96 | 68.4 | | x | | = | 662 | " " |
| " | 8:29 | 6.0 | 6.97 | 68.3 | | x | | = | 660 | " " |
| " | 8:31 | 7.0 | 6.95 | 68.3 | | x | | = | 665 | " " |
| " | 8:33 | 8.0 | 6.96 | 68.1 | | x | | = | 659 | " " |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |

Sample Identification: _____ Sample Time: 8:36

TURBIDITY ANALYSIS

Finishing Time: _____ Time Analyzed: _____ NTU Value: _____

## LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW-2 Project Name: 1628 Webster St, Alameda Date: 07/11/95

Sampled by: GTL Weather Conditions: Steady fog

Well Location: _____ Well Casing Diameter: 2in Depth of Well Casing: 15.04

Measuring Point: Top of PVC Casing Initial Depth to Water: 5.81 @ 06:26 Final Depth to Water: _____

Casing Volume (1 vol./ 3 vol): 1.48 / 4.42 Well Borehole Volume: _____

Purging Method: Centrifugal Pump/Peristaltic Pump; Grundfos Submersible Pump; Centrifugal Pump/ES-60 Submersible; ES-60 12v Submersible Pump ✓

Sampling Method: Peristaltic Pump; Grundfos Submersible Pump; Teflon Bailer ✓; ES-60 ✓

Purging Rate: See below Total Discharge: 7.0 Casing Volumes Purged: 4.7

Comments: _____

Waste Water Disposal: To Drum

Starting Time: 7:01

Time Pump on: 7:11

| Date | Time | Gal. Purged | pH | T deg. F | Diluted S.C. | | Dil. Factor | | S.C. (µS/cm) | Color |
|---|---|---|---|---|---|---|---|---|---|---|
| 7/11/95 | 7:15 | 4.0 | 7.45 | 65.9 | | x | | = | 575 | yel. Brown |
| " | 7:18 | 5.0 | 7.34 | 66.0 | | x | | = | 537 | lt. yellow |
| " | 7:20 | 5.5 | 7.28 | 65.7 | | x | | = | 529 | " " |
| " | 7:22 | 6.0 | 7.25 | 65.8 | | x | | = | 527 | colorless |
| " | 7:24 | 6.5 | 7.27 | 65.8 | | x | | = | 532 | " " |
| " | 7:26 | 7.0 | 7.26 | 65.8 | | x | | = | 526 | " " |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |

Sample Identification: MW-2 Sample Time: 7:30

TURBIDITY ANALYSIS

Finishing Time: _____ Time Analyzed: _____ NTU Value: _____

## LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW-3 Project Name: 1628 Webster Street, Alameda Date: 7/11/95

Sampled by: GPL Weather Conditions: Partly cloudy, 68°F

Well Location: _____ Well Casing Diameter: 2" Depth of Well Casing: 15.05

Measuring Point: Top of PVC Casing Initial Depth to Water: 5.41 @ 06:23 Final Depth to Water: _____

Casing Volume (1 vol./ 3 vol): 1.54/ 4.63 Well Borehole Volume: _____

Purging Method: Centrifugal Pump/Peristaltic Pump; Grundfos Submersible Pump; Centrifugal Pump/ES-60 Submersible; ES-60 12v Submersible Pump ✓

Sampling Method: Peristaltic Pump; Grundfos Submersible Pump; Teflon Bailer ✓; EA 60 ✓

Purging Rate: See below Total Discharge: 7.5 Casing Volumes Purged: 4.9

Comments: _____

Waste Water Disposal: To drum

Starting Time: 7:41

Time Pump on: 7:45

| Date | Time | Gal. Purged | pH | T deg. F | Diluted S.C. | | Dil. Factor | | S.C. (µS/cm) | Color |
|---|---|---|---|---|---|---|---|---|---|---|
| 7/11/95 | 7:46 | 1.5 | 7.07 | 66.5 | | x | | = | 707 | yellow |
| " | 7:50 | 4.0 | 7.11 | 66.6 | | x | | = | 727 | " |
| " | 7:52 | 5.0 | 7.12 | 66.5 | | x | | = | 722 | " |
| " | 7:54 | 6.0 | 7.13 | 66.4 | | x | | = | 719 | " |
| " | 7:56 | 7.0 | 7.14 | 66.4 | | x | | = | 721 | " |
| " | 7:58 | 7.5 | 7.11 | 66.3 | | x | | = | 717 | " |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |
| | | | | | | x | | = | | |

Sample Identification: MW-3 Sample Time: 8:01

TURBIDITY ANALYSIS

Finishing Time: _____ Time Analyzed: _____ NTU Value: _____

H2OGEOL
A GROUNDWATER CONSULTANCY

P.O.Box 2165 • Livermore, California 94551 • 510-373-9211

# ATTACHMENT F

## GROUNDWATER SAMPLE ANALYTICAL RESULTS
## CHROMALAB, INC.
## SUBMISSION # 9507091

# CHROMALAB, INC.

Environmental Services (SDB)

July 25, 1995

H20 GEOL

*Submission #:* 9507091

*Atten:* Gary Lowe

*Project:* RATTO LARKIN

REPORTING INFORMATION

Sample(s) were received cold and in good condition on July 11, 1995. They were refrigerated on receipt, and analyzed on the date shown on the attached report. ChromaLab followed EPA or equivalent methods for all analyses reported.

