aqua science engineers inc.

October 8, 1997

# QUARTERLY GROUNDWATER MONITORING REPORT
# SEPTEMBER 24, 1997 GROUNDWATER SAMPLING
# ASE JOB NO. 2659
# at
# Romak Iron Works
# 3250 Hollis Street
# Oakland, California 94662

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
2411 Old Crow Canyon Road, #4
San Ramon, CA 94583
(510) 820-9391

## 1.0 INTRODUCTION

This report outlines the methods and findings of Aqua Science Engineers, Inc. (ASE)'s quarterly groundwater sampling at the Romak Iron Works property located at 3250 Hollis Street in Oakland, California *(Figures 1 and 2)*.

## 2.0 GROUNDWATER SAMPLING

On September 24, 1997, ASE measured the depth to water in the site groundwater monitoring well using an electric water level sounder. The well was also checked for the presence of free-floating hydrocarbons. The well contained a hydrocarbon sheen. Prior to sampling, the well was purged of four well casing volumes of groundwater using a pre-cleaned polyethylene bailer. The groundwater samples were decanted from the bailer into three (3) 40-ml volatile organic analysis (VOA) vials preserved with hydrochloric acid and three (3) 1-liter amber glass bottles. The samples were labeled, placed in protective foam sleeves, and placed in coolers with wet ice for transport to Chromalab, Inc. of Pleasanton, California (ELAP #1094) under appropriate chain of custody documentation.

Well sampling purge water was contained in DOT 17H drums and stored on-site for handling by the client at a later date. The well sampling log is included as Appendix A.

## 3.0 ANALYTICAL RESULTS FOR GROUNDWATER

The groundwater samples were analyzed by Chromalab for total petroleum hydrocarbons as gasoline (TPH-G) by EPA Method 5030/8015M, total petroleum hydrocarbons as diesel (TPH-D) by EPA Method 3510/8015M, benzene, toluene, ethylbenzene and total xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8020, and hydrocarbon oil and grease (O&G) by Standard Method 5520 B&F. The analytical results are presented in Tables One and Two. The certified analytical report and chain of custody documentation are included in Appendix B.

## TABLE ONE
Certified Analytical Results of **GROUNDWATER** Samples
TPH-G, TPH-D, BTEX and MTBE
All results are in **parts per billion**

| Sampling Date | TPH Gasoline | TPH Diesel | Benzene | Toluene | Ethyl Benzene | Total Xylenes | MTBE |
|---|---|---|---|---|---|---|---|
| 08-04-93 | 12,000 | --- | 7.6 | 9.7 | 9.9 | 29 | --- |
| 11-18-93 | 10,270 | --- | 3,169 | 38.3 | 661.2 | 659.4 | --- |
| 02-09-94 | 17,000 | --- | 6,200 | 64 | 770 | 420 | --- |
| 05-25-94 | 24,000 | --- | 6,200 | 27 | 1,100 | 210 | --- |
| 08-18-94 | 22,000 | --- | 5,000 | 10 | 740 | 150 | --- |
| 11-14-94 | 20,000 | 4,200 | 4,200 | 25 | 860 | 450 | --- |
| 02-03-95 | 20,000 | 4,600* | 3,400 | 11 | 810 | 100 | --- |
| 05-02-95 | 21,000 | 3,400 | 3,100 | 21 | 910 | 130 | --- |
| 08-08-95 | 17,000 | 1,800 | 2,800 | 11 | 680 | 63 | --- |
| 11-13-95 | 17,000 | <1,000 | 2,300 | 8 | 550 | 69 | --- |
| 02-16-96 | 8,900 | 7,600 | 3,100 | 21 | 760 | 474 | <40 |
| 05-17-96 | 9,900 | 1,400 | 2,100 | 6 | 560 | 23 | 120 |
| 08-01-96 | 11,000 | 5,100*** | 1,600 | 14 | 580 | 66 | <50 |
| 11-12-96 | 13,000 | 6,000*** | 910 | 27 | 440 | 440 | 85 |
| 02-06-97 | 16,000 | 7,000* | 1,200 | 170 | 660 | 410 | < 500 |
| 05-21-97 | 8,600 | 2,900* | 720 | < 10 | 460 | 41 | 170 |
| **09-24-97** | **6,400** | **2,600** | **520** | **12** | **310** | **13** | **210** |
| DTSC MCL | NE | NE | 1.0 | 100** | 680 | 1,750 | 35**** |
| EPA METHOD | 5030/ 8015M | 3510/ 8015M | 8020 | 8020 | 8020 | 8020 | 8020 |

--- = Not analyzed
NE = Not established
DTSC = California EPA Department of Toxic Substance Control
MCL = maximum contaminant level for drinking water
* = motor oil detected
** = DTSC recommended action level for drinking water; MCL not established
*** = Fuel pattern does not match diesel standard, concentration due to overlap of the gasoline fuel pattern into the diesel range
**** = DTSC interim action level; MCL not established.

## TABLE TWO
Certified Analytical Results of **GROUNDWATER** Samples
Oil and Grease
All results are in **parts per billion**

| Sampling Date | Total Oil & Grease | Hydrocarbon Oil & Grease |
|---|---|---|
| 11-14-94 | 4,000 | <1,000 |
| 02-07-95 | 11,000 | 9,300 |
| 05-02-95 | 5,000 | 1,000 |
| 08-08-95 | 11,000 | 9,700 |
| 11-13-95 | 1,000 | <1,000 |
| 02-16-96 | --- | <5,000 |
| 05-17-96 | --- | 1,100 |
| 08-01-96 | --- | 1,000 |
| 11-12-96 | --- | < 1,000 |
| 02-06-97 | --- | 1,700 |
| 05-21-97 | --- | 2,600 |
| **09-24-97** | **---** | **< 1,000** |
| EPA METHOD | 5520C | 5520BF |

## 4.0 CONCLUSIONS

TPH-G, TPH-D, benzene, and MTBE were detected in groundwater samples collected from monitoring well MW-1 at 6,400 parts per billion (ppb), 2,600 ppb, 520 ppb, and 210 ppb, respectively. The toluene, ethylbenzene, and total xylenes concentrations detected this quarter did not exceed California Department of Toxic Substance Control (DTSC) maximum contaminant levels (MCLs) or recommended action levels (RALs) for drinking water. The benzene concentration of 520 ppb exceeded the DTSC MCL for drinking water of 1 ppb. The MTBE concentration of 210 ppb exceeded the DTSC interim action level of 35 ppb.

With the exception of MTBE, concentrations of petroleum hydrocarbons have shown a decreasing trend since November 1993. **ASE recommends modifying the groundwater sampling schedual from quarterly to semi-annually. ASE requests a written response from the ACHCSA approving or disapproving this recommendation.**

## 5.0 REPORT LIMITATIONS

The results of this investigation represent conditions at the time of the groundwater sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory.

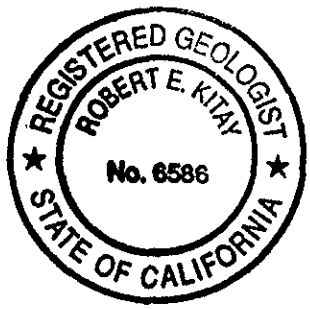
It does not fully characterize the site for contamination resulting from unknown sources, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the analytical data.

Aqua Science Engineers appreciates the opportunity to assist Romak Iron Works with its environmental needs. Should you have any questions or comments, please feel free to call us at (510) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

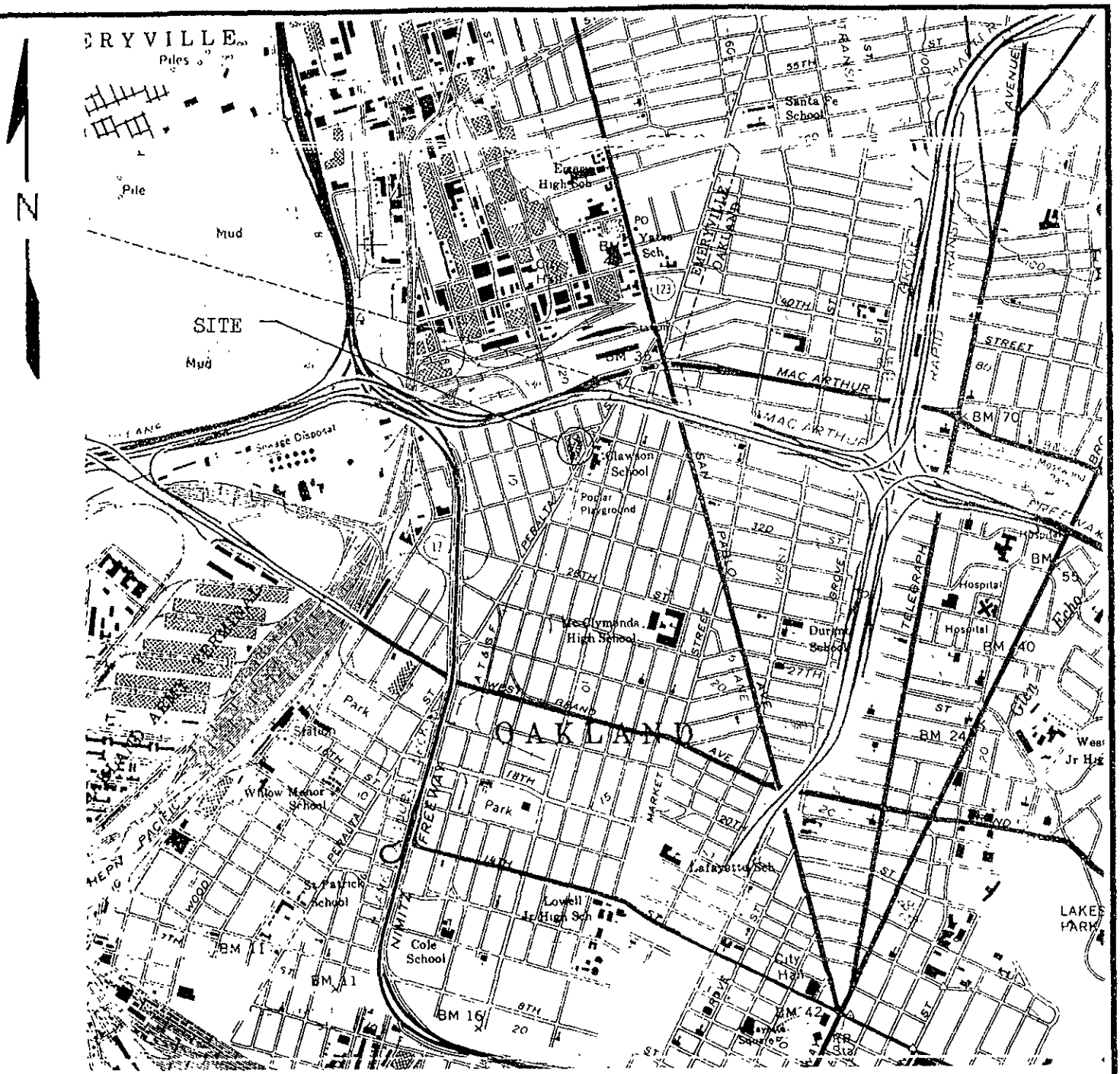
Charlie Rous
Staff Geologist




Robert E. Kitay, R.G.
Senior Geologist

Attachments: Figures 1 and 2
Appendices A and B

cc: Mr. Kevin Romak, Romak Iron Works
Ms. Susan Hugo, Alameda County Health Care Services Agency
Mr. Kevin Graves, California Regional Water Quality Control Board

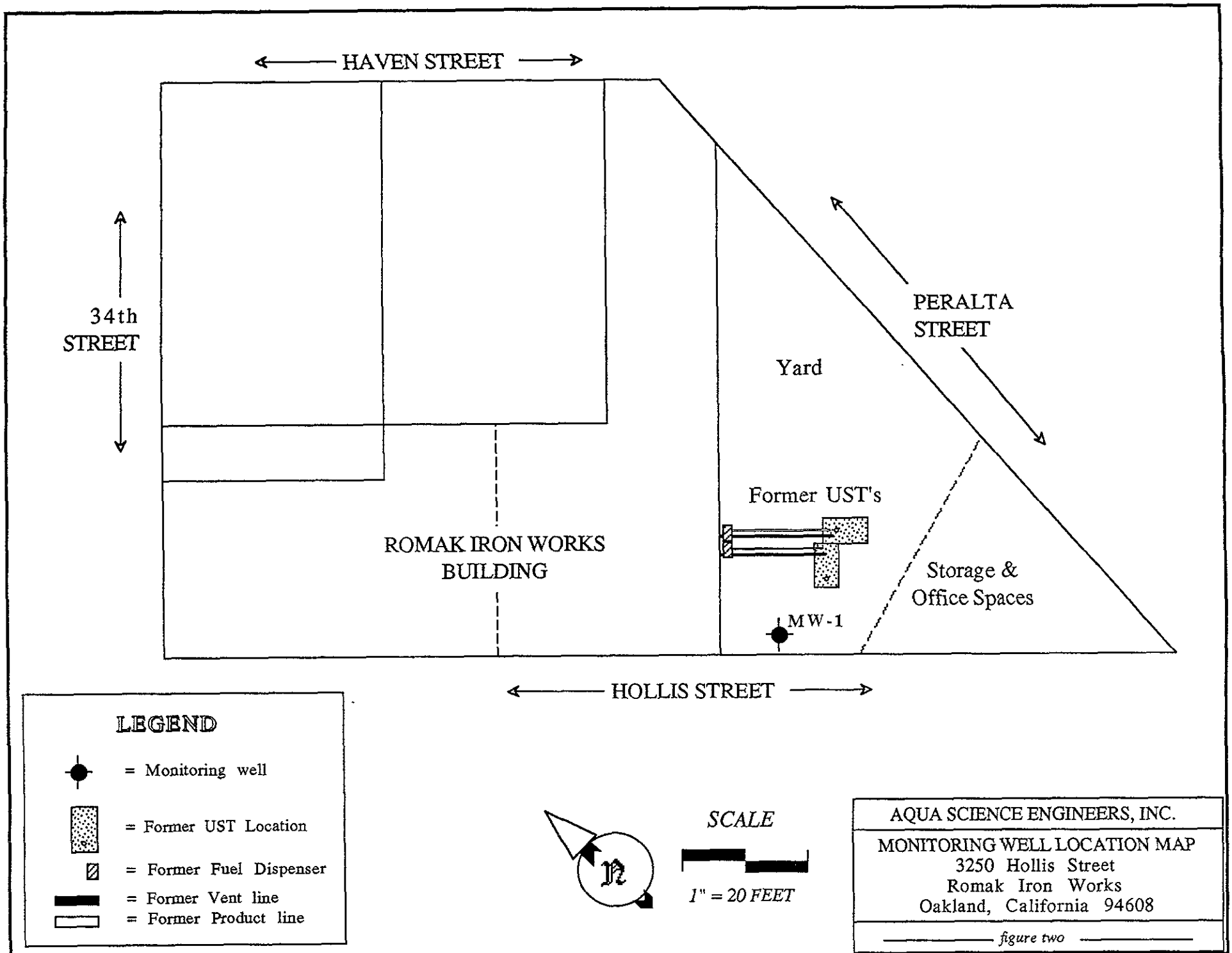



# SITE LOCATION MAP

Romak Iron Works
3250 Hollis Street
Oakland, California

Aqua Science Engineers | Figure 1

BASE USGS Oakland West 7 5 minute quadrangle topographic r
dated 1980, scale 1:24,000.


HAVEN STREET
34th STREET
PERALTA STREET
Yard
Former UST's
ROMAK IRON WORKS BUILDING
Storage & Office Spaces
MW-1
HOLLIS STREET
LEGEND
= Monitoring well
= Former UST Location
= Former Fuel Dispenser
= Former Vent line
= Former Product line
SCALE
1" = 20 FEET
AQUA SCIENCE ENGINEERS, INC.
MONITORING WELL LOCATION MAP
3250 Hollis Street
Romak Iron Works
Oakland, California 94608
figure two

# APPENDIX A

Well Sampling Field Log

aqua science engineers inc.

# WELL SAMPLING FIELD LOG

Project Name and Address: Ronald Iron Works, Oakland, CA
Job #: 2657 Date of sampling: 9/24/97
Well Name: MW-1 Sampled by: CR
Total depth of well (feet): 21.65 Well diameter (inches): 2"
Depth to water before sampling (feet): 8.61
Thickness of floating product if any: Sheen
Depth of well casing in water (feet): 13.04 x 0.17
Number of gallons per well casing volume (gallons): 2.22
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 8.8
Equipment used to purge the well: Dedicated Bailer
Time Evacuation Began: 8:45 Time Evacuation Finished: 9:05
Approximate volume of groundwater purged: 8
Did the well go dry?: No After how many gallons:
Time samples were collected: 9 30
Depth to water at time of sampling: 10.82
Percent recovery at time of sampling: 83%
Samples collected with: Dedicated Bailer
Sample color: Grey Odor: Moderate
Description of sediment in sample: Dark Hydrocarbon odors in water.

## CHEMICAL DATA

| Volume Purged | Temp | pH | Conductivity |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

## SAMPLES COLLECTED

| Sample | # of containers | Volume & type container | Pres | Iced? | Analysis |
|---|---|---|---|---|---|
| MW-1 | 3 | VOA 40ml | HCl | Y | TPH-g/BTEX/MTBE |
| MW-1 | 4 | Amber Liter | NA | Y | O,G & Grease/Diesel |
| | | | | | |
| | | | | | |
| | | | | | |

# APPENDIX B

Certified Analytical Report
and
Chain of Custody Documentation

# CHROMALAB, INC.

Environmental Services (SDB)

October 3, 1997 *Submission #:* 9709433

AQUA SCIENCE ENGINEERS INC

*Atten:* CHARLIE ROUS

*Project:* ROMAK IRON WORKS *Project#:* 2659
*Received:* September 25, 1997

*re:* One sample for Gasoline BTEX MTBE analysis.
*Method:* SW846 8020A Nov 1990 / 8015Mod

*Client Sample ID:* MW-1
*Spl#:* 149688 *Matrix:* WATER
*Sampled:* September 24, 1997 *Run#:* 8955 *Analyzed:* October 2, 1997

| ANALYTE | RESULT (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE (%) | DILUTION FACTOR |
|---|---|---|---|---|---|
| GASOLINE | 6400 | 1000 | N.D. | 93 | 20 |
| MTBE | 210 | 100 | N.D. | 110 | 20 |
| BENZENE | 520 | 10 | N.D. | 104 | 20 |
| TOLUENE | 12 | 10 | N.D. | 104 | 20 |
| ETHYL BENZENE | 310 | 10 | N.D. | 103 | 20 |
| XYLENES | 13 | 10 | N.D. | 100 | 20 |

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-837-4853

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

PM V132 O:BTEXQC022
KAYVAN 09 1

# CHROMALAB, INC.

Environmental Services (SDB)

October 2, 1997 *Submission #:* 9709433

AQUA SCIENCE ENGINEERS INC

*Atten:* CHARLIE ROUS

*Project:* ROMAK IRON WORKS *Project#:* 2659
*Received:* September 25, 1997

*re:* 1 sample for TPH - Diesel analysis.
*Method:* *EPA 8015M*

*Matrix:* WATER *Extracted:* October 1, 1997
*Sampled:* September 24, 1997 *Run#:* 8926 *Analyzed:* October 2, 1997

| Spl# | CLIENT SPL ID | DIESEL (ug/L) | REPORTING LIMIT (ug/L) | BLANK RESULT (ug/L) | BLANK SPIKE (%) | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| *149688* | MW-1 | 2600 | 51 | N.D. | 68.0 | 1 |

Note: *Hydrocarbon reported does not match the pattern of our Diesel standard. Estimated concentration due to overlapping fuel patterns.*

Bruce Havlik
Chemist

Alex Tam
Semivolatiles Supervisor

510-837-4853 PM 10/02

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

# CHROMALAB, INC.

Environmental Services (SDB)

September 30, 1997 *Submission #:* 9709433

AQUA SCIENCE ENGINEERS INC

*Atten:* CHARLIE ROUS

*Project:* ROMAK IRON WORKS *Project#:* 2659
*Received:* September 25, 1997

*re:* 1 sample for Oil and Grease analysis.
*Method:* *5520 B&F*

*Matrix:* WATER *Extracted:* September 30, 1997
*Sampled:* September 24, 1997 *Run#:* 8905 *Analyzed:* September 30, 1997

| Spl# | CLIENT SPL ID | OIL & GREASE (mg/L) | REPORTING LIMIT (mg/L) | BLANK RESULT (mg/L) | BLANK SPIKE (%) | DILUTION FACTOR |
|---|---|---|---|---|---|---|
| *149688* | MW-1 | N.D. | 1.0 | N.D. | 102 | 1 |

Carolyn House
Extractions Supervisor

Michael Verona
Operations Manager



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

7433/149688

35756

Aqua Science Engineers, Inc.
2411 Old Crow Canyon Road, #4,
San Ramon, CA 94583
(510) 820-9391 - FAX (510) 837-4853

# Chain of Custody

DATE 9/25/97 PAGE 1 OF 1

SAMPLERS (SIGNATURE) (PHONE NO.) 8209391

PROJECT NAME Romak Iron Works NO. 2659

ADDRESS 3250 Hollis St. Oakland 94662

SUBM #: 9709433 REP: PM
CLIENT: ASE
DUE: 10/02/97
REF #:35756

## ANALYSIS REQUEST

*SPECIAL INSTRUCTIONS:*

| SAMPLE ID. | DATE | TIME | MATRIX | NO. OF SAMPLES | TPH- GASOLINE (EPA 5030/8015) | TPH- GASOLINE/BTEX/MTBE (EPA 5030/8015-8020) | TPH- DIESEL (EPA 3510/8015) | PURGABLE AROMATICS (EPA 602/8020) | PURGABLE HALOCARBONS (EPA 601/8010) | VOLATILE ORGANICS (EPA 624/8240) | BASE/NUETRALS, ACIDS (EPA 625/8270) | OIL & GREASE (EPA 5520 E&F or (B&F)) | LUFT METALS (5) (EPA 6010+7000) | TITLE 22 (CAM 17) (EPA 6010+7000) | TCLP (EPA 1311/1310) | STLC- CF (EPA 131 | REACTIVI | CORROSIV | IGNITABI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 9/24 | 9:30 | H2O | 3 | | X | | | | | | | | | | | | | |
| MW-1 | 9/24 | 9:30 | H2O | 3 | | | X | | | | | X | | | | | | | |

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY LABORATORY: | COMMENTS: |
|---|---|---|---|---|
| 17:00 | | Musa Ariki | 1750 | STAT |
| (signature) (time) | (signature) (time) | (signature) (time) | (signature) (time) | 5 DAYS |
| Charlie Rous 9/25/97 | 1700 | 1750 | Michel Jaramillo 9/25/97 | |
| (printed name) (date) | (printed name) (date) | (printed name) (date) | (printed name) (date) | |
| Company- ASE | Company- 9.25.97 Chromatology | Company- 9.25.97 | Company- | |

CHROMALAB, INC.

Environmental Service (SDB)

# Sample Receipt Checklist

Client Name: AQUA SCIENCE ENGINEERS INC  Date/Time Received: 09/25/97 | 1702

Reference/Submis: 35756 | 9709433  Received by: MA

Checklist completed by: Chris Rowley 9/29/97 Reviewed by: MN 9/29/97

Signature | Date | Initials | Date

Matrix: H2O  Carrier name: Client - (C/L)

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ✓ | No ___ | Not Present ___ |
| Custody seals intact on shipping container/cooler? | Yes ___ | No ___ | Not Present ✓ |
| Custody seals intact on sample bottles? | Yes ___ | No ___ | Not Present ✓ |
| Chain of custody present? | Yes ✓ | No ___ | |
| Chain of custody signed when relinquished and received? | Yes ✓ | No ___ | |
| Chain of custody agrees with sample labels? | Yes ✓ | No ___ | |
| Samples in proper container/bottle? | Yes ✓ | No ___ | |
| Sample containers intact? | Yes ✓ | No ___ | |
| Sufficient sample volume for indicated test? | Yes ✓ | No ___ | |
| All samples received within holding time? | Yes ✓ | No ___ | |
| Container/Temp Blank temperature in compliance? | Temp: 4.0 °C Yes ✓ | No ___ | |
| Water - VOA vials have zero headspace? | No VOA vials submitted ___ | Yes ✓ | No ___ |
| Water - pH acceptable upon receipt? N/A | Adjusted? ___ | Checked by CR (chemist for VOAs) | |

**Any No and/or NA (not applicable) response must be detailed in the comments section below.**

==========

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action: _____