aqua science engineers inc.

September 30, 2000

REPORT
for
SOIL AND GROUNDWATER ASSESSMENT
at the
Romak Iron Works
3250 Hollis Street
Oakland, California

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
208 West El Pintado
Danville, CA 94526
(925) 820-9391

1.0 INTRODUCTION

Site Location (Site), See Figure 1
3250 Hollis Street
Oakland, CA

Responsible Party
Mr. Kevin Romak
3250 Hollis Street
Oakland, CA 94662-0588

Environmental Consulting Firm
Aqua Science Engineers, Inc. (ASE)
208 West El Pintado
Danville, CA 94526
Contact: Robert Kitay, Senior Geologist
(925) 820-9391

Agency Review
Ms. Susan Hugo
Alameda County Health Care Services Agency (ACHCSA)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Mr. Chuck Headlee
California Regional Water Quality Control Board (RWQCB)
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

This submittal presents Aqua Science Engineers, Inc. (ASE)'s results for a soil and groundwater assessment at the Romak Iron Works located at 3250 Hollis Street in Oakland, California *(Figure 1)*. The proposed site assessment activities were initiated by Mr. Kevin Romak, property owner to perform the tasks required to determine whether the case may be closed. The scope of work in the workplan was approved by Ms. Susan Hugo of the Alameda County Health Care Services Agency (ACHCSA) in a letter dated August 4, 2000.

2.0 BACKGROUND INFORMATION

On January 15, 1992, two underground gasoline storage tanks (USTs) were removed from the site. ASE collected one soil sample from beneath each former tank location. Total petroleum hydrocarbons as gasoline (TPH-G) was detected at 180 parts per million (ppm) in one of the two samples. On January 16, 1992, approximately 20 cubic yards of soil were overexcavated and additional soil samples were collected to confirm that all hydrocarbon-bearing soil was removed. One of the confirmation samples still contained 11 ppm TPH-G. Since hydrocarbons were still detected in the soil, the ACHCSA requested in a letter dated April 29, 1993 that a soil and groundwater investigation be preformed at the site. Although the April 29, 1993 letter from ACHCSA requests that three monitoring wells be installed at the site, Ms. Susan Hugo of ACHCSA, in a conversation with David Allen of ASE, stated that it would be acceptable to install only one groundwater monitoring well at the site if a reliable gradient could be established in the site vicinity.

ASE researched the groundwater flow direction in the site vicinity by reviewing the ACHCSA and San Francisco Bay Regional Water Quality Control Board files for the Guiton Charter Bus Company at the opposite corner of the 34th Street and Hollis Street intersection at 3421 Hollis Street in Oakland, California. ASE also contacted Epigene International and Hageman-Aguiar, Inc. (Guiton's former environmental consultants) for information in their files concerning the groundwater flow direction beneath their site. ASE also measured depths to groundwater in the Guiton wells on June 25, 1993. Groundwater appeared to flow to the southwest beneath the Guiton site.

In July 1993, ASE installed groundwater monitoring well MW-1 at the site. No hydrocarbons were detected in the soil sample collected from the boring. Since the well installation, groundwater samples have been collected from the site well on a quarterly basis up until September 1998 and on a semi-annual basis since September 1998. During this time there has been a steady decrease in hydrocarbon concentrations in groundwater samples collected from this well. TPH-G and benzene concentrations have dropped from as high as 24,000 parts per billion (ppb) and 6,200 ppb, respectively, in 1994 to as low as 2,300 ppb and 330 ppb, respectively during the past year. See Table One for tabulated groundwater monitoring results.

3.0 PROPOSED SCOPE OF WORK (SOW)

The scope of work in this workplan was approved by the ACHCSA in a letter dated August 4, 2000. For the case to be closed, the following three requirements must be met:

I) The horizontal extent of contamination must be defined. This can be accomplished by collecting soil and groundwater samples from temporary borings. At least six borings will be required.

II) The bottom of the utility lines in Hollis Street must be shown to be above the shallowest water table beneath the site. Otherwise, additional borings will be required along the utility trenches.

III) A human health risk assessment will need to be performed showing no unacceptable threat to human health.

To complete the requirements outlined above, ASE proposes the following scope of work:

1) Prepare this workplan and health and safety plan for approval by the ACHCSA.

2) Contract with an underground utility locating service to locate as precisely as possible the underground utility line locations in the site vicinity. Underground Service Alert will also be contacted.

3) Visit the various utility company offices and review their utility line maps for the site vicinity.

4) Obtain an excavation permit from the City of Oakland to drill in the street.

5) Obtain a drilling permit from the Alameda County Public Works Agency (ACPWA).

6) Drill six soil borings at the site in an attempt to define the horizontal extent of contamination, and collect soil and groundwater samples from the borings for analysis.

7) Analyze one soil and one groundwater sample from each boring at a CAL-EPA certified analytical laboratory for total petroleum

hydrocarbons as gasoline (TPH-G) by modified EPA Method 5030/8015, total petroleum hydrocarbons as diesel (TPH-D) by modified EPA Method 3510/8015, and benzene, toluene, ethylbenzene and total xylenes (collectively known as BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8020.

8) Backfill the borings with neat cement.

9) Prepare a report outlining the methods and findings of this assessment.

10) ASE will prepare a human health risk assessment for the site using the Risk-Based Corrective Action (RBCA) model.

Details of the assessment are presented below.

4.0 UNDERGROUND UTILITY LOCATING

On July 25, 2000, Subtronics Corporation of Concord, California accurately located the public utilities around the proposed drilling locations *(Figure 2)*. An eight (8)-inch sewer line runs down the center of Hollis Street at a depth of 4 to 5-feet bgs. Groundwater at the site has ranged between 9 and 10-feet bgs. All utility lines located were found to be above the water table.

5.0 DRILL SOIL BORINGS AND COLLECT SAMPLES

Prior to drilling, ASE obtained a drilling permit from the Alameda County Public Works Agency (ACPWA) and an excavation permit from the City of Oakland. Copies of the permits are located in *Appendix A*.

On August 17, 2000, Vironex, Inc. of Hayward, California drilled soil borings BH-A through BH-F at the site using a Geoprobe hydraulic sampling rig *(Figure 2)*. The drilling was directed by ASE associate geologist Ian Reed.

Undisturbed soil samples were collected continuously as drilling progressed for lithologic and hydrogeologic description and for possible analysis. The samples were collected by driving a sampler lined with acetate tubes using hydraulic direct push methods. Selective soil samples were immediately trimmed, sealed with Teflon tape, plastic end caps and tape, labeled, sealed in plastic bags and stored on ice for transport to Kiff Analytical, LLC of Davis, California under chain of custody. Soil from the

remaining tubes was described by the site geologist using the Unified Soil Classification System and was screened for volatile compounds using an Organic Vapor Meter (OVM). The soil was screened by emptying soil from one of the sample tubes into a plastic bag. The bag was then sealed and placed in the sun for approximately 10 minutes. After the volatile compounds were allowed to volatilize, the OVM measured the vapor in the bag through a small hole punched in the bag. OVM readings are used as a screening tool only, since the procedures are not as rigorous as those used in the laboratory. OVM readings can be found on the boring logs located in *Appendix B.*

Groundwater samples were removed from the borings with a bailer. The groundwater samples were contained in 40-ml volatile organic analysis (VOA) vials (pre-preserved with hydrochloric acid) and sealed without headspace. The samples to be analyzed for TPH-D and TPH-MO were contained in 1-liter amber glass bottles. All samples were then labeled and stored on ice for transport to Chromalab, Inc. under chain of custody.

Upon completion of the soil and groundwater sampling, the borings were backfilled with neat cement to the ground surface.

Drilling equipment was cleaned with a TSP solution between sampling intervals and between borings to prevent potential cross-contamination.

Sediments encountered during drilling generally consisted of silts and clays beneath the surface to the depth explored of 28-feet bgs. Groundwater was encountered between approximately 12-feet bgs and 17-feet bgs. Boring logs are presented as *Appendix B.*

6.0 ANALYTICAL RESULTS FOR SOIL

Soil samples collected from 15.5-feet bgs in boring BH-A, 7.5-feet bgs in boring BH-B, 18.0-feet bgs in borings BH-C and BH-D, 19.0-feet bgs in boring BH-E, and 11.0-feet bgs in boring BH-F were analyzed by Chromalab, Inc. for TPH-G by modified EPA Method 5030/8015, TPH-D and TPH-MO by modified EPA Method 3510/8015, and BTEX and MTBE by EPA Method 8020. These samples represent either the capillary zone or the unsaturated soil sample that appeared the most contaminated based on odor, staining, and/or OVM readings. The analytical results are tabulated in *Table Two* and the certified analytical report and chain of custody forms are included in *Appendix C.*

There were no hydrocarbons or oxygenates detected in soil samples analyzed from all six borings.

7.0 GROUNDWATER MONITORING WELL SAMPLING

On August 17, 2000, 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. A sheen was present on the groundwater surface this quarter. 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, pre-preserved with hydrochloric acid, and two (2) 1-liter amber glass bottles. The samples were labeled, placed in protective foam sleeves, and placed into a cooler with wet ice for transport to Chromalab, Inc. of Pleasanton, California under appropriate chain of custody documentation.

Well sampling purge water was contained in steel 55-gallon drums and removed from the site for disposal. The well sampling log is included as *Appendix E.*

8.0 ANALYTICAL RESULTS FOR GROUNDWATER

The groundwater samples were analyzed by Chromalab, Inc. for TPH-G by modified EPA Method 5030/8015, TPH-D and TPH-MO by modified EPA Method 3510/8015, and BTEX and MTBE by EPA Method 8020. The analytical results are tabulated in Tables One and Three, and the certified analytical report and chain of custody forms are included in *Appendix D.*

The groundwater samples collected from boring BH-C contained 150 parts per billion (ppb) TPH-D and 0.8 ppb total xylenes. The groundwater samples collected from monitoring well MW-F contained 0.81 ppb total xylenes. There were no hydrocarbons detected in groundwater samples collected from the remaining borings.

The groundwater samples collected from the site monitoring well contained 840 ppb TPH-G, 1,100 ppb TPH-D, 700 ppb TPH-MO, 55 ppb benzene. 0.74 ppb toluene, 7.5 ppb ethyl benzene, and 23 ppb MTBE.

9.0 CONCLUSIONS AND RECOMMENDATION

Since elevated hydrocarbon concentrations have only been detected in the immediate area of the former USTs, ASE recommends that this case be reviewed for closure following the Risk-Based Corrective Action (RBCA) model which will be prepared by ASE within the next quarter. ASE recommends that a vapor intrusion from groundwater to on-site industrial and residential buildings be the only scenario considered since there is a significant decreasing trend in hydrocarbon concentrations and all of the off-site downgradient borings did not contain detectable hydrocarbon concentrations. In addition, ASE recommends that an average of hydrocarbon concentrations detected in monitoring well MW-1 during the last year be used as the groundwater concentration beneath the site in the RBCA model.

10.0 REPORT LIMITATIONS

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

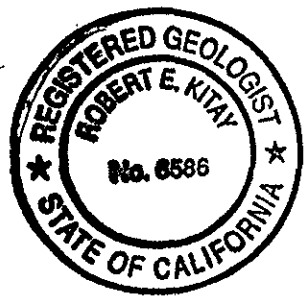
This report does not fully characterize the site for contamination resulting from unknown sources or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory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

Aqua Science Engineers appreciates the opportunity provide environmental consulting services for this project. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Ian T. Reed
Associate Geologist



Robert E. Kitay, R.G., R.E.A.
Senior Geologist

Attachments: Tables One through Three
Figures 1 and 2
Appendices A through E

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

TABLES

TABLE ~~ONE~~ FIVE

Certified Analytical Results of **GROUNDWATER** Samples
Monitoring Well MW-1
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	---
sheen 9.65'	11-18-93	10,270	---	3,169	38.3	661.2	659.4	---
sheen 11.04	02-09-94	17,000	---	6,200	64	770	420	---
sheen 12.92	05-25-94	24,000	---	6,200	27	1,100	210	---
sheen 13.44	08-18-94	22,000	---	5,000	10	740	150	---
sheen 12.54	11-14-94	20,000	4,200	4,200	25	860	450	---
sheen 9.50	02-03-95	20,000	4,600[1]	3,400	11	810	100	---
sheen 11.63	05-02-95	21,000	3,400	3,100	21	910	130	---
sheen 7.65	08-08-95	17,000	1,800	2,800	11	680	63	---
sheen 9.87	11-13-95	17,000	<1,000	2,300	8	550	69	---
sheen 6.81	02-16-96	8,900	7,600	3,100	21	760	474	< 40
sheen 5.13	05-17-96	9,900	1,400	2,100	6	560	23	120
	08-01-96	11,000	5,100[2]	1,600	14	580	66	< 50
sheen 10.06	11-12-96	13,000	6,000[2]	910	27	440	440	85
sheen 5.68	02-06-97	16,000	7,000[1]	1,200	170	660	410	< 500
sheen 6.64	05-21-97	8,600	2,900[1]	720	< 10	460	41	170
sheen 8.61	09-24-97	6,400	2,600	520	12	310	13	210
sheen 7.4	03-04-98	6,500	3,300[2]	650	2.3	290	35	98
7.65'	09-18-98	5,400	2,000[2]	980	11	150	24	< 50
sheen 7.21	03-10-99	6,600	2,500[2]	470	85	130	20	< 50
sheen 9.28	09-09-99	2,300	2,400[2]	330	11	48	19	61
	03-02-00	6,700[2]	6702	440	< 2.5	65	< 2.5	77
	08-17-00*	**840[2]**	**1,100[2]**	**55**	**0.74**	**7.5**	**< 0.5**	**23**
DHS MCL	NE	NE	1.0	150	700	1750	13	

Notes:
--- = Not analyzed
NE = Not established
DHS= California Department of Health Services
MCL = maximum contaminant level for drinking water
1 = motor oil detected
2 = Fuel pattern does not match hydrocarbon standard
* = Motor Oil detected at 700 parts per billion

TABLE TWO

Summary of Chemical Analysis of SOIL Samples

Romak Iron Works - Collected on August 17, 2000

Petroleum Hydrocarbons

All results are in parts per million

Boring - Depth	TPH Gasoline	TPH Diesel	TPH Motor Oil	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
BH-A-15.5'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-B-7.5'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-C-18.0'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-D-18.0'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-E-19.0'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-F-11.5'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

Notes:

MTBE = Methyl-t-butyl ether

PRG = United States Environmental Protection Agency Region IX Preliminary Remediation Goal for Residential Soil.

NE = PRG has not been established.

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.

Detectable concentrations are in bold.

TABLE THREE

Summary of Chemical Analysis of GROUNDWATER Samples

Romak Iron Works - Collected on August 17, 2000

Petroleum Hydrocarbons

All results are in parts per billion

Boring	TPH Gasoline	TPH Diesel	TPH Motor Oil	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
BH-A	< 50	< 71**	< 710**	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
BH-B	< 50	< 83	< 830**	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
BH-C	< 50	**150***	< 770**	< 0.5	< 0.5	< 0.5	**0.8**	< 5.0
BH-D	< 50	< 100**	< 1,000**	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
BH-E	< 50	< 61**	< 610**	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
BH-F	< 50	< 59**	< 590**	< 0.5	< 0.5	< 0.5	**0.81**	< 5.0
DHS MCL	NE	NE	NE	1	150	700	1,750	13

Notes:

MTBE = Methyl-t-butyl ether

DHS MCL is the California Department of Health Services maximum contaminant level for drinking water.

NE = DHS MCLs are not established.

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.

Detectable concentrations are in bold.

* Hydrocarbon reported does not match the laboratory diesel standard.

** Laboratory detection limits raised due to limited samples size.

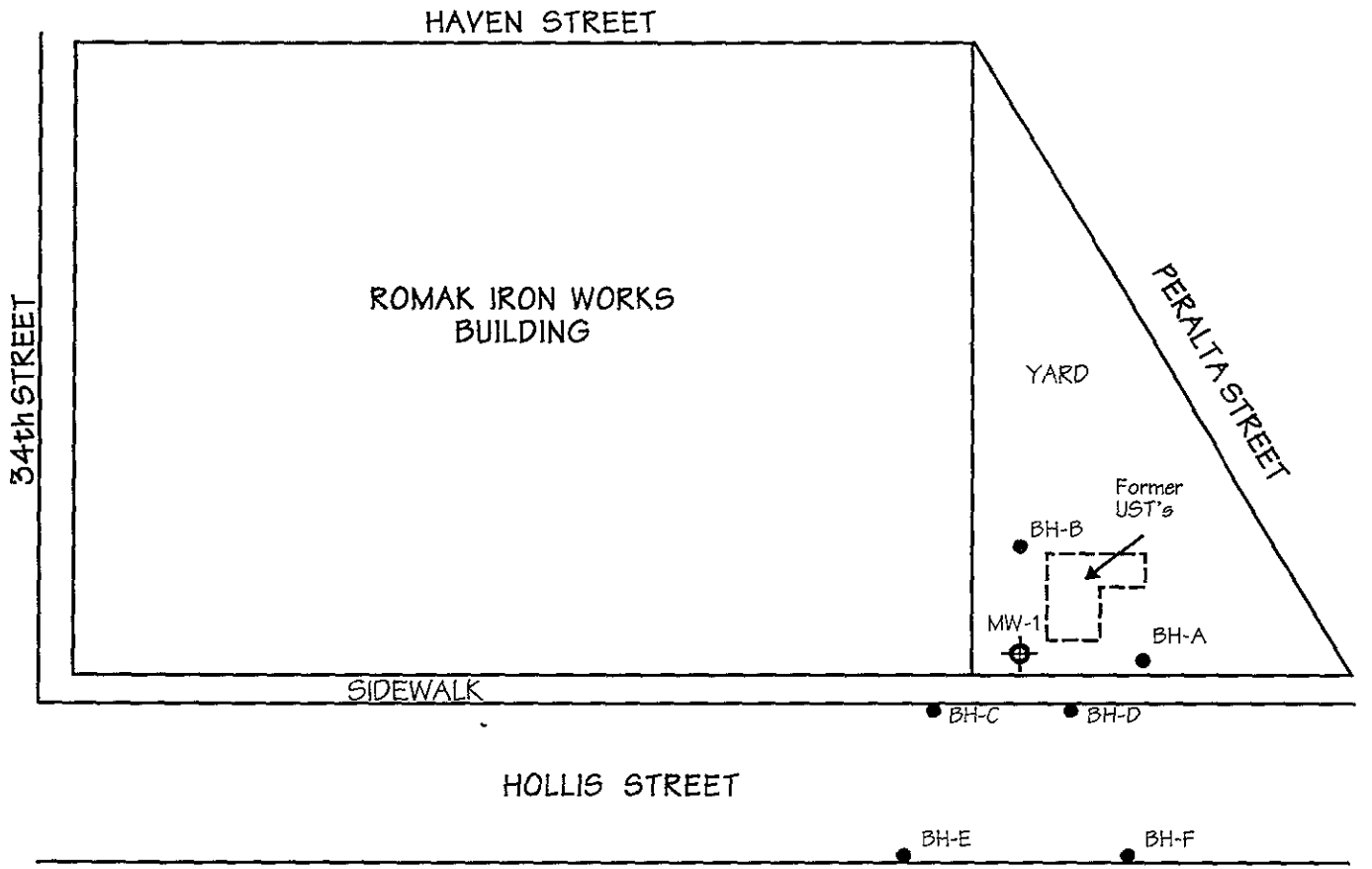
FIGURES

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.



LEGEND

BH-A — Geoprobe Location

MW-1 — Monitoring Well

NORTH

SCALE
1" = 50'

MONTORING WELL AND BORING LOCATION

Romak Iron Works
3250 Hollis Street
Oakland, California

AQUA SCIENCE ENGINEERS, INC. | FIGURE 2

APPENDIX A

Permits

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD, CA 94544-1395
PHONE (510) 670-5554 (MARCUS MAGALANES) FAX (510) 782-1939
(510) 670-5583 (FRANK CODD)

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 3250 Hollis Street
Oakland, CA

California Coordinates Source ____ ft. Accuracy ± ____ ft.
CCN ____ ft. CCE ____ ft.
APN ____

CLIENT
Name Kevin Romak
Address 3250 Hollis ST. Phone ____
City Oakland CA Zip 94608-0558

APPLICANT
Name Aqua Science Engineers Inc. Fax (925) 837-4853
Address 208 W El Pintado Phone (925) 820-9391
City Danville Zip 94526

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☒
Monitoring	☐	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other ____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☐
Cable	☐	Other	☒ Geoprobe		

DRILLER'S LICENSE NO. C-57 705927
Vironex Inc exp. 5-31-01

WELL PROJECTS
Drill Hole Diameter ____ in. Maximum
Casing Diameter ____ in. Depth ____ ft.
Surface Seal Depth ____ ft. Number ____

GEOTECHNICAL PROJECTS
Number of Borings 6 Maximum
Hole Diameter 2 in. Depth 12 ft.

ESTIMATED STARTING DATE 8/17/00
ESTIMATED COMPLETION DATE 8/17/00

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

APPLICANT'S SIGNATURE Kat Reed DATE 8/15/00

FOR OFFICE USE

PERMIT NUMBER WM-498
WELL NUMBER ____
APN ____

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
(1) A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2) Submit to ACPWA 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 SUPPLY WELLS
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.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. 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.

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

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED ____ DATE 8-15-00

City of Oakland
Office of Planning and Building

EXCAVATION PERMIT

CIVIL ENGINEERING

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

PERMIT NUMBER X0001309		SITE ADDRESS/LOCATION 3250 Hollis St
APPROX. START DATE	APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number)
CONTRACTOR'S LICENSE # AND CLASS 487000		CITY BUSINESS TAX #

ATTENTION:

1) State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: ________

2) **48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.**

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. ________, B&PC for this reason ________.

WORKER'S COMPENSATION

☐ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # ________ Company Name ________

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

[signature] Aqua Science Engineering Inc — Date: 8/16/00

Signature of Permittee ☒ Agent for ☐ Contractor ☐ Owner

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☐ NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) ☐ YES ☐ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☐ NO
ISSUED BY [signature]		DATE ISSUED 8-16-00	

APPENDIX B

Boring Logs

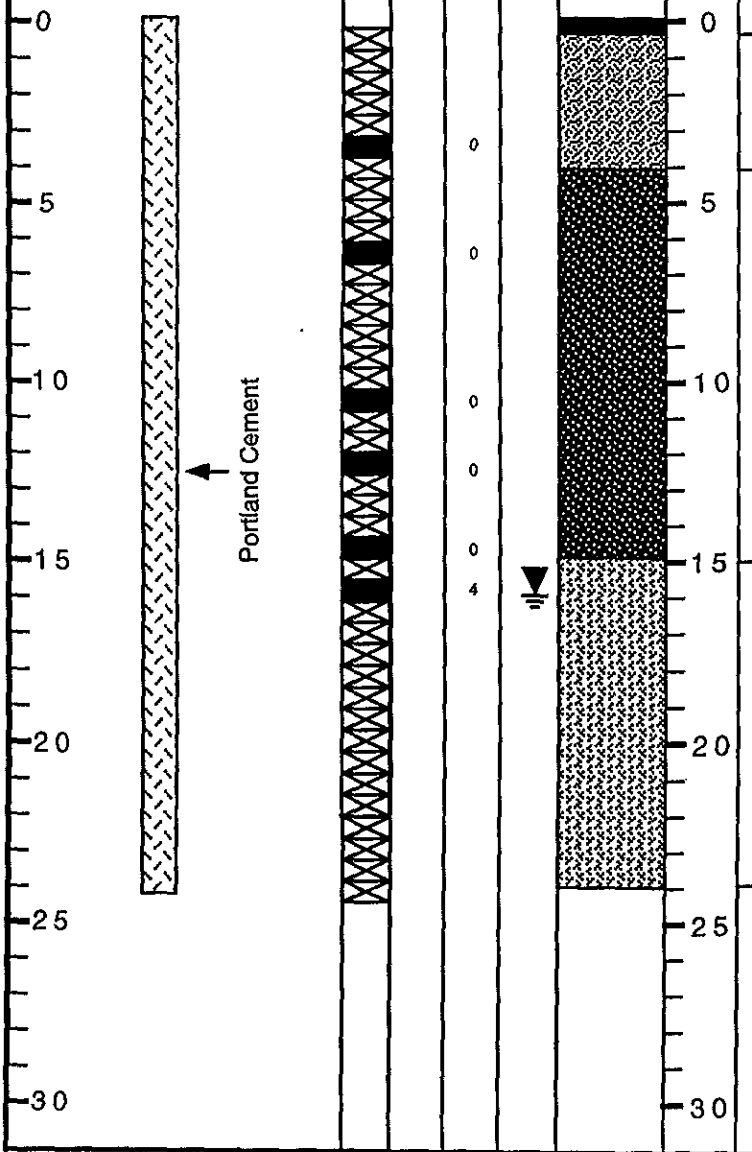
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

Boring: BH-A

Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 16'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 24.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

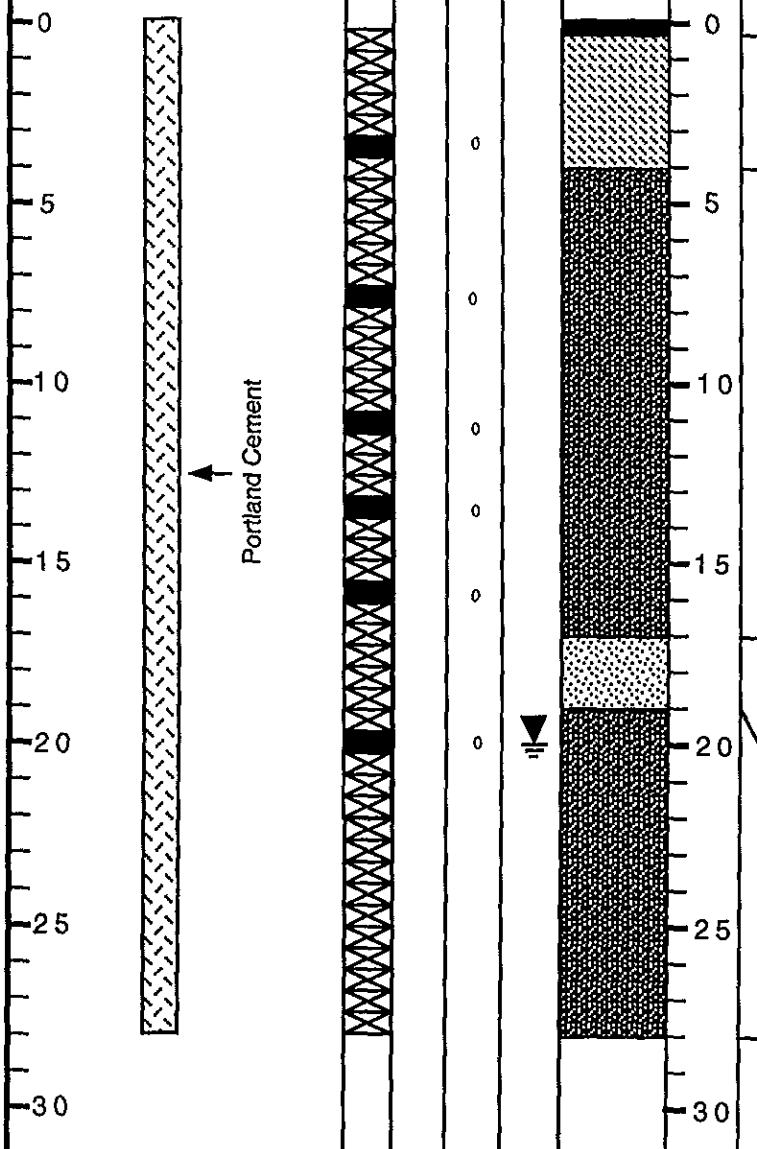


Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Asphalt
	Sandy SILT (ML); dark brown; damp; stiff; 75% silt; 25% fine to coarse sand; trace clay; very low plasticity; low estimated K; no odor
5	Silty CLAY (CL); light brown; damp; very stiff; 60% clay; 20% silt; 20% fine to coarse sand; low plasticity; very low estimated K; no odor
10	
15	Sandy CLAY (CL); brown; very moist; stiff; 50% clay; 30% fine to medium sand; 20% silt; trace gravel; medium plasticity; very low estimated K; no odor
20	
25	End of Boring at 24.0'
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-B
Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 20.0'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 28.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

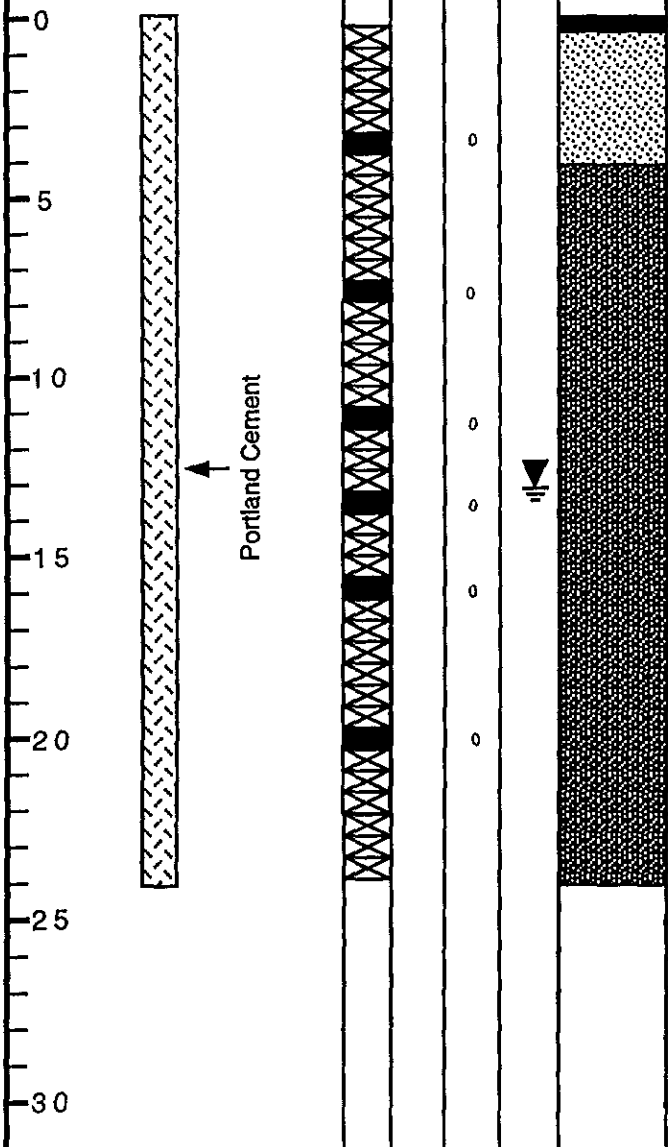


Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
	Clayey SILT (ML); dark brown; damp; very stiff; 60% silt; 40% clay; trace sand; low plasticity; very low estimated K; no odor
5	Silty CLAY (CL); light brown with speckled gray; damp; very stiff; 60% clay; 30% silt; 10% fine sand; low plasticity; very low estimated K; no odor
	very slight hydrocrabon odor at 7.5'
10	speckled green, slight hydrocarbon odor
	trace gravel to 0.5" diameter
15	
20	Silty SAND (SM): brown; wet; medium stiff; 60% fine to medium sand; 30% silt; 10% clay; low plasticity; medium estimated K; no odor
	Silty CLAY (CL); light brown with speckled gray; damp; very stiff; 60% clay; 30% silt; 10% fine sand; low plasticity; very low estimated K; no odor
	wet at 20'
25	
	End of Boring at 28.0'
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-C
Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 13.0'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 24.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



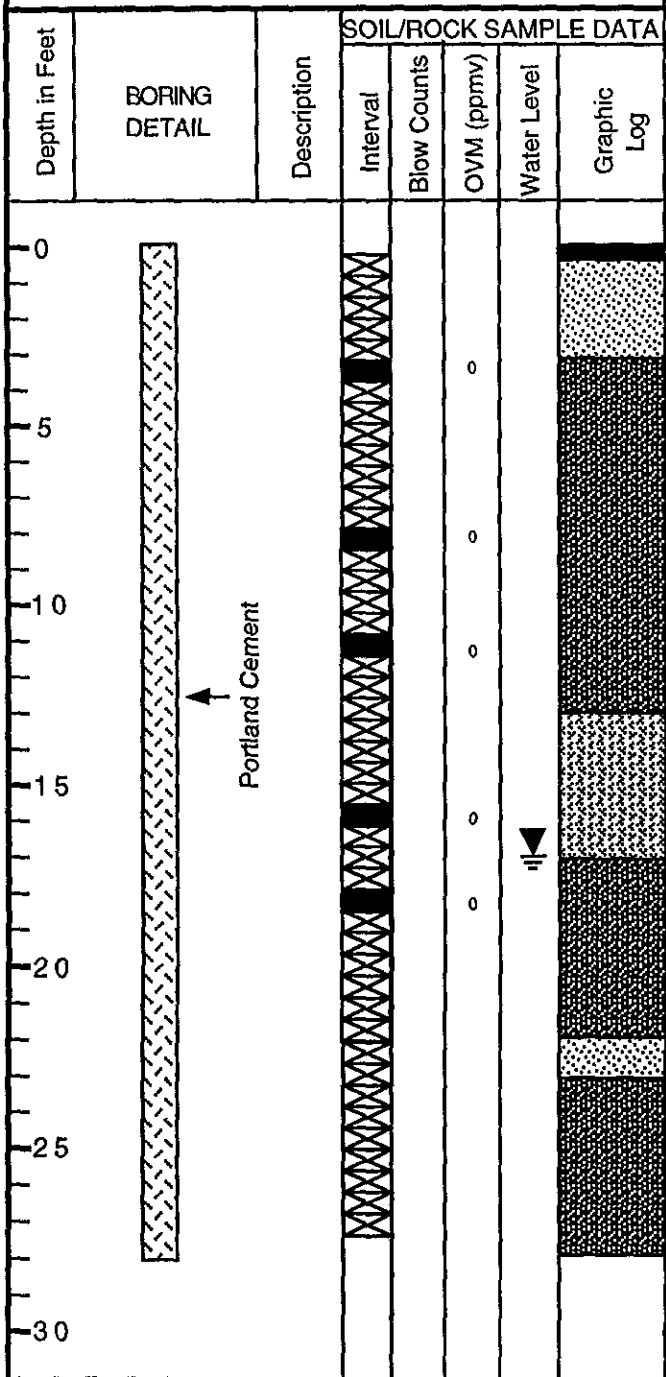
Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
	Sandy SILT (ML); brown to light brown; damp; very stiff; 60% silt; 20% fine to coarse sand; 20% clay; low plasticity; very low estiimated K; no odor
5	Silty CLAY (CL); brown with black speckles; damp; very stiff; 60% clay; 30% silt; 10% fine to coarse sand; trace gravel to 0.5" diameter; low plasticity; very low estimated K; no odor
10	brown to light brown; 70% clay; 20% silt; 10% fine sand
	wet at 13' gray to light brown; 70% clay; 30% silt; damp to moist; no odor
15	
20	
25	End of Boring at 24.0'
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-D
Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 17.0'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 28.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

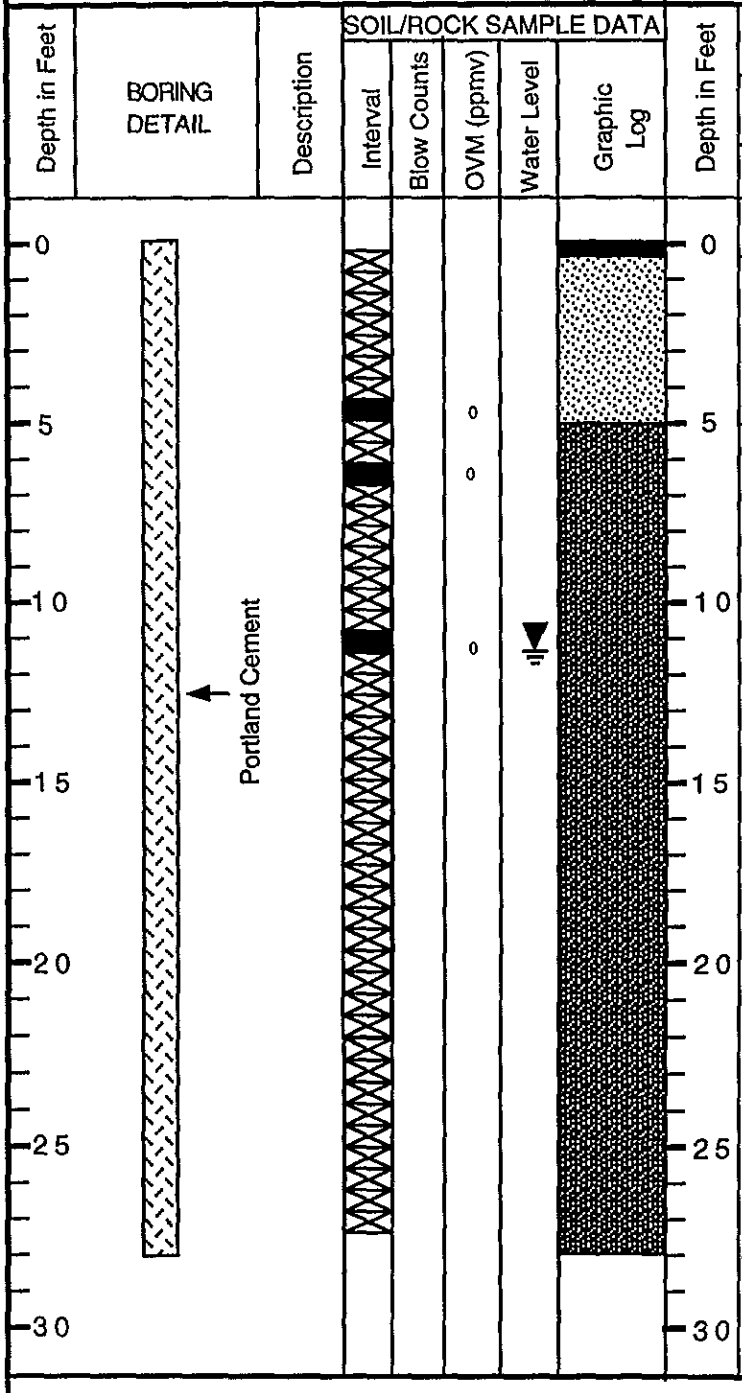


Depth in Feet	DESCRIPTION OF LITHOLOGY *standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.*
0	Concrete
	Sandy SILT (ML); dark brown; damp; very stiff; 70% silt; 25% fine to coarse sand; 5% clay; low plasticity; very low estimated K; no odor
5	Silty CLAY (CL); light brown with black speckles; damp; stiff; 60% clay; 25% silt; 15% fine to coarse sand; low plasticity; very low estimated K; *no odor*
10	60% clay; 40% silt; trace sand; no odor
15	Sandy CLAY (CL); brown to gray; damp; very stiff; 60% clay; 30% fine to coarse sand; 10% silt; very low plasticity; very low estimated K; no odor
20	Silty CLAY (CL); light brown with black speckles; damp; stiff; 60% clay; 25% silt; 15% fine to coarse sand; low plasticity; very low estimated K; *no odor* fine sand layer at 22' - 23'
25	End of Boring at 28.0'
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-E
Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 12.5'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 24.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0 — Concrete

Sandy SILT (ML); dark brown; damp; very stiff; 60% silt; 30% fine to coarse sand; 10% clay; very low plasticity; very low estimated K; no odor

5 — Silty CLAY (CL); light brown; damp; very stiff; 60% clay; 30% silt; 10% fine to coarse sand; very low plasticity; very low estimated K; no odor

10 — wet at 12.5'

15

20

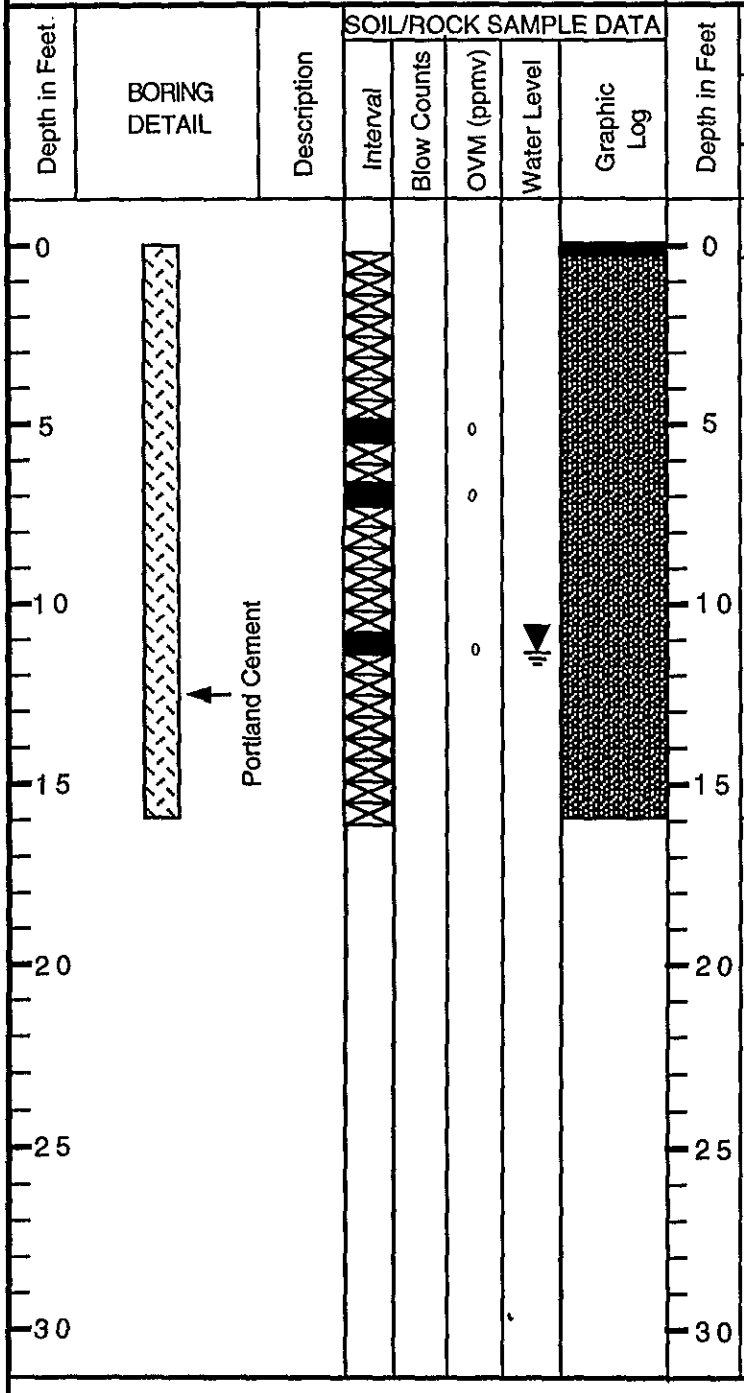
25

30 — End of Boring at 28.0'

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-F
Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 12.0'	Total Depth of Well Completed: NA
	Well Screen Type and Diameter: NA
Static Depth of Water in Well: NA	Well Screen Slot Size: NA
Total Depth of Boring: 16.0'	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
	Silty CLAY (CL); light brown; damp; very stiff; 60% clay; 30% silt; 10% fine to coarse sand; very low plasticity; very low estimated K; no odor
10	wet at 12'
15	End of Boring at 16.0'

AQUA SCIENCE ENGINEERS, INC.

APPENDIX C

Certified Analytical Report
and
Chain of Custody Documentation
Soil Samples

Aqua Science Engineers, Inc.
208 West El Pintado Road
Danville, CA 94526

Attn.: Mr. Ian T. Reed

Project: Romak Iron Works

Dear Mr. Reed,

Attached is our report for your samples received on Friday August 18, 2000
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after October 2, 2000 unless you have requested otherwise. We appreciate the opportunity to be of service to you.
If you have any questions, please call me at (925) 484-1919. You can also contact me via email.
My email address is: vvancil@chromalab.com

Sincerely,

Vincent Vancil

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

Gas/BTEX and MTBE

Aqua Science Engineers, Inc.

208 West El Pintado Road
Danville, CA 94526

Attn: Ian T. Reed

Phone: (925) 820-9391 Fax: (925) 837-4853

Project #:

Project: Romak Iron Works

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
BH-A-15.5`	Soil	08/17/2000 08:45	1
BH-B-7.5`	Soil	08/17/2000 09:40	2
BH-C-18`	Soil	08/17/2000 11:45	3
BH-D-18`	Soil	08/17/2000 15:30	4
BH-E-19`	Soil	08/17/2000 15:00	5
BH-F-11.5`	Soil	08/17/2000 16:00	6

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-A-15.5`**	Lab Sample ID:	**2000-08-0399-001**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 17:33
Sampled:	08/17/2000 08:45	QC-Batch:	2000/08/24-01.01
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	08/24/2000 17:33	
Benzene	ND	0.0050	mg/Kg	1.00	08/24/2000 17:33	
Toluene	ND	0.0050	mg/Kg	1.00	08/24/2000 17:33	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	08/24/2000 17:33	
Xylene(s)	ND	0.0050	mg/Kg	1.00	08/24/2000 17:33	
MTBE	ND	0.0050	mg/Kg	1.00	08/24/2000 17:33	
Surrogate(s)						
Trifluorotoluene	73.5	53-125	%	1.00	08/24/2000 17:33	
4-Bromofluorobenzene-FID	64.9	58-124	%	1.00	08/24/2000 17:33	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-B-7.5`**	Lab Sample ID:	**2000-08-0399-002**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 18:09
Sampled:	08/17/2000 09:40	QC-Batch:	2000/08/24-01.01
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	08/24/2000 18:09	
Benzene	ND	0.0050	mg/Kg	1.00	08/24/2000 18:09	
Toluene	ND	0.0050	mg/Kg	1.00	08/24/2000 18:09	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	08/24/2000 18:09	
Xylene(s)	ND	0.0050	mg/Kg	1.00	08/24/2000 18:09	
MTBE	ND	0.0050	mg/Kg	1.00	08/24/2000 18:09	
Surrogate(s)						
Trifluorotoluene	76.6	53-125	%	1.00	08/24/2000 18:09	
Trifluorotoluene-FID	72.9	53-125	%	1.00	08/24/2000 18:09	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-C-18`**	Lab Sample ID:	**2000-08-0399-003**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 18:44
Sampled:	08/17/2000 11:45	QC-Batch:	2000/08/24-01.01
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	08/24/2000 18:44	
Benzene	ND	0.0050	mg/Kg	1.00	08/24/2000 18:44	
Toluene	ND	0.0050	mg/Kg	1.00	08/24/2000 18:44	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	08/24/2000 18:44	
Xylene(s)	ND	0.0050	mg/Kg	1.00	08/24/2000 18:44	
MTBE	ND	0.0050	mg/Kg	1.00	08/24/2000 18:44	
Surrogate(s)						
Trifluorotoluene	80.8	53-125	%	1.00	08/24/2000 18:44	
4-Bromofluorobenzene-FID	66.7	58-124	%	1.00	08/24/2000 18:44	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-D-18'**	Lab Sample ID:	**2000-08-0399-004**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 19:19
Sampled:	08/17/2000 15:30	QC-Batch:	2000/08/24-01.01
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	08/24/2000 19:19	
Benzene	ND	0.0050	mg/Kg	1.00	08/24/2000 19:19	
Toluene	ND	0.0050	mg/Kg	1.00	08/24/2000 19:19	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	08/24/2000 19:19	
Xylene(s)	ND	0.0050	mg/Kg	1.00	08/24/2000 19:19	
MTBE	ND	0.0050	mg/Kg	1.00	08/24/2000 19:19	
Surrogate(s)						
Trifluorotoluene	80.8	53-125	%	1.00	08/24/2000 19:19	
4-Bromofluorobenzene-FID	64.9	58-124	%	1.00	08/24/2000 19:19	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-E-19`**	Lab Sample ID:	**2000-08-0399-005**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 19:54
Sampled:	08/17/2000 15:00	QC-Batch:	2000/08/24-01.01
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	08/24/2000 19:54	
Benzene	ND	0.0050	mg/Kg	1.00	08/24/2000 19:54	
Toluene	ND	0.0050	mg/Kg	1.00	08/24/2000 19:54	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	08/24/2000 19:54	
Xylene(s)	ND	0.0050	mg/Kg	1.00	08/24/2000 19:54	
MTBE	ND	0.0050	mg/Kg	1.00	08/24/2000 19:54	
Surrogate(s)						
Trifluorotoluene	79.6	53-125	%	1.00	08/24/2000 19:54	
4-Bromofluorobenzene-FID	68.0	58-124	%	1.00	08/24/2000 19:54	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-F-11.5'**	Lab Sample ID:	**2000-08-0399-006**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/25/2000 16:41
Sampled:	08/17/2000 16:00	QC-Batch:	2000/08/25-01.01
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	08/25/2000 16:41	
Benzene	ND	0.0050	mg/Kg	1.00	08/25/2000 16:41	
Toluene	ND	0.0050	mg/Kg	1.00	08/25/2000 16:41	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	08/25/2000 16:41	
Xylene(s)	ND	0.0050	mg/Kg	1.00	08/25/2000 16:41	
MTBE	ND	0.0050	mg/Kg	1.00	08/25/2000 16:41	
Surrogate(s)						
Trifluorotoluene	67.7	53-125	%	1.00	08/25/2000 16:41	
Trifluorotoluene-FID	65.6	53-125	%	1.00	08/25/2000 16:41	

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Batch QC Report
Gas/BTEX and MTBE

Method Blank | **Soil** | **QC Batch # 2000/08/24-01.01**

MB: 2000/08/24-01.01-001 | Date Extracted: 08/24/2000 07:32

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	08/24/2000 07:32	
Benzene	ND	0.0050	mg/Kg	08/24/2000 07:32	
Toluene	ND	0.0050	mg/Kg	08/24/2000 07:32	
Ethyl benzene	ND	0.0050	mg/Kg	08/24/2000 07:32	
Xylene(s)	ND	0.0050	mg/Kg	08/24/2000 07:32	
MTBE	ND	0.0050	mg/Kg	08/24/2000 07:32	
Surrogate(s)					
Trifluorotoluene	92.8	53-125	%	08/24/2000 07:32	
4-Bromofluorobenzene-FID	80.8	58-124	%	08/24/2000 07:32	

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Batch QC Report
Gas/BTEX and MTBE

Method Blank | **Soil** | **QC Batch # 2000/08/25-01.01**

MB: 2000/08/25-01.01-001

Date Extracted: 08/25/2000 06:21

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	08/25/2000 06:21	
Benzene	ND	0.0050	mg/Kg	08/25/2000 06:21	
Toluene	ND	0.0050	mg/Kg	08/25/2000 06:21	
Ethyl benzene	ND	0.0050	mg/Kg	08/25/2000 06:21	
Xylene(s)	ND	0.0050	mg/Kg	08/25/2000 06:21	
MTBE	ND	0.0050	mg/Kg	08/25/2000 06:21	
Surrogate(s)					
Trifluorotoluene	96.4	53-125	%	08/25/2000 06:21	
4-Bromofluorobenzene-FID	85.6	58-124	%	08/25/2000 06:21	

To: **Aqua Science Engineers, Inc.**

Attn: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Batch QC Report

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2000/08/24-01.01**

LCS: 2000/08/24-01.01-002 Extracted: 08/24/2000 08:06 Analyzed 08/24/2000 08:06

LCSD: 2000/08/24-01.01-003 Extracted: 08/24/2000 08:41 Analyzed 08/24/2000 08:41

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	0 544	0.536	0.500	0.500	108.8	107.2	1.5	75-125	35		
Benzene	0.0969	0.0922	0.1000	0.1000	96.9	92.2	5.0	77-123	35		
Toluene	0.0941	0.0896	0.1000	0.1000	94.1	89.6	4.9	78-122	35		
Ethyl benzene	0.0944	0.0908	0.1000	0.1000	94.4	90.8	3.9	70-130	35		
Xylene(s)	0.277	0.267	0.300	0.300	92.3	89.0	3.6	75-125	35		
Surrogate(s)											
Trifluorotoluene	477	460	500	500	95.4	92.0		53-125			
4-Bromofluorobenzene-FI	423	405	500	500	84.6	81.0		58-124			

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

To: **Aqua Science Engineers, Inc.**

Attn: *Ian T. Reed*

Test Method: 8020
8015M

Prep Method: 5030

Batch QC Report

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2000/08/25-01.01**

LCS: 2000/08/25-01.01-002 Extracted: 08/25/2000 07:45 Analyzed 08/25/2000 07:45

LCSD: 2000/08/25-01.01-003 Extracted: 08/25/2000 08:20 Analyzed 08/25/2000 08:20

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	0.523	0.501	0.500	0.500	104.6	100.2	4.3	75-125	35		
Benzene	0.0936	0.0939	0.1000	0.1000	93.6	93.9	0.3	77-123	35		
Toluene	0.0908	0.0920	0.1000	0.1000	90.8	92.0	1.3	78-122	35		
Ethyl benzene	0.0911	0.0925	0.1000	0.1000	91.1	92.5	1.5	70-130	35		
Xylene(s)	0.269	0.273	0.300	0.300	89.7	91.0	1.4	75-125	35		
Surrogate(s)											
Trifluorotoluene	462	473	500	500	92.4	94.6		53-125			
4-Bromofluorobenzene-FI	398	380	500	500	79.6	76.0		58-124			

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

Total Extractable Petroleum Hydrocarbons (TEPH)

Aqua Science Engineers, Inc.	✉	208 West El Pintado Road Danville, CA 94526
Attn: Ian T. Reed		Phone: (925) 820-9391 Fax: (925) 837-4853
Project #:	*Project:*	Romak Iron Works

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
BH-A-15.5`	Soil	08/17/2000 08:45	1
BH-B-7.5`	Soil	08/17/2000 09:40	2
BH-C-18`	Soil	08/17/2000 11:45	3
BH-D-18`	Soil	08/17/2000 15:30	4
BH-E-19`	Soil	08/17/2000 15:00	5
BH-F-11.5`	Soil	08/17/2000 16:00	6

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015M
Prep Method: 3550/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID:	**BH-A-15.5'**	Lab Sample ID:	**2000-08-0399-001**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/21/2000 10:00
Sampled:	08/17/2000 08:45	QC-Batch:	2000/08/21-01.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	08/21/2000 21:14	
Motor Oil	ND	50	mg/Kg	1.00	08/21/2000 21:14	
Surrogate(s)						
o-Terphenyl	72.4	60-130	%	1.00	08/21/2000 21:14	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015M
Prep Method: 3550/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID:	**BH-B-7.5**	Lab Sample ID:	**2000-08-0399-002**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/21/2000 10:00
Sampled:	08/17/2000 09:40	QC-Batch:	2000/08/21-01.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	08/21/2000 21:52	
Motor Oil	ND	50	mg/Kg	1.00	08/21/2000 21:52	
Surrogate(s)						
o-Terphenyl	71.6	60-130	%	1.00	08/21/2000 21:52	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0399

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015M
Prep Method: 3550/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID:	**BH-C-18`**	Lab Sample ID:	**2000-08-0399-003**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/21/2000 10:00
Sampled:	08/17/2000 11:45	QC-Batch:	2000/08/21-01.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	08/21/2000 22:31	
Motor Oil	ND	50	mg/Kg	1.00	08/21/2000 22:31	
Surrogate(s)						
o-Terphenyl	72.7	60-130	%	1.00	08/21/2000 22:31	

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015M
Prep Method: 3550/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID:	**BH-D-18'**	Lab Sample ID:	**2000-08-0399-004**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/21/2000 10:00
Sampled:	08/17/2000 15:30	QC-Batch:	2000/08/21-01.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	08/21/2000 23:10	
Motor Oil	ND	50	mg/Kg	1.00	08/21/2000 23:10	
Surrogate(s)						
o-Terphenyl	72.8	60-130	%	1.00	08/21/2000 23:10	

To: ***Aqua Science Engineers, Inc.***
Attn.: Ian T. Reed

Test Method: 8015M
Prep Method: 3550/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID:	**BH-E-19`**	Lab Sample ID:	***2000-08-0399-005***
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/21/2000 10:00
Sampled:	08/17/2000 15:00	QC-Batch:	2000/08/21-01.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	08/21/2000 23:48	
Motor Oil	ND	50	mg/Kg	1.00	08/21/2000 23:48	
Surrogate(s)						
o-Terphenyl	70.2	60-130	%	1.00	08/21/2000 23:48	

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015M
Prep Method: 3550/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID:	**BH-F-11.5`**	Lab Sample ID:	**2000-08-0399-006**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/21/2000 10:00
Sampled:	08/17/2000 16:00	QC-Batch:	2000/08/21-01.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	08/22/2000 00:27	
Motor Oil	ND	50	mg/Kg	1.00	08/22/2000 00:27	
Surrogate(s)						
o-Terphenyl	72.0	60-130	%	1.00	08/22/2000 00:27	

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015M
Prep Method: 3550/8015M

Batch QC Report
Total Extractable Petroleum Hydrocarbons (TEPH)

Method Blank | **Soil** | **QC Batch # 2000/08/21-01.10**

MB: *2000/08/21-01.10-001* | Date Extracted: 08/21/2000 10:00

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Diesel	ND	1	mg/Kg	08/22/2000 01:44	
Motor Oil	ND	50	mg/Kg	08/22/2000 01:44	
Surrogate(s)					
o-Terphenyl	79.5	60-130	%	08/22/2000 01:44	

To: **Aqua Science Engineers, Inc.** Test Method: 8015M

Attn: Ian T. Reed Prep Method: 3550/8015M

Batch QC Report

Total Extractable Petroleum Hydrocarbons (TEPH)

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2000/08/21-01.10**

LCS: 2000/08/21-01.10-002 Extracted: 08/21/2000 10:00 Analyzed 08/22/2000 02:23

LCSD: 2000/08/21-01.10-003 Extracted: 08/21/2000 10:00 Analyzed 08/22/2000 03:01

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Diesel	30 3	30.0	41.7	41.7	72.7	71.9	1.1	60-130	25		
Surrogate(s)											
o-Terphenyl	23.1	23.2	20.0	20.0	115.5	116.0		60-130			

2000-08-0399

54025

Aqua Science Engineers, Inc.
208 W. El Pintado Road
Danville, CA 94526
(925) 820-9391
FAX (925) 837-4853

Chain of Custody

PAGE 1 OF 1

SAMPLER (SIGNATURE) Ian T. Reed (PHONE NO.) (925)820-9391

PROJECT NAME Romak Iron Works JOB NO.

ADDRESS 3250 Hollis st., Oakland CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

5-day TAT

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520) ____	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	TPH-G/BTEX/5 OXY'S (EPA 8260)	TPH-G/BTEX/7 OXY'S / HVOCS (EPA 8260)			COMPOSITE
BH-A -15.5'	8/17	0845	soil	1	X		X															X
BH-B -7.5'	8/17	0940			X		X															X
BH-C -18'	8/17	1145			X		X															X
BH-D -18'	8/17	1530			X		X															X
BH-E -19'	8/17	1500			X		X															X
BH-F -11.5'	8/17	1600	↓	↓	X		X															X

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
Ian T. Reed (signature) (time)	(signature) (time) 1031	(signature) (time) 1515	(signature) (time) 1525	
Ian T. Reed (printed name) (date)	(printed name) (date) 8/18/00	(printed name) (date) 8/18/00	(printed name) (date) 08/18/00	TURN AROUND TIME
Company- ASE	Company-	Company-	Company- Aroma Lab	STANDARD 24Hr 48Hr 72Hr
				OTHER:

APPENDIX D

Certified Analytical Report
and
Chain of Custody Documentation
Groundwater Samples

Aqua Science Engineers, Inc.
208 West El Pintado Road
Danville, CA 94526

Attn.: Mr. Ian T. Reed

Project: Romak Iron Works

Dear Mr. Reed,

Attached is our report for your samples received on Friday August 18, 2000
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after October 2, 2000 unless you have requested otherwise. We appreciate the opportunity to be of service to you.
If you have any questions, please call me at (925) 484-1919. You can also contact me via email.
My email address is: vvancil@chromalab.com

Sincerely,

Vincent Vancil

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

Gas/BTEX and MTBE

Aqua Science Engineers, Inc.

208 West El Pintado Road
Danville, CA 94526

Attn: Ian T. Reed

Phone: (925) 820-9391 Fax: (925) 837-4853

Project #:

Project: Romak Iron Works

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
BH-A	Water	08/17/2000 11:00	1
BH-B	Water	08/17/2000 10:20	2
BH-C	Water	08/17/2000 12:00	3
BH-D	Water	08/17/2000 14:15	4
BH-E	Water	08/17/2000 15:20	5
BH-F	Water	08/17/2000 16:15	6
MW-1	Water	08/17/2000 15:00	7

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-A**	Lab Sample ID:	**2000-08-0402-001**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 18:22
Sampled:	08/17/2000 11:00	QC-Batch:	2000/08/24-01.02
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	08/24/2000 18:22	
Benzene	ND	0.50	ug/L	1.00	08/24/2000 18:22	
Toluene	ND	0.50	ug/L	1.00	08/24/2000 18:22	
Ethyl benzene	ND	0.50	ug/L	1.00	08/24/2000 18:22	
Xylene(s)	ND	0.50	ug/L	1.00	08/24/2000 18:22	
MTBE	ND	5.0	ug/L	1.00	08/24/2000 18:22	
Surrogate(s)						
Trifluorotoluene	88.3	58-124	%	1.00	08/24/2000 18:22	
4-Bromofluorobenzene-FID	88.3	50-150	%	1.00	08/24/2000 18:22	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-B**	Lab Sample ID:	**2000-08-0402-002**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 18:53
Sampled:	08/17/2000 10:20	QC-Batch:	2000/08/24-01.02
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	08/24/2000 18:53	
Benzene	ND	0.50	ug/L	1.00	08/24/2000 18:53	
Toluene	ND	0.50	ug/L	1.00	08/24/2000 18:53	
Ethyl benzene	ND	0.50	ug/L	1.00	08/24/2000 18:53	
Xylene(s)	ND	0.50	ug/L	1.00	08/24/2000 18:53	
MTBE	ND	5.0	ug/L	1.00	08/24/2000 18:53	
Surrogate(s)						
Trifluorotoluene	94.0	58-124	%	1.00	08/24/2000 18:53	
4-Bromofluorobenzene-FID	88.2	50-150	%	1.00	08/24/2000 18:53	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-C**	Lab Sample ID:	**2000-08-0402-003**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 19:25
Sampled:	08/17/2000 12:00	QC-Batch:	2000/08/24-01.02
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	08/24/2000 19:25	
Benzene	ND	0.50	ug/L	1.00	08/24/2000 19:25	
Toluene	ND	0.50	ug/L	1.00	08/24/2000 19:25	
Ethyl benzene	ND	0.50	ug/L	1.00	08/24/2000 19:25	
Xylene(s)	0.80	0.50	ug/L	1.00	08/24/2000 19:25	
MTBE	ND	5.0	ug/L	1.00	08/24/2000 19:25	
Surrogate(s)						
Trifluorotoluene	98.3	58-124	%	1.00	08/24/2000 19:25	
4-Bromofluorobenzene-FID	89.1	50-150	%	1.00	08/24/2000 19:25	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-D**	Lab Sample ID:	**2000-08-0402-004**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 20:59
Sampled:	08/17/2000 14:15	QC-Batch:	2000/08/24-01.02
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	08/24/2000 20:59	
Benzene	ND	0.50	ug/L	1.00	08/24/2000 20:59	
Toluene	ND	0.50	ug/L	1.00	08/24/2000 20:59	
Ethyl benzene	ND	0.50	ug/L	1.00	08/24/2000 20:59	
Xylene(s)	ND	0.50	ug/L	1.00	08/24/2000 20:59	
MTBE	ND	5.0	ug/L	1.00	08/24/2000 20:59	
Surrogate(s)						
Trifluorotoluene	95.4	58-124	%	1.00	08/24/2000 20:59	
4-Bromofluorobenzene-FID	90.8	50-150	%	1.00	08/24/2000 20:59	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-E**	Lab Sample ID:	**2000-08-0402-005**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 21:30
Sampled:	08/17/2000 15:20	QC-Batch:	2000/08/24-01.02
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	08/24/2000 21:30	
Benzene	ND	0.50	ug/L	1.00	08/24/2000 21:30	
Toluene	ND	0.50	ug/L	1.00	08/24/2000 21:30	
Ethyl benzene	ND	0.50	ug/L	1.00	08/24/2000 21:30	
Xylene(s)	ND	0.50	ug/L	1.00	08/24/2000 21:30	
MTBE	ND	5.0	ug/L	1.00	08/24/2000 21:30	
Surrogate(s)						
Trifluorotoluene	78.9	58-124	%	1.00	08/24/2000 21:30	
4-Bromofluorobenzene-FID	81.5	50-150	%	1.00	08/24/2000 21:30	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**BH-F**	Lab Sample ID:	**2000-08-0402-006**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 22:02
Sampled:	08/17/2000 16:15	QC-Batch:	2000/08/24-01.02
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	08/24/2000 22:02	
Benzene	ND	0.50	ug/L	1.00	08/24/2000 22:02	
Toluene	ND	0.50	ug/L	1.00	08/24/2000 22:02	
Ethyl benzene	ND	0.50	ug/L	1.00	08/24/2000 22:02	
Xylene(s)	0.81	0.50	ug/L	1.00	08/24/2000 22:02	
MTBE	ND	5.0	ug/L	1.00	08/24/2000 22:02	
Surrogate(s)						
Trifluorotoluene	94.8	58-124	%	1.00	08/24/2000 22:02	
4-Bromofluorobenzene-FID	90.0	50-150	%	1.00	08/24/2000 22:02	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**MW-1**	Lab Sample ID:	**2000-08-0402-007**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/24/2000 22:33
Sampled:	08/17/2000 15:00	QC-Batch:	2000/08/24-01.02
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	840	50	ug/L	1.00	08/24/2000 22:33	g
Benzene	55	0.50	ug/L	1.00	08/24/2000 22:33	
Toluene	0.74	0.50	ug/L	1.00	08/24/2000 22:33	
Ethyl benzene	7.5	0.50	ug/L	1.00	08/24/2000 22:33	
Xylene(s)	ND	0.50	ug/L	1.00	08/24/2000 22:33	
MTBE	23	5.0	ug/L	1.00	08/24/2000 22:33	
Surrogate(s)						
Trifluorotoluene	80.0	58-124	%	1.00	08/24/2000 22:33	
4-Bromofluorobenzene-FID	85.6	50-150	%	1.00	08/24/2000 22:33	

To: **Aqua Science Engineers, Inc.**

Attn.: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Batch QC Report
Gas/BTEX and MTBE

Method Blank | **Water** | **QC Batch # 2000/08/24-01.02**

MB: 2000/08/24-01.02-001

Date Extracted: 08/24/2000 06:31

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	08/24/2000 06:31	
Benzene	ND	0.5	ug/L	08/24/2000 06:31	
Toluene	ND	0.5	ug/L	08/24/2000 06:31	
Ethyl benzene	ND	0.5	ug/L	08/24/2000 06:31	
Xylene(s)	ND	0.5	ug/L	08/24/2000 06:31	
MTBE	ND	5.0	ug/L	08/24/2000 06:31	
Surrogate(s)					
Trifluorotoluene	88.8	58-124	%	08/24/2000 06:31	
4-Bromofluorobenzene-FID	86.4	50-150	%	08/24/2000 06:31	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**

Attn: Ian T. Reed

Test Method: 8020
8015M

Prep Method: 5030

Batch QC Report

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2000/08/24-01.02**

LCS: 2000/08/24-01.02-002 Extracted: 08/24/2000 07:29 Analyzed 08/24/2000 07:29

LCSD: 2000/08/24-01.02-003 Extracted: 08/24/2000 10:06 Analyzed 08/24/2000 10:06

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	566	568	500	500	113.2	113.6	0.4	75-125	20		
Benzene	109	109	100.0	100.0	109.0	109.0	0.0	77-123	20		
Toluene	108	107	100.0	100.0	108.0	107.0	0.9	78-122	20		
Ethyl benzene	100	100	100.0	100 0	100.0	100.0	0.0	70-130	20		
Xylene(s)	289	289	300	300	96.3	96.3	0.0	75-125	20		
Surrogate(s)											
Trifluorotoluene	528	527	500	500	105.6	105.4		58-124			
4-Bromofluorobenzene-FI	493	484	500	500	98.6	96.8		50-150			

To: **Aqua Science Engineers, Inc.**

Attn:Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Legend & Notes

Gas/BTEX and MTBE

Analyte Flags

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard.

To: **Aqua Science Engineers, Inc.**

Attn:Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Legend & Notes

Gas/BTEX and MTBE

Analyte Flags

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard.

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

Total Extractable Petroleum Hydrocarbons (TEPH)

Aqua Science Engineers, Inc.

208 West El Pintado Road
Danville, CA 94526

Attn: Ian T. Reed

Phone: (925) 820-9391 Fax: (925) 837-4853

Project #:

Project: Romak Iron Works

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
BH-A	Water	08/17/2000 11:00	1
BH-B	Water	08/17/2000 10:20	2
BH-C	Water	08/17/2000 12:00	3
BH-D	Water	08/17/2000 14:15	4
BH-E	Water	08/17/2000 15:20	5
BH-F	Water	08/17/2000 16:15	6
MW-1	Water	08/17/2000 15:00	7

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015m
Prep Method: 3510/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID:	**BH-A**	Lab Sample ID:	**2000-08-0402-001**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/21/2000 10:12
Sampled:	08/17/2000 11:00	QC-Batch:	2000/08/21-02.10
Matrix:	Water		

Sample/Analysis Flag rl (See Legend & Note section)

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	71	ug/L	1.43	08/22/2000 05:52	
Motor Oil	ND	710	ug/L	1.43	08/22/2000 05:52	
Surrogate(s)						
o-Terphenyl	87.6	60-130	%	1.43	08/22/2000 05:52	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015m
Prep Method: 3510/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: **BH-B**
Lab Sample ID: **2000-08-0402-002**

Project: Romak Iron Works
Received: 08/18/2000 15:25

Extracted: 08/21/2000 10:12

Sampled: 08/17/2000 10:20
QC-Batch: 2000/08/21-02.10

Matrix: Water

Sample/Analysis Flag rl (See Legend & Note section)

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	83	ug/L	1.67	08/22/2000 06:30	ndp
Motor Oil	ND	830	ug/L	1.67	08/22/2000 06:30	
Surrogate(s)						
o-Terphenyl	*89.9*	60-130	%	1.67	08/22/2000 06:30	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015m
Prep Method: 3510/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID:	**BH-C**	Lab Sample ID:	**2000-08-0402-003**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/21/2000 10:12
Sampled:	08/17/2000 12:00	QC-Batch:	2000/08/21-02.10
Matrix:	Water		

Sample/Analysis Flag rl (See Legend & Note section)

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	150	77	ug/L	1.54	08/22/2000 07:08	ldr
Motor Oil	ND	770	ug/L	1.54	08/22/2000 07:08	
Surrogate(s)						
o-Terphenyl	47.4	60-130	%	1.54	08/22/2000 07:08	sl,sl

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015m
Prep Method: 3510/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: **BH-D**
Lab Sample ID: **2000-08-0402-004**

Project: Romak Iron Works
Received: 08/18/2000 15:25

Extracted: 08/21/2000 10:12
Sampled: 08/17/2000 14:15
QC-Batch: 2000/08/21-02.10

Matrix: Water

Sample/Analysis Flag rl (See Legend & Note section)

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	100	ug/L	2.00	08/22/2000 07:47	ndp
Motor Oil	ND	1000	ug/L	2.00	08/22/2000 07:47	
Surrogate(s)						
o-Terphenyl	89.6	60-130	%	2.00	08/22/2000 07:47	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015m
Prep Method: 3510/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: **BH-E**
Lab Sample ID: **2000-08-0402-005**

Project: Romak Iron Works
Received: 08/18/2000 15:25

Extracted: 08/21/2000 10:12

Sampled: 08/17/2000 15:20
QC-Batch: 2000/08/21-02.10

Matrix: Water

Sample/Analysis Flag rl (See Legend & Note section)

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	61	ug/L	1.22	08/23/2000 17:47	
Motor Oil	ND	610	ug/L	1.22	08/23/2000 17:47	
Surrogate(s)						
o-Terphenyl	73.8	60-130	%	1.22	08/23/2000 17:47	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015m
Prep Method: 3510/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID:	**BH-F**	*Lab Sample ID:*	***2000-08-0402-006***
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/21/2000 10:12
Sampled:	08/17/2000 16:15	QC-Batch:	2000/08/21-02.10
Matrix:	Water		

Sample/Analysis Flag rl (See Legend & Note section)

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	59	ug/L	1.18	08/22/2000 08:25	
Motor Oil	ND	590	ug/L	1.18	08/22/2000 08:25	
Surrogate(s)						
o-Terphenyl	80.1	60-130	%	1.18	08/22/2000 08:25	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015m
Prep Method: 3510/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID:	**MW-1**	Lab Sample ID:	**2000-08-0402-007**
Project:	Romak Iron Works	Received:	08/18/2000 15:25
		Extracted:	08/21/2000 10:12
Sampled:	08/17/2000 15:00	QC-Batch:	2000/08/21-02.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	1100	50	ug/L	1.00	08/22/2000 09:03	ndp
Motor Oil	700	500	ug/L	1.00	08/22/2000 09:03	
Surrogate(s)						
o-Terphenyl	92.6	60-130	%	1.00	08/22/2000 09:03	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**
Attn.: Ian T. Reed

Test Method: 8015m
Prep Method: 3510/8015M

Batch QC Report

Total Extractable Petroleum Hydrocarbons (TEPH)

Method Blank **Water** **QC Batch # 2000/08/21-02.10**

MB: 2000/08/21-02.10-001 Date Extracted: 08/21/2000 10:12

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Diesel	ND	50	ug/L	08/22/2000 02:00	
Motor Oil	ND	500	ug/L	08/22/2000 02:00	
Surrogate(s)					
o-Terphenyl	89.0	60-130	%	08/22/2000 02:00	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-08-0402

To: **Aqua Science Engineers, Inc.**
Attn: Ian T. Reed

Test Method: 8015m
Prep Method: 3510/8015M

Batch QC Report

Total Extractable Petroleum Hydrocarbons (TEPH)

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2000/08/21-02.10**

LCS: 2000/08/21-02.10-002 Extracted: 08/21/2000 10:12 Analyzed 08/22/2000 01:22
LCSD: 2000/08/21-02.10-003 Extracted: 08/21/2000 10:12 Analyzed 08/22/2000 00:43

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Diesel	804	785	1250	1250	64.3	62.8	2.4	60-130	25		
Surrogate(s)											
o-Terphenyl	17.2	17.0	20.0	20.0	86.0	85.0		60-130			

To: **Aqua Science Engineers, Inc.**
Attn:Ian T. Reed

Test Method: 8015m
Prep Method: 3510/8015M

Legend & Notes

Total Extractable Petroleum Hydrocarbons (TEPH)

Analysis Flags

rl

Reporting limits raised due to reduced sample size.

Analyte Flags

ldr

Hydrocarbon reported is in the late Diesel range, and does not match our Diesel standard

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

si

Surrogate recoveries were lower than QC limit due to matrix interference, confirmed by reanalysis.

2000-08-0402

54026

Aqua Science Engineers, Inc.
208 W. El Pintado Road
Danville, CA 94526
(925) 820-9391
FAX (925) 837-4853

Chain of Custody

SAMPLER (SIGNATURE) Ian T. Reed (PHONE NO.) (925) 820-9391

PAGE 1 OF 1

PROJECT NAME Romak Iron Works JOB NO.

ADDRESS 3250 Hollis St, Oakland CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

5-day TAT

SAMPLE ID	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	TPH-G/BTEX/5 OXY'S (EPA 8260)	TPH-G/BTEX/ 7 OXY'S / HVOCS (EPA 8260)			COMPOSITE
BH-A	8/17	1100	water	5	X		X															
BH-B	8/17	1020			X		X															
BH-C	8/17	1200			X		X															
BH-D	8/17	1415			X		X															
BH-E	8/17	1520			X		X															
BH-F	8/17	1615			X		X															
MW-1	8/17	1500	↓	↓	X		X															

RELINQUISHED BY	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
(signature) Ian T. Reed (time)	(signature) (time) 1031	(signature) (time) 1515	(signature) (time) 1525	
Ian T. Reed (printed name) (date)	(printed name) (date) 8/18/00	(printed name) (date) 8/18/00	(printed name) (date) 08/18/00	TURN AROUND TIME
Company- ASE	Company-	Company-	Company-	STANDARD 24Hr 48Hr 72Hr
				OTHER:

APPENDIX E

Well Sampling Field Logs

AQUA SCIENCE ENGINEERS INC.

WELL SAMPLING FIELD LOG

Project Name and Address: Romak Iron Works
Job #: 2659 Date of sampling: 8/17/00
Well Name: MW-1 21.6' Sampled by: ITR
Total depth of well (feet): 21.78 Well diameter (inches): 2"
Depth to water before sampling (feet): 8.03
Thickness of floating product if any: —
Depth of well casing in water (feet): 13.75
Number of gallons per well casing volume (gallons) 2.3
Number of well casing volumes to be removed 4
Req'd volume of groundwater to be purged before sampling (gallons). 9.2
Equipment used to purge the well: disp. bailer
Time Evacuation Began: 1410 Time Evacuation Finished: 1430
Approximate volume of groundwater purged: 9.5
Did the well go dry? NO After how many gallons. —
Time samples were collected: 1500
Depth to water at time of sampling: 8.07
Percent recovery at time of sampling: 99%
Samples collected with: disp. bailer
Sample color: clear to gray Odor: slight HC odor
Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	72.1	6.41	720
2	71.3	6.40	710
3	71.4	6.41	720
4	71.5	6.43	720

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-1	5	40ml VOA	✓	✓	

208 W El Pintado, Danville, California 94526 • 925-820-9391 • Fax 925-837-4853