No discrepancies were observed or difficulties encountered with the analysis.

Hydrocarbons in the kerosene range were observed in sample, MW-1.

Bill Thomas
Quality Assurance Manager

Eric Tam
Laboratory Director

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

# CHROMALAB, INC.

Environmental Services (SDB)

July 20, 1995

*Submission #:* 9507091

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* 3 samples for Oil and Grease analysis.
*Method:* STANDARD METHODS 5520 B&F

*Sampled:* July 11, 1995 *Matrix:* WATER *Extracted:* July 12, 1995
*Run:* 7592-C *Analyzed:* July 12, 1995

| Spl # | Client Sample ID | OIL & GREASE (mg/L) | REPORTING LIMIT (mg/L) | BLANK RESULT (mg/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|---|
| *95417* | MW-1 | N.D. | 1.0 | N.D. | 92 |
| *95418* | MW-2 | N.D. | 1.0 | N.D. | 92 |
| *95419* | MW-3 | N.D. | 1.0 | N.D. | 92 |

Carolyn House
Extractions Supervisor

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

# CHROMALAB, INC.

Environmental Services (SDB)

July 25, 1995 *Submission #:* 9507091

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* 3 samples for Diesel analysis.
*Method:* EPA 3510/8015M

*Sampled:* July 11, 1995 *Matrix:* WATER *Extracted:* July 12, 1995
*Run:* 7753-D *Analyzed:* July 13, 1995

| Spl # | Sample ID | DIESEL (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|---|
| 95417 | MW-1 | N.D. | 50 | N.D. | 84 |
| 95418 | MW-2 | N.D. | 50 | N.D. | 84 |
| 95419 | MW-3 | N.D. | 50 | N.D. | 84 |

Dennis Mayugba
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 20, 1995 *Submission #:* 9507091

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* 3 samples for Gasoline and BTEX analysis.
*Method:* EPA 5030/8015M/602/8020

*Sampled:* July 11, 1995 *Matrix:* WATER
*Run:* 7612-2 *Analyzed:* July 13, 1995

| Spl # | Client Sample ID | Gasoline (mg/L) | Benzene (ug/L) | Toluene (ug/L) | Ethyl Benzene (ug/L) | Total Xylenes (ug/L) |
|---|---|---|---|---|---|---|
| *95417* | MW-1 | 6.3 | 16 | 3.0 | 28 | 88 |
| *95418* | MW-2 | N.D. | N.D. | N.D. | N.D. | N.D. |
| *95419* | MW-3 | N.D. | N.D. | N.D. | N.D. | N.D. |
| | Reporting Limits | 0.05 | 0.5 | 0.5 | 0.5 | 0.5 |
| | Blank Result | N.D. | N.D. | N.D. | N.D. | N.D. |
| | Blank Spike Result (%) | 90 | 100 | 97 | 99 | 92 |

Jack Kelly
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

# CHROMALAB, INC.

Environmental Services (SDB)

July 25, 1995 *Submission #:* 9507091

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* One sample for Volatile Halogenated Organics analysis.
*Method:* EPA 8010

*SampleID:* MW-1
*Sample #:* 95417 *Matrix:* WATER
*Sampled:* July 11, 1995 *Run:* 7754-O *Analyzed:* July 24, 1995

| Analyte | RESULT (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|
| CHLOROMETHANE | N.D. | 0.5 | N.D. | -- |
| VINYL CHLORIDE | N.D. | 0.5 | N.D. | -- |
| BROMOMETHANE | N.D. | 0.5 | N.D. | -- |
| CHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| TRICHLOROFLUOROMETHANE | N.D. | 0.5 | N.D. | -- |
| 1,1-DICHLOROETHENE | N.D. | 0.5 | N.D. | 86 |
| METHYLENE CHLORIDE | N.D. | 0.5 | N.D. | -- |
| TRANS-1,2-DICHLOROETHENE | N.D. | 0.5 | N.D. | -- |
| CIS-1,2-DICHLOROETHENE | N.D. | 0.5 | N.D. | -- |
| 1,1-DICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| CHLOROFORM | 17 | 0.5 | N.D. | -- |
| 1,1,1-TRICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| CARBON TETRACHLORIDE | N.D. | 0.5 | N.D. | -- |
| 1,2-DICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| TRICHLOROETHENE | N.D. | 0.5 | N.D. | 115 |
| 1,2-DICHLOROPROPANE | N.D. | 0.5 | N.D. | -- |
| BROMODICHLOROMETHANE | N.D. | 0.5 | N.D. | -- |
| 2-CHLOROETHYLVINYL ETHER | N.D. | 0.5 | N.D. | -- |
| TRANS-1,3-DICHLOROPROPENE | N.D. | 0.5 | N.D. | -- |
| CIS-1,3-DICHLOROPROPENE | N.D. | 0.5 | N.D. | -- |
| 1,1,2-TRICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| TETRACHLOROETHENE | N.D. | 0.5 | N.D. | -- |
| DIBROMOCHLOROMETHANE | N.D. | 0.5 | N.D. | -- |
| CHLOROBENZENE | N.D. | 0.5 | N.D. | 108 |
| BROMOFORM | N.D. | 0.5 | N.D. | -- |
| 1,1,2,2-TETRACHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| 1,3-DICHLOROBENZENE | N.D. | 0.5 | N.D. | -- |
| 1,4-DICHLOROBENZENE | N.D. | 0.5 | N.D. | -- |
| 1,2-DICHLOROBENZENE | N.D. | 0.5 | N.D. | -- |
| TRICHLOROTRIFLUOROETHANE | N.D. | 0.5 | N.D. | -- |

Oleg Nemtsov
Chemist

Ali Kharrazi
Organic Manager

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CHROMALAB, INC.

Environmental Services (SDB)

July 25, 1995 *Submission #:* 9507091

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* One sample for Volatile Halogenated Organics analysis.
*Method:* EPA 8010

*SampleID:* MW-2
*Sample #:* 95418 *Matrix:* WATER
*Sampled:* July 11, 1995 *Run:* 7754-O *Analyzed:* July 24, 1995

| Analyte | RESULT (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|
| CHLOROMETHANE | N.D. | 0.5 | N.D. | -- |
| VINYL CHLORIDE | N.D. | 0.5 | N.D. | -- |
| BROMOMETHANE | N.D. | 0.5 | N.D. | -- |
| CHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| TRICHLOROFLUOROMETHANE | N.D. | 0.5 | N.D. | -- |
| 1,1-DICHLOROETHENE | N.D. | 0.5 | N.D. | 86 |
| METHYLENE CHLORIDE | N.D. | 0.5 | N.D. | -- |
| TRANS-1,2-DICHLOROETHENE | N.D. | 0.5 | N.D. | -- |
| CIS-1,2-DICHLOROETHENE | N.D. | 0.5 | N.D. | -- |
| 1,1-DICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| CHLOROFORM | N.D. | 0.5 | N.D. | -- |
| 1,1,1-TRICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| CARBON TETRACHLORIDE | N.D. | 0.5 | N.D. | -- |
| 1,2-DICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| TRICHLOROETHENE | 2.6 | 0.5 | N.D. | 115 |
| 1,2-DICHLOROPROPANE | N.D. | 0.5 | N.D. | -- |
| BROMODICHLOROMETHANE | N.D. | 0.5 | N.D. | -- |
| 2-CHLOROETHYLVINYL ETHER | N.D. | 0.5 | N.D. | -- |
| TRANS-1,3-DICHLOROPROPENE | N.D. | 0.5 | N.D. | -- |
| CIS-1,3-DICHLOROPROPENE | N.D. | 0.5 | N.D. | -- |
| 1,1,2-TRICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| TETRACHLOROETHENE | 2.8 | 0.5 | N.D. | -- |
| DIBROMOCHLOROMETHANE | N.D. | 0.5 | N.D. | -- |
| CHLOROBENZENE | N.D. | 0.5 | N.D. | 108 |
| BROMOFORM | N.D. | 0.5 | N.D. | -- |
| 1,1,2,2-TETRACHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| 1,3-DICHLOROBENZENE | N.D. | 0.5 | N.D. | -- |
| 1,4-DICHLOROBENZENE | N.D. | 0.5 | N.D. | -- |
| 1,2-DICHLOROBENZENE | N.D. | 0.5 | N.D. | -- |
| TRICHLOROTRIFLUOROETHANE | N.D. | 0.5 | N.D. | -- |

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# CHROMALAB, INC.

Environmental Services (SDB)

July 25, 1995 *Submission #:* 9507091

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* One sample for Volatile Halogenated Organics analysis.
*Method:* EPA 8010

*SampleID:* MW-3
*Sample #:* 95419 *Matrix:* WATER
*Sampled:* July 11, 1995 *Run:* 7754-O *Analyzed:* July 24, 1995

| Analyte | RESULT (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|
| CHLOROMETHANE | N.D. | 0.5 | N.D. | -- |
| VINYL CHLORIDE | N.D. | 0.5 | N.D. | -- |
| BROMOMETHANE | N.D. | 0.5 | N.D. | -- |
| CHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| TRICHLOROFLUOROMETHANE | N.D. | 0.5 | N.D. | -- |
| 1,1-DICHLOROETHENE | N.D. | 0.5 | N.D. | 86 |
| METHYLENE CHLORIDE | N.D. | 0.5 | N.D. | -- |
| TRANS-1,2-DICHLOROETHENE | N.D. | 0.5 | N.D. | -- |
| CIS-1,2-DICHLOROETHENE | N.D. | 0.5 | N.D. | -- |
| 1,1-DICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| CHLOROFORM | N.D. | 0.5 | N.D. | -- |
| 1,1,1-TRICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| CARBON TETRACHLORIDE | N.D. | 0.5 | N.D. | -- |
| 1,2-DICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| TRICHLOROETHENE | N.D. | 0.5 | N.D. | 115 |
| 1,2-DICHLOROPROPANE | N.D. | 0.5 | N.D. | -- |
| BROMODICHLOROMETHANE | N.D. | 0.5 | N.D. | -- |
| 2-CHLOROETHYLVINYL ETHER | N.D. | 0.5 | N.D. | -- |
| TRANS-1,3-DICHLOROPROPENE | N.D. | 0.5 | N.D. | -- |
| CIS-1,3-DICHLOROPROPENE | N.D. | 0.5 | N.D. | -- |
| 1,1,2-TRICHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| TETRACHLOROETHENE | N.D. | 0.5 | N.D. | -- |
| DIBROMOCHLOROMETHANE | N.D. | 0.5 | N.D. | -- |
| CHLOROBENZENE | N.D. | 0.5 | N.D. | 108 |
| BROMOFORM | N.D. | 0.5 | N.D. | -- |
| 1,1,2,2-TETRACHLOROETHANE | N.D. | 0.5 | N.D. | -- |
| 1,3-DICHLOROBENZENE | N.D. | 0.5 | N.D. | -- |
| 1,4-DICHLOROBENZENE | N.D. | 0.5 | N.D. | -- |
| 1,2-DICHLOROBENZENE | N.D. | 0.5 | N.D. | -- |
| TRICHLOROTRIFLUOROETHANE | N.D. | 0.5 | N.D. | -- |

Oleg Nemtsov
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CHROMALAB, INC.

Environmental Services (SDB)

July 20, 1995 *Submission #:* 9507091

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* One sample for Semivolatile (Base/Neutral Extractable) Compounds analysis.
*Method:* EPA 3510/625
*SampleID:*
*Sample #:* MW-1
*Sampled:* 95417 *Matrix:* WATER *Extracted:* July 17, 1995
July 11, 1995 *Run:* 7663-A *Analyzed:* July 19, 1995

| Analyte | RESULT (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|
| PHENOL | N.D. | 2 | N.D. | -- |
| BIS(2-CHLOROETHYL)ETHER | N.D. | 2 | N.D. | -- |
| 2-CHLOROPHENOL | N.D. | 2 | N.D. | 79 |
| 1,3-DICHLOROBENZENE | N.D. | 2 | N.D. | -- |
| 1,4-DICHLOROBENZENE | N.D. | 2 | N.D. | -- |
| BENZYL ALCOHOL | N.D. | 2 | N.D. | -- |
| 1,2-DICHLOROBENZENE | N.D. | 2 | N.D. | -- |
| 2-METHYLPHENOL | N.D. | 2 | N.D. | -- |
| BIS(2-CHLOROISOPROPYL)ETHER | N.D. | 2 | N.D. | -- |
| 4-METHYLPHENOL | N.D. | 2 | N.D. | -- |
| N-NITROSO-DI-N-PROPYLAMINE | N.D. | 2 | N.D. | 70 |
| HEXACHLOROETHANE | N.D. | 2 | N.D. | -- |
| NITROBENZENE | N.D. | 2 | N.D. | -- |
| ISOPHORONE | N.D. | 2 | N.D. | -- |
| 2-NITROPHENOL | N.D. | 2 | N.D. | -- |
| 2,4-DIMETHYL PHENOL | N.D. | 2 | N.D. | -- |
| BIS(2-CHLOROETHOXY)METHANE | N.D. | 2 | N.D. | -- |
| 2,4-DICHLOROPHENOL | N.D. | 2 | N.D. | -- |
| 1,2,4-TRICHLOROBENZENE | N.D. | 2 | N.D. | 69 |
| NAPHTHALENE | 190 | 2 | N.D. | -- |
| 4-CHLOROANILINE | N.D. | 2 | N.D. | -- |
| HEXACHLOROBUTADIENE | N.D. | 2 | N.D. | -- |
| 4-CHLORO-3-METHYLPHENOL | N.D. | 4 | N.D. | 65 |
| 2-METHYLNAPHTHALENE | 32 | 2 | N.D. | -- |
| HEXACHLOROCYCLOPENTADIENE | N.D. | 2 | N.D. | -- |
| 2,4,6-TRICHLOROPHENOL | N.D. | 2 | N.D. | -- |
| 2,4,5-TRICHLOROPHENOL | N.D. | 2 | N.D. | -- |
| 2-CHLORONAPHTHALENE | N.D. | 2 | N.D. | -- |
| 2-NITROANILINE | N.D. | 2 | N.D. | -- |
| DIMETHYL PHTHALATE | N.D. | 2 | N.D. | -- |
| ACENAPHTHYLENE | N.D. | 2 | N.D. | -- |
| 3-NITROANILINE | N.D. | 2 | N.D. | -- |
| ACENAPHTHENE | N.D. | 2 | N.D. | 72 |
| 2,4-DINITROPHENOL | N.D. | 6 | N.D. | -- |
| 4-NITROPHENOL | N.D. | 5 | N.D. | -- |
| DIBENZOFURAN | N.D. | 2 | N.D. | -- |
| 2,4-DINITROTOLUENE | N.D. | 2 | N.D. | -- |

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# CHROMALAB, INC.

Environmental Services (SDB)

July 20, 1995 *Submission #:* 9507091
*page 2*

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* One sample for Semivolatile (Base/Neutral Extractable) Compounds analysis, continued.
*Method:* EPA 3510/625
*SampleID:*
*Sample #:* MW-1
*Sampled:* 95417 *Matrix:* WATER *Extracted:* July 17, 1995
July 11, 1995 *Run:* 7663-A *Analyzed:* July 19, 1995

| Analyte | RESULT (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|
| 2,6-DINITROTOLUENE | N.D. | 2 | N.D. | -- |
| DIETHYL PHTHALATE | N.D. | 2 | N.D. | -- |
| 4-CHLOROPHENYLPHENYLETHER | N.D. | 2 | N.D. | -- |
| FLUORENE | N.D. | 2 | N.D. | -- |
| 4-NITROANILINE | N.D. | 2 | N.D. | -- |
| 4,6-DINITRO-2-METHYLPHENOL | N.D. | 5 | N.D. | -- |
| N-NITROSODI-N-PHENYLAMINE | N.D. | 2 | N.D. | -- |
| 4-BROMOPHENYLPHENYLETHER | N.D. | 2 | N.D. | -- |
| HEXACHLOROBENZENE | N.D. | 2 | N.D. | -- |
| PENTACHLOROPHENOL | N.D. | 5 | N.D. | 67 |
| PHENANTHRENE | N.D. | 2 | N.D. | -- |
| ANTHRACENE | N.D. | 2 | N.D. | -- |
| DI-N-BUTYL PHTHALATE | N.D. | 2 | N.D. | -- |
| FLUORANTHENE | N.D. | 2 | N.D. | -- |
| PYRENE | N.D. | 2 | N.D. | 83 |
| BUTYL BENZYL PHTHALATE | N.D. | 2 | N.D. | -- |
| 3,3'-DICHLOROBENZIDINE | N.D. | 4 | N.D. | -- |
| BENZO(A)ANTHRACENE | N.D. | 2 | N.D. | -- |
| BIS(2-ETHYLHEXYL)PHTHALATE | N.D. | 2 | N.D. | -- |
| CHRYSENE | N.D. | 2 | N.D. | -- |
| DI-N-OCTYLPHTHALATE | N.D. | 2 | N.D. | -- |
| BENZO(B)FLUORANTHENE | N.D. | 2 | N.D. | -- |
| BENZO(K)FLUORANTHENE | N.D. | 2 | N.D. | -- |
| BENZO(A)PYRENE | N.D. | 2 | N.D. | -- |
| INDENO(1,2,3-CD)PYRENE | N.D. | 2 | N.D. | -- |
| DIBENZO(A,H)ANTHRACENE | N.D. | 2 | N.D. | -- |
| BENZO(GHI)PERYLENE | N.D. | 2 | N.D. | -- |
| BENZOIC ACID | N.D. | 2 | N.D. | -- |

Alex Tam
Chemist

Ali Kharrazi
Organic Manager

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CHROMALAB, INC.

Environmental Services (SDB)

July 20, 1995 *Submission #:* 9507091

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* One sample for Semivolatile (Base/Neutral Extractable) Compounds analysis.
*Method:* EPA 3510/625
*SampleID:*
*Sample #:* MW-2
*Sampled:* 95418 *Matrix:* WATER *Extracted:* July 17, 1995
July 11, 1995 *Run:* 7663-A *Analyzed:* July 19, 1995

| Analyte | RESULT (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|
| PHENOL | N.D. | 2 | N.D. | -- |
| BIS(2-CHLOROETHYL)ETHER | N.D. | 2 | N.D. | -- |
| 2-CHLOROPHENOL | N.D. | 2 | N.D. | 79 |
| 1,3-DICHLOROBENZENE | N.D. | 2 | N.D. | -- |
| 1,4-DICHLOROBENZENE | N.D. | 2 | N.D. | -- |
| BENZYL ALCOHOL | N.D. | 2 | N.D. | -- |
| 1,2-DICHLOROBENZENE | N.D. | 2 | N.D. | -- |
| 2-METHYLPHENOL | N.D. | 2 | N.D. | -- |
| BIS(2-CHLOROISOPROPYL)ETHER | N.D. | 2 | N.D. | -- |
| 4-METHYLPHENOL | N.D. | 2 | N.D. | -- |
| N-NITROSO-DI-N-PROPYLAMINE | N.D. | 2 | N.D. | 70 |
| HEXACHLOROETHANE | N.D. | 2 | N.D. | -- |
| NITROBENZENE | N.D. | 2 | N.D. | -- |
| ISOPHORONE | N.D. | 2 | N.D. | -- |
| 2-NITROPHENOL | N.D. | 2 | N.D. | -- |
| 2,4-DIMETHYL PHENOL | N.D. | 2 | N.D. | -- |
| BIS(2-CHLOROETHOXY)METHANE | N.D. | 2 | N.D. | -- |
| 2,4-DICHLOROPHENOL | N.D. | 2 | N.D. | -- |
| 1,2,4-TRICHLOROBENZENE | N.D. | 2 | N.D. | 69 |
| NAPHTHALENE | N.D. | 2 | N.D. | -- |
| 4-CHLOROANILINE | N.D. | 2 | N.D. | -- |
| HEXACHLOROBUTADIENE | N.D. | 2 | N.D. | -- |
| 4-CHLORO-3-METHYLPHENOL | N.D. | 4 | N.D. | 65 |
| 2-METHYLNAPHTHALENE | N.D. | 2 | N.D. | -- |
| HEXACHLOROCYCLOPENTADIENE | N.D. | 2 | N.D. | -- |
| 2,4,6-TRICHLOROPHENOL | N.D. | 2 | N.D. | -- |
| 2,4,5-TRICHLOROPHENOL | N.D. | 2 | N.D. | -- |
| 2-CHLORONAPHTHALENE | N.D. | 2 | N.D. | -- |
| 2-NITROANILINE | N.D. | 2 | N.D. | -- |
| DIMETHYL PHTHALATE | N.D. | 2 | N.D. | -- |
| ACENAPHTHYLENE | N.D. | 2 | N.D. | -- |
| 3-NITROANILINE | N.D. | 2 | N.D. | -- |
| ACENAPHTHENE | N.D. | 2 | N.D. | 72 |
| 2,4-DINITROPHENOL | N.D. | 5 | N.D. | -- |
| 4-NITROPHENOL | N.D. | 5 | N.D. | -- |
| DIBENZOFURAN | N.D. | 2 | N.D. | -- |
| 2,4-DINITROTOLUENE | N.D. | 2 | N.D. | -- |

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# CHROMALAB, INC.

Environmental Services (SDB)

July 20, 1995 *Submission #:* 9507091
*page 2*

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* One sample for Semivolatile (Base/Neutral Extractable) Compounds analysis, continued.
*Method:* EPA 3510/625
*SampleID:*
*Sample #:* MW-2
*Sampled:* 95418 *Matrix:* WATER *Extracted:* July 17, 1995
July 11, 1995 *Run:* 7663-A *Analyzed:* July 19, 1995

| Analyte | RESULT (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|
| 2,6-DINITROTOLUENE | N.D. | 2 | N.D. | -- |
| DIETHYL PHTHALATE | N.D. | 2 | N.D. | -- |
| 4-CHLOROPHENYLPHENYLETHER | N.D. | 2 | N.D. | -- |
| FLUORENE | N.D. | 2 | N.D. | -- |
| 4-NITROANILINE | N.D. | 2 | N.D. | -- |
| 4,6-DINITRO-2-METHYLPHENOL | N.D. | 5 | N.D. | -- |
| N-NITROSODI-N-PHENYLAMINE | N.D. | 2 | N.D. | -- |
| 4-BROMOPHENYLPHENYLETHER | N.D. | 2 | N.D. | -- |
| HEXACHLOROBENZENE | N.D. | 2 | N.D. | -- |
| PENTACHLOROPHENOL | N.D. | 5 | N.D. | 67 |
| PHENANTHRENE | N.D. | 2 | N.D. | -- |
| ANTHRACENE | N.D. | 2 | N.D. | -- |
| DI-N-BUTYL PHTHALATE | N.D. | 2 | N.D. | -- |
| FLUORANTHENE | N.D. | 2 | N.D. | -- |
| PYRENE | N.D. | 2 | N.D. | 83 |
| BUTYL BENZYL PHTHALATE | N.D. | 2 | N.D. | -- |
| 3,3'-DICHLOROBENZIDINE | N.D. | 4 | N.D. | -- |
| BENZO(A)ANTHRACENE | N.D. | 2 | N.D. | -- |
| BIS(2-ETHYLHEXYL)PHTHALATE | N.D. | 2 | N.D. | -- |
| CHRYSENE | N.D. | 2 | N.D. | -- |
| DI-N-OCTYLPHTHALATE | N.D. | 2 | N.D. | -- |
| BENZO(B)FLUORANTHENE | N.D. | 2 | N.D. | -- |
| BENZO(K)FLUORANTHENE | N.D. | 2 | N.D. | -- |
| BENZO(A)PYRENE | N.D. | 2 | N.D. | -- |
| INDENO(1,2,3-CD)PYRENE | N.D. | 2 | N.D. | -- |
| DIBENZO(A,H)ANTHRACENE | N.D. | 2 | N.D. | -- |
| BENZO(GHI)PERYLENE | N.D. | 2 | N.D. | -- |
| BENZOIC ACID | N.D. | 2 | N.D. | -- |

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Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 20, 1995 *Submission #:* 9507091

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* One sample for Semivolatile (Base/Neutral Extractable) Compounds analysis.
*Method:* EPA 3510/625
*SampleID:*
*Sample #:* MW-3
*Sampled:* 95419 *Matrix:* WATER *Extracted:* July 17, 1995
July 11, 1995 *Run:* 7663-A *Analyzed:* July 19, 1995

| Analyte | RESULT (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|
| PHENOL | N.D. | 2 | N.D. | -- |
| BIS(2-CHLOROETHYL)ETHER | N.D. | 2 | N.D. | -- |
| 2-CHLOROPHENOL | N.D. | 2 | N.D. | 79 |
| 1,3-DICHLOROBENZENE | N.D. | 2 | N.D. | -- |
| 1,4-DICHLOROBENZENE | N.D. | 2 | N.D. | -- |
| BENZYL ALCOHOL | N.D. | 2 | N.D. | -- |
| 1,2-DICHLOROBENZENE | N.D. | 2 | N.D. | -- |
| 2-METHYLPHENOL | N.D. | 2 | N.D. | -- |
| BIS(2-CHLOROISOPROPYL)ETHER | N.D. | 2 | N.D. | -- |
| 4-METHYLPHENOL | N.D. | 2 | N.D. | -- |
| N-NITROSO-DI-N-PROPYLAMINE | N.D. | 2 | N.D. | 70 |
| HEXACHLOROETHANE | N.D. | 2 | N.D. | -- |
| NITROBENZENE | N.D. | 2 | N.D. | -- |
| ISOPHORONE | N.D. | 2 | N.D. | -- |
| 2-NITROPHENOL | N.D. | 2 | N.D. | -- |
| 2,4-DIMETHYL PHENOL | N.D. | 2 | N.D. | -- |
| BIS(2-CHLOROETHOXY)METHANE | N.D. | 2 | N.D. | -- |
| 2,4-DICHLOROPHENOL | N.D. | 2 | N.D. | -- |
| 1,2,4-TRICHLOROBENZENE | N.D. | 2 | N.D. | 69 |
| NAPHTHALENE | N.D. | 2 | N.D. | -- |
| 4-CHLOROANILINE | N.D. | 2 | N.D. | -- |
| HEXACHLOROBUTADIENE | N.D. | 2 | N.D. | -- |
| 4-CHLORO-3-METHYLPHENOL | N.D. | 4 | N.D. | 65 |
| 2-METHYLNAPHTHALENE | N.D. | 2 | N.D. | -- |
| HEXACHLOROCYCLOPENTADIENE | N.D. | 2 | N.D. | -- |
| 2,4,6-TRICHLOROPHENOL | N.D. | 2 | N.D. | -- |
| 2,4,5-TRICHLOROPHENOL | N.D. | 2 | N.D. | -- |
| 2-CHLORONAPHTHALENE | N.D. | 2 | N.D. | -- |
| 2-NITROANILINE | N.D. | 2 | N.D. | -- |
| DIMETHYL PHTHALATE | N.D. | 2 | N.D. | -- |
| ACENAPHTHYLENE | N.D. | 2 | N.D. | -- |
| 3-NITROANILINE | N.D. | 2 | N.D. | -- |
| ACENAPHTHENE | N.D. | 2 | N.D. | 72 |
| 2,4-DINITROPHENOL | N.D. | 6 | N.D. | -- |
| 4-NITROPHENOL | N.D. | 5 | N.D. | -- |
| DIBENZOFURAN | N.D. | 2 | N.D. | -- |
| 2,4-DINITROTOLUENE | N.D. | 2 | N.D. | -- |

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091/95417-95419

SUB#: 9507091 REP: GC
CLIENT: H2OGEOL
DATE: 07/25/95
REF ~~#22843~~ 23c77

22843

# CHROMALAB, INC.

Environmental Services (SDB)

July 20, 1995

*Submission #:* 9507091
*page 2*

H20 GEOL

*Atten:* Gary Lowe

*Project:* RATTO LARKIN
*Received:* July 11, 1995

*re:* One sample for Semivolatile (Base/Neutral Extractable) Compounds analysis, continued.
*Method:* EPA 3510/625
*SampleID:*
*Sample #:* MW-3
*Sampled:* 95419 *Matrix:* WATER *Extracted:* July 17, 1995
July 11, 1995 *Run:* 7663-A *Analyzed:* July 19, 1995

| Analyte | RESULT (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE RESULT (%) |
|---|---|---|---|---|
| 2,6-DINITROTOLUENE | N.D. | 2 | N.D. | -- |
| DIETHYL PHTHALATE | N.D. | 2 | N.D. | -- |
| 4-CHLOROPHENYLPHENYLETHER | N.D. | 2 | N.D. | -- |
| FLUORENE | N.D. | 2 | N.D. | -- |
| 4-NITROANILINE | N.D. | 2 | N.D. | -- |
| 4,6-DINITRO-2-METHYLPHENOL | N.D. | 5 | N.D. | -- |
| N-NITROSODI-N-PHENYLAMINE | N.D. | 2 | N.D. | -- |
| 4-BROMOPHENYLPHENYLETHER | N.D. | 2 | N.D. | -- |
| HEXACHLOROBENZENE | N.D. | 2 | N.D. | -- |
| PENTACHLOROPHENOL | N.D. | 5 | N.D. | 67 |
| PHENANTHRENE | N.D. | 2 | N.D. | -- |
| ANTHRACENE | N.D. | 2 | N.D. | -- |
| DI-N-BUTYL PHTHALATE | N.D. | 2 | N.D. | -- |
| FLUORANTHENE | N.D. | 2 | N.D. | -- |
| PYRENE | N.D. | 2 | N.D. | 83 |
| BUTYL BENZYL PHTHALATE | N.D. | 2 | N.D. | -- |
| 3,3'-DICHLOROBENZIDINE | N.D. | 4 | N.D. | -- |
| BENZO(A)ANTHRACENE | N.D. | 2 | N.D. | -- |
| BIS(2-ETHYLHEXYL)PHTHALATE | N.D. | 2 | N.D. | -- |
| CHRYSENE | N.D. | 2 | N.D. | -- |
| DI-N-OCTYLPHTHALATE | N.D. | 2 | N.D. | -- |
| BENZO(B)FLUORANTHENE | N.D. | 2 | N.D. | -- |
| BENZO(K)FLUORANTHENE | N.D. | 2 | N.D. | -- |
| BENZO(A)PYRENE | N.D. | 2 | N.D. | -- |
| INDENO(1,2,3-CD)PYRENE | N.D. | 2 | N.D. | -- |
| DIBENZO(A,H)ANTHRACENE | N.D. | 2 | N.D. | -- |
| BENZO(GHI)PERYLENE | N.D. | 2 | N.D. | -- |
| BENZOIC ACID | N.D. | 2 | N.D. | -- |

Alex Tam
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

07/25 510-373-9222

N:QCREV719 YT 11:21:42

$H_2OGEOL$ A GROUNDWATER CONSULTANCY

P.O. BOX 2165
LIVERMORE, CALIFORNIA 94551-2165

CHAIN OF CUSTODY

DATE: 07/11/95 PAGE 1 of 1

Sample Source:
Ratto-Larkin Property
1628 Webster Street
Alameda, California

SAMPLER(S): Gary D. Lowe & Richard Vorst

SAMPLER'S SIGNATURE:

SAMPLE RECIEPT:
TOTAL No. of CONTAINERS
CHAIN OF CUSTODY SEALS
RECD GOOD CONDITION/COLD
CONFORMS TO RECORD
LAB NO.

FAX RESULTS TO (510) 373-9222

| SAMPLE ID. | DATE | TIME | MATRIX | LAB ID. | Total Petroleum Hydrocarbons as Diesel (EPA 3550/8015) | Total petroleum Hydrocarbons as Gasoline + BTEX (EPA 5030/8015M + 8020/602) | Total Oil and Grease (Standard Method 5520 b & f) | Volatile Hydrocarbons (EPA 8010) | Base, Neutral, & Acid Extractables (EPA 8270/625) | NUMBER OF CONTAINERS |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 7/11/95 | 08:36 | WATER | | X | X | X | X | X | 7 |
| MW-2 | 7/11/95 | 07:30 | WATER | | X | X | X | X | X | 7 |
| MW-3 | 7/11/95 | 08:01 | WATER | | X | X | X | X | X | 7 |

Please note special pricing
per Gary Cook.
10-day TAT

ANALYTE

RELINQUISHED BY:
SIGNATURE
PRINTED NAME Gary D. Lowe
COMPANY $H_2OGEOL$
TIME 15:47
DATE 07/11/95

RELINQUISHED BY:
SIGNATURE
PRINTED NAME
COMPANY
TIME
DATE

RECEIVED BY:
SIGNATURE
PRINTED NAME Kevin Molander
COMPANY Chromalab
TIME 15:43
DATE 7/11/95

RECEIVED BY LABORATORY::
SIGNATURE
PRINTED NAME
COMPANY Chromalab, Inc.
TIME
DATE 07/11/95


P.O.Box 2165
Livermore, California, 94551

510-373-9211