aqua science engineers inc.

Need to confirm MTBE and other oxygenates (in MW-2) w/ 8260.

October 14, 1999

REPORT
of
SOIL AND GROUNDWATER ASSESSMENT
at
Peerless Stages Bus Property
2021 Brush Street
Oakland, California

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

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

This submittal outlines Aqua Science Engineers, Inc. (ASE's) soil and groundwater assessment at the Peerless Stages bus company site located on 2021 Brush Street in Oakland, California *(Figures 1 and 2)*. The site assessment activities were designed to delineate the extent of hydrocarbon and polynuclear aromatic hydrocarbon (PNA's) contamination in soil and groundwater.

2.0 SITE HISTORY

2.1 October 1997 Soil and Groundwater Assessment

For decades, the site has been used as a maintenance yard and fueling site for the Peerless Stages bus company. In October 1997, Cambria Environmental Technology, Inc. of Oakland, California drilled five (5) soil borings at the site. These borings were drilled in the vicinity of the existing 2,000 gallon gasoline underground storage tank (UST), 8,000 gallon diesel-fuel UST and dispensers for the collection of soil and groundwater samples (Figure 2). Elevated concentrations of total petroleum hydrocarbons as gasoline (TPH-G) and diesel (TPH-D) were detected in the grab groundwater samples collected from two borings. Up to 120 parts per billion (ppb) TPH-G and 58,000 ppb TPH-D were detected in the groundwater samples. See Cambria's Subsurface Assessment Report dated October 20, 1997 for complete details regarding these activities.

2.2 May 1998 Gasoline UST Removal

In May 1998, ASE removed the 2,000 gallon gasoline UST from the site. Soil samples were collected from the bottom of the excavation and from the stockpiled soil generated during excavation activities. The soil samples were analyzed for TPH-G, TPH-D, benzene, toluene, ethyl benzene, total xylenes (collectively known as BTEX), methyl tertiary butyl ether (MTBE) and total lead. The only constituent identified in soil samples collected from the excavation was MTBE at concentrations up to 4.0 parts per million (ppm). The stockpiled soil contained 1.6 ppm TPH-G, 170 ppm TPH-D, trace concentrations of BTEX and MTBE, and 180 ppm total lead. The excavation was backfilled with import material on May 13, 1998. See ASE's UST Removal Report dated June 8, 1998 for complete details regarding these activities.

2.3 December 1998 Diesel UST Removal

In December 1998, ASE returned to the site to remove the 8,000 gallon diesel-fuel UST and the two dispensers. Soil samples were collected from the bottom of the excavation, from beneath the dispensers, and from the stockpiled soil generated during excavation activities. The soil samples were analyzed for TPH-G, TPH-D, BTEX, MTBE and total lead. The constituents detected in the soil samples collected from the excavation were 0.064 ppm MTBE and 30 ppm TPH-D in soil samples collected from the eastern end of the excavation, and 5.1 ppm TPH-D in soil samples collected from the western end of the excavation. The soil samples collected beneath the dispensers contained up to 3,800 ppm TPH-D and trace concentrations of BTEX and MTBE. No TPH-G was detected in these samples. Soil samples collected from the stockpiled soil contained 2,900 ppm TPH-D, 510 ppm TPH-G, trace concentrations of BTEX and MTBE, 130 ppm total lead, and 4.9 ppm soluble lead by the waste extraction test (WET). The excavation was backfilled with clean import material. See ASE's UST Removal Report dated January 8, 1999 for complete details regarding these activities. The stockpiled soil generated during the UST removal activities was transported to the Forward, Inc. Landfill in Manteca, California on May 25, 1999 for disposal. Also on May 25, 1999, the dispenser area was overexcavated to a depth of 11-feet below ground surface (bgs) in an effort to define and remove the vertical depth of TPH-D contamination beneath the dispensers previously identified in December 1998. Approximately 10 cubic yards of soil were removed and were transported along with the original stockpile to the Forward, Inc. landfill in Manteca, California. Two soil samples were collected from the northern and southern end of the excavation after overexcavation activities were completed. Analytical results indicated hydrocarbon concentrations up to 17 ppm TPH-G, 250 ppm TPH-D, and 4.6 ppm total lead.

3.0 SCOPE OF WORK (SOW)

ASE prepared the following scope of work (SOW) to assess the subsurface soil and groundwater in the vicinity of the previously removed USTs and dispensers. This work was preformed to satisfy the requirements detailed in a letter prepared for the Alameda County Health Care Services Agency (ACHCSA) on June 14, 1999. The letter is presented in *Appendix A*.

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

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

3) Drill four (4) soil borings to approximately 30-feet bgs at the site.

4) Analyze one soil sample collected from each soil boring at a CAL-EPA certified environmental laboratory for TPH-G by modified EPA Method 5030/8015M, TPH-D by modified EPA Method 3510/8015M, BTEX and MTBE by EPA Method 8020, and total lead by EPA Method 7420. Analyze the soil sample with the highest TPH-D concentration for polynuclear aromatic hydrocarbons (PNAs) by EPA Method 8310.

5) Install 2-inch diameter groundwater monitoring wells in each boring described in task 3.

6) Develop the monitoring wells.

7) Collect groundwater samples from each monitoring well for analyses.

8) Analyze the groundwater samples at a CAL-EPA certified analytical laboratory for TPH-G, TPH-D, BTEX and MTBE. In addition, the groundwater sample with the highest TPH-D concentration will also be analyzed for PNAs by EPA Method 8310.

9) Survey the top of casing elevation of each well, and determine the groundwater flow direction and gradient beneath the site.

10) Prepare a report detailing the methods and findings of this assessment.

Details of the assessment are presented below.

4.0 PREPARING A WORKPLAN AND HEALTH AND SAFETY PLAN

Based on the site history and the analytical results of the soil and groundwater samples collected during the previous assessment at the site, ASE has prepared a workplan as well as a site-specific health and safety plan. A nearby hospital was designated in the site safety plan as the emergency medical facility of first choice. A copy of the site specific Health and Safety Plan was present at the site at all times of during the soil and ground water investigation

5.0 DRILLING SOIL BORINGS AND COLLECTING SAMPLES

5.1 Permits

Prior to drilling, ASE obtained a drilling permit from the Alameda County Public Works Agency (ACPWA). ASE notified Underground Service Alert (USA) to have underground utility lines marked in the site vicinity prior to drilling. A copy of the drilling permit is presented in *Appendix B*

5.2 Drilling and Collection of Soil Samples

On August 18, 1999, West Hazmat Drilling Corp. of Newark, California drilled soil borings MW-1, MW-2, MW-3, and MW-4 at the site using a Mobile B-57 drill rig equipped with 8-inch diameter hollow-stem augers *(Figure 2)*. Groundwater monitoring wells MW-1, MW-2, MW-3, and MW-4 were subsequently constructed in their respective borings. The drilling was directed by ASE associate geologist Ian Reed and senior geologist Robert E. Kitay, R.G.

Undisturbed soil samples were collected from all soil borings at 5-foot intervals as drilling progressed for lithologic and hydrogeologic description and for possible chemical analyses. The samples were collected by driving a split-barrel drive sampler lined with 2-inch diameter brass tubes ahead of the auger tip with successive blows from a 140-lb. hammer dropped 30-inches. One tube from each sampling interval was immediately trimmed, sealed with Teflon tape, plastic end caps and duct tape, labeled, sealed in a plastic bag and stored on ice for transport to Chromalab, Inc. of Pleasanton, California (ELAP #1094) under chain of custody. Soil from the remaining tubes was described by an ASE geologist using the Unified Soil Classification System and was screened for volatile compounds with 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 hydrocarbons 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

Drilling equipment was steam-cleaned prior to use and sampling equipment was washed with a TSP solution between sampling intervals to prevent cross-contamination Steam cleaning rinsate and drill cuttings were contained in sealed and labeled 55-gallon steel drums and left on-site for temporary storage until off-site disposal can be arranged.

5.3 Site Specific Geology

Sediments encountered during drilling generally consisted of clayey silt or clayey sand from beneath the surface to approximately 14-feet bgs, and silty sand from approximately 14-feet bgs to 30-feet bgs. Sediments below 30-feet bgs generally consisted of silty clay to the total depth explored of 31-feet bgs. Groundwater was encountered between 16 and 20-feet bgs during drilling. The boring logs and well construction details are included as *Appendix B.*

6.0 ANALYTICAL RESULTS FOR SOIL

6.1 Soil Samples Analyzed

The soil samples collected from 15.5-feet bgs in soil borings MW-1, MW-2, and MW-3 and the soil sample collected from 15.0-feet bgs in soil boring MW-4 were analyzed by Chromalab, Inc. for TPH-G by modified EPA Method 5030/8015M, TPH-D by modified EPA Method 3510/8015M, BTEX and MTBE by EPA Method 8020, and total lead by EPA Method 7420. The soil sample from soil boring MW-2 was analyzed because it appeared to be the most contaminated based on odors, staining and OVM readings. The soil samples collected from MW-1, MW-3, and MW-4 showed no indication of contamination, but were analyzed since they were collected from just above the water table (the capillary zone). The soil sample from soil boring MW-2 contained the highest TPH-D concentration and therefore was also analyzed for polynuclear aromatic hydrocarbons (PNAs) by EPA Method 8310.

6.2 Soil Analytical Results

The soil sample collected from 15.5-feet bgs in boring MW-2 contained 53 ppm TPH-G, 190 ppm TPH-D, and 0.018 ppm flourene. No other compounds were detected in the soil samples collected above the laboratory reporting limits. The analytical results are tabulated in *Table One*, and copies of the certified analytical report and chain of custody form are included in *Appendix C.*

7.0 MONITORING WELL CONSTRUCTION, DEVELOPMENT AND SAMPLING

7.1 Monitoring Well Construction

Groundwater monitoring wells MW-1, MW-2, MW-3, and MW-4 were constructed in their respective borings. The monitoring wells were constructed with 2-inch diameter, 0.020-inch factory slotted, flush-threaded, schedule 40 PVC well screen and blank casing. All four wells are screened between 10-feet bgs and 30-feet bgs to monitor the first water bearing zone encountered. Lonestar #3 Monterey sand occupies the annular space between the borehole and the casing from the bottom of the boring to approximately 3-feet above the well screen. A 2-foot thick hydrated bentonite layer separates the sand from the overlying cement surface seal. The wellhead is secured with a locking wellplug beneath an at-grade, traffic-rated vault.

7.2 Monitoring Well Development

On August 23, 1999, ASE associate geologist Ian Reed developed all four monitoring wells (MW-1, MW-2, MW-3, and MW-4) using multiple episodes of surge-block agitation and submersible pumping. At least ten well casing volumes of water were removed from each well during development, and evacuation continued until the water was clear. Well development purge water was contained in sealed and labeled 55-gallon steel drums and left on-site. No free-floating hydrocarbons or sheen were present on the groundwater surface during well development. There was a slight odor present in monitoring well MW-2 that was not characteristic of hydrocarbons.

7.3 Monitoring Well Sampling

On August 26, 1999, ASE associate geologist Ian Reed collected groundwater samples from monitoring wells MW-1, MW-2, MW-3, and MW-4 for analysis. No free-floating hydrocarbons or sheen were present on the groundwater surface in any of the monitoring wells. Prior to sampling, each well was purged of four well casing volumes of groundwater. The pH, temperature and conductivity of the purge water were monitored during evacuation, and samples were not collected until these parameters stabilized. Samples were collected from each well using a pre-cleaned polyethylene bailer. The groundwater samples to be analyzed for volatile compounds were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials, pre-preserved with

hydrochloric acid and sealed without headspace. The remaining samples were contained in 1-liter amber glass bottles. All the samples were labeled and stored on ice for transport to Chromalab, Inc. of Pleasanton, California under chain of custody. Well sampling purge water was contained in sealed and labeled 55-gallon steel drums and left on-site for temporary storage. The field logs are presented in *Appendix D.*

8.0 GROUNDWATER RESULTS

8.1 Analytical Groundwater Results

The groundwater samples were analyzed by Chromolab Inc. for TPH-G by modified EPA Method 5030/8015M, TPH-D by modified EPA Method 3510/8015M, and BTEX and MTBE by EPA Method 8020. In addition, since the groundwater sample from monitoring well MW-2 contained the highest TPH-D concentration, it was also analyzed for PNAs by EPA Method 8310. The analytical results are tabulated in *Table Two*, and copies of the certified analytical report and chain of custody form are included in *Appendix E.*

The groundwater sample collected from monitoring well MW-1 contained 81 ppb TPH-G, 3.5 ppb benzene, 7.9 ppb toluene, 3.2 ppb ethyl benzene, and 15.0 ppb total xylenes. The groundwater sample collected from monitoring well MW-2 contained 8,600 ppb TPH-G, 1,200 ppb TPH-D, and 14,000 ppb MTBE. The groundwater sample collected from monitoring well MW-3 contained 2.5 ppb benzene, 3.0 ppb toluene, 0.87 ppb ethyl benzene, and 4.0 ppb total xylenes. The groundwater sample collected from monitoring well MW-4 contained 420 ppb TPH-D, 0.88 ethyl benzene, and 3.6 ppb total xylenes.

9.0 ELEVATION SURVEY AND GROUNDWATER FLOW

The site monitoring wells were surveyed relative to a site datum on August 8, 1999. This data was used in conjuction with the depth to groundwater measurements from August 26, 1999 to prepare a groundwater elevation (potentiometric surface) contour map. On August 26, 1999, the groundwater flow direction was to the west at a gradient of 0.02-feet/foot. The potentriometric surface map is included as *Figure 2.* The survey data and groundwater elevation data are presented in *Table Three.*

10.0 CONCLUSIONS AND RECOMMENDATIONS

10.1 Subsurface Soil

The soil sample collected from 15.5-feet bgs in monitoring well MW-2 contained 53 ppm TPH-G, 190 ppm TPH-D, and 0.018 ppm flourene. No other compounds detected in the soil samples from monitoring well MW-1 were above laboratory reporting limits, and no other compounds were detected in any soil samples collected from the other borings

10.2 Groundwater

The groundwater sample collected from monitoring well MW-1 contained 81 ppb TPH-G, 3.5 ppb benzene, 7.9 ppb toluene, 3.2 ppb ethyl benzene, and 15.0 ppb total xylenes. The groundwater sample collected from monitoring well MW-2 contained 8,600 ppb TPH-G, 1,200 ppb TPH-D, and 14,000 ppb MTBE. The groundwater sample collected from monitoring well MW-3 contained 2.5 ppb benzene, 3.0 ppb toluene, 0.87 ppb ethyl benzene, and 4.0 ppb total xylenes. The groundwater sample collected from monitoring well MW-4 contained 420 ppb TPH-D, 0.88 ethyl benzene, and 3.6 ppb total xylenes.

The benzene concentrations detected in groundwater samples collected from monitoring wells MW-1 and MW-3 exceeded the California Department of Health Services (DHS) maximum contamination level (MCL) for drinking water. The MTBE concentration detected in groundwater samples collected from monitoring well MW-2 exceeded the DHS MCL for drinking water.

10.3 Groundwater Flow Direction

Groundwater at the site flows to the west at a gradient of 0.02-feet/foot in an unconfined silty sand water bearing zone of medum permeability.

10.4 Recommendations

ASE recommends that groundwater beneath the site be sampled on a quarterly basis. ASE recommends that groundwater samples from all four wells be analyzed for TPH-G, TPH-D, BTEX, and MTBE.

11.0 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.

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 chemical analysis data.

Aqua Science Engineers appreciates the opportunity to 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 Alex Gaeta, Responsible Party
Gardner Kent, Property Owner
Eva Chu, ACHSA
Chuck Headlee, RWQCB, San Francisco Bay Region

TABLES

TABLE ONE

Summary of Chemical Analysis for Soil Samples Collected 8/18/99
Peerless Stages Property, Oakland, California
All results are in parts per million (ppm)

SAMPLE LOCATION	DEPTH (FT)	TPH-G	TPH-D	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	TOTAL LEAD	PNAs
MW-1	15.5	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 5.0	NA
MW-2	15.5	**53**	**190**	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62	< 5.0	**0.018***
MW-3	15.5	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 5.0	NA
MW-4	15.0	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 5.0	NA
Industrial PRG		NE	NE	1.4	520	230	210	NE	1000	varies
Residential PRG		NE	NE	0.62	520	230	210	NE	130	varies

Notes:

Detected concentrations in bold

Non-Detectable concentrations are noted by a less than symbol (<) followed by the laboratory reporting limit

NE = Not established

PNAs = Polynuclear Aromatic Hydrocarbons

* Fluorene at 0.018 ppb was the only PNA detected above the laboratory reporting method

NA = Sample was not analyzed

PRG = US EPA Preliminary Remediation Goal

TABLE TWO

Summary of Chemical Analysis for Groundwater Samples Collected 8/26/99
Peerless Stages Property, Oakland, California
All results are in parts per billion (ppb)

SAMPLE ID	TPH-G	TPH-D	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	PNA's
MW-1	**81**	< 50	**3.5**	**7.9**	**3.20**	**15**	< 5.0	NA
MW-2	**8,600**	**1,200**	< 25	< 25	< 25	< 25	**14,000**	< 0.057 - < 0.23
MW-3	< 50	< 63	**2.5**	**3**	**0.87**	**4**	< 5.0	NA
MW-4	< 50	**420**	< 0.5	< 0.5	**0.88**	**3.6**	< 5.0	NA
DHS MCL	NE	NE	1	150	700	1,750	13	varies

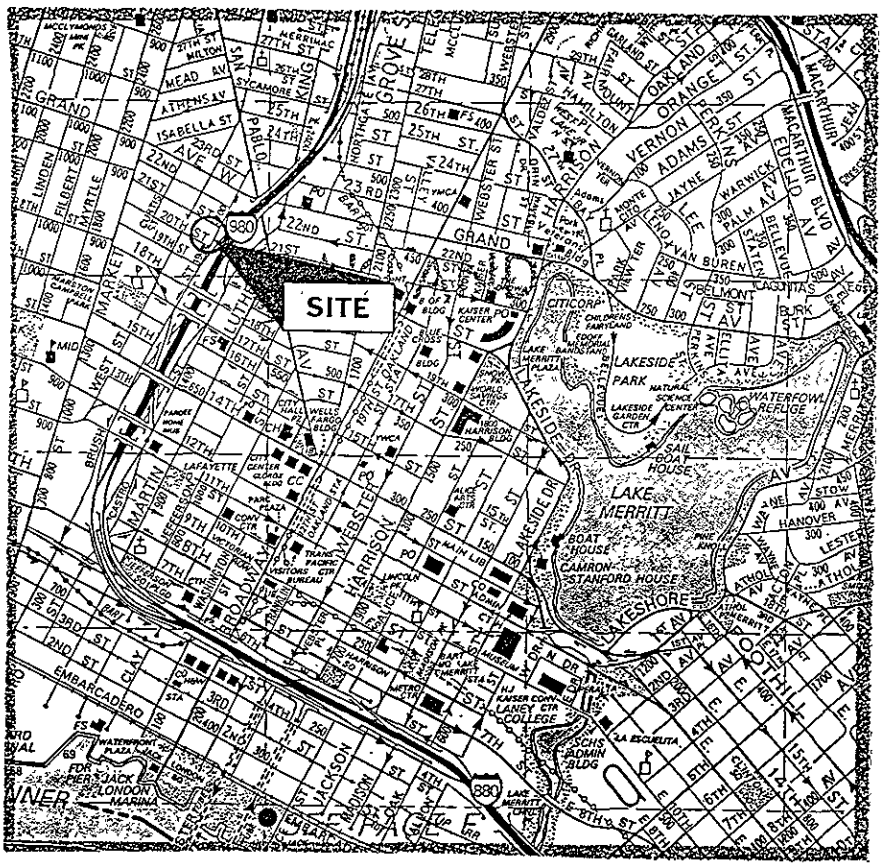
Notes:
Detected concentrations in bold
Non-Detectable concentrations are noted by a less than symbol (<) followed by the laboratory reporting limit
NE = DHS MCL not established
PNAs = Polynuclear Aromatic Hydrocarbons
DHS MCLs = Department of Health Services Maximum Contaminant Levels for drinking water
NA = Sample was not analyzed

TABLE THREE
Summary of Groundwater Well Survey Data
Peerless Stages Property, Oakland, California

Well ID	Date of Measurement	Top of Casing Elevation (relative to project datum)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-1	08/26/99	19.66	16.44	5.22
MW-2	08/26/99	20.00	16.88	3.12
MW-3	08/26/99	18.91	15.94	2.97
MW-4	08/26/99	19.43	16.48	2.95

FIGURES

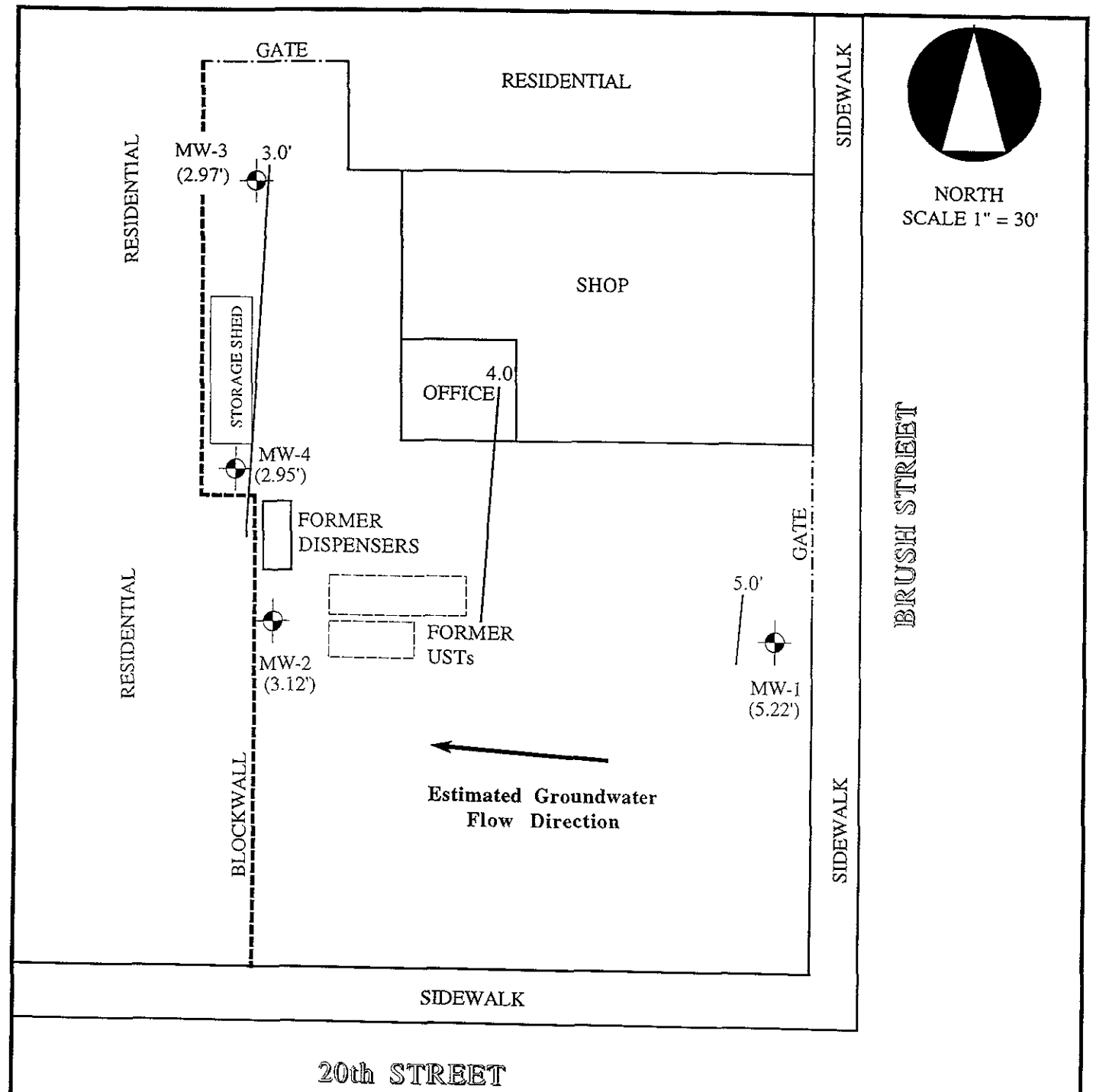
N



SITE LOCATION MAP

Former Peerless Stages, Inc Property
2021 Brush Street
Oakland, California

Aqua Science Engineers | Figure 1



LEGEND

MW-4	MONITORING WELL
(2.95')	GROUNDWATER ELEVATION RELATIVE TO PROJECT DATUM
	GROUNDWATER ELEVATION CONTOUR
	FORMER UST LOCATION

GROUNDWATER ELEVATION CONTOUR MAP
8/26/99

Former Peerless Stages, Inc. Property
2021 Brush Street
Oakland, California

AQUA SCIENCE ENGINEERS | Figure 2

APPENDIX A

Permits

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5246 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 2021 Brush Street
Oakland, CA 94612

California Coordinates Source _____ ft. Accuracy ± ___ ft.
CCN _____ ft. CCE _____ ft.
APN _____

CLIENT
Name Alex Goeta
Address 2040 Castro Street Phone _____
City Oakland, CA 94612 Zip 94612

APPLICANT Attn.: Ian Reed
Name Aqua Science Engineers Inc Fax 925-939-4853
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	☐		

DRILLER'S LICENSE NO. C57-554979

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 30 ft.
Surface Seal Depth 5 ft. Number 4

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

ESTIMATED STARTING DATE 8-18-99
ESTIMATED COMPLETION DATE 8-19-99

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

APPLICANT'S SIGNATURE Ian Reed DATE 8-13-99

FOR OFFICE USE
PERMIT NUMBER 99WR501
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 8-13-99

APPENDIX B

Boring Log and Well Construction Details

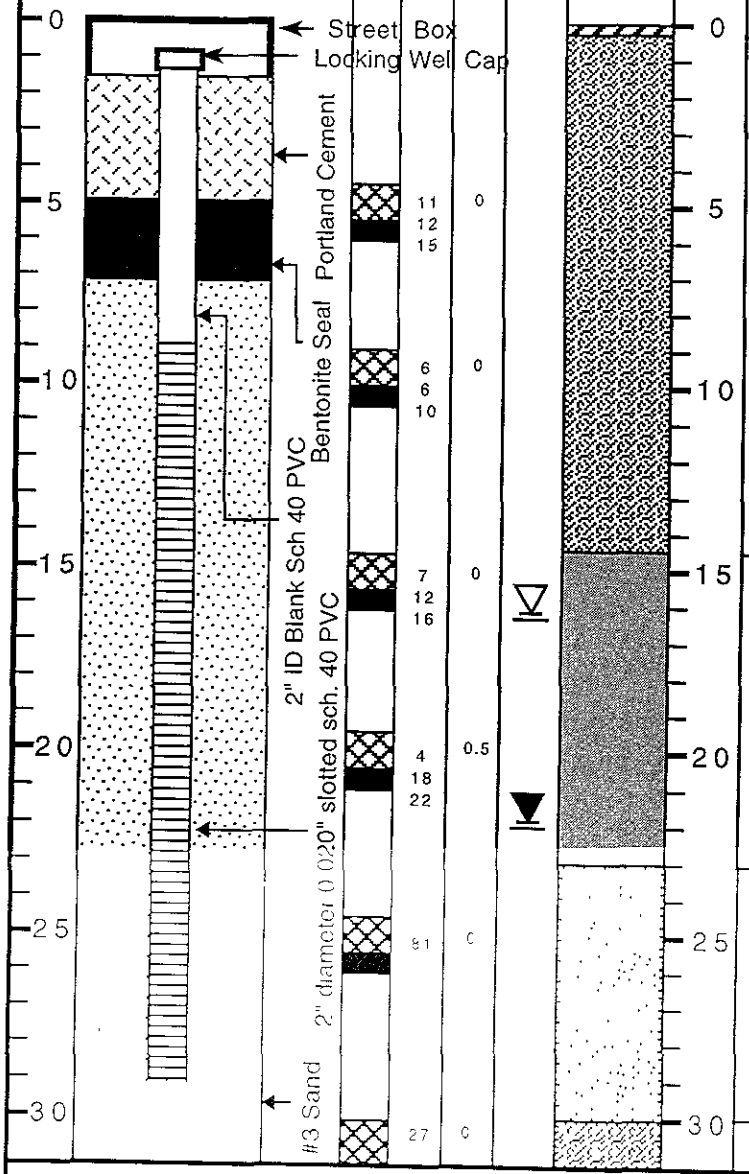
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

Monitoring Well: MW-1

Project Name: Peerless Stages	Project Location: 2021 Brush Street, Oakland, CA	Page 1 of 1
Driller: West Hazmat Drilling Corp.	Type of Rig: Hollow-Stem Auger	Size of Drill: 8.0" Diameter
Logged By: Ian Reed	Date Drilled: August 18, 1999	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 22.0'	Total Depth of Well Completed: 29.0'
Static Depth of Water in Well: 16.44'	Well Screen Type and Diameter: Sch. 40 PVC, 2" diameter
Total Depth of Boring: 31.0'	Well Screen Slot Size: 0.02"
	Type and Size of Soil Sampler: 2.0" I.D. Split-barrel Sampler



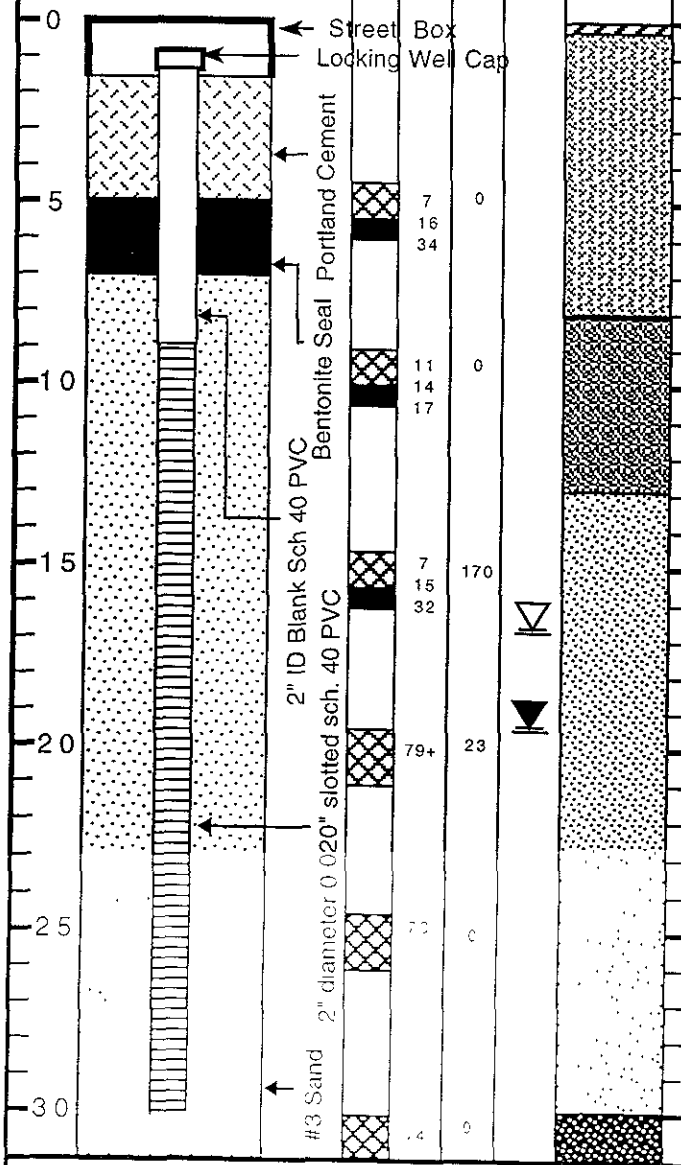
DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
Asphalt
Clayey SILT (ML); olive gray and brown; stiff; damp; 70% silt; 20% clay; 10% sand; trace gravel; moderate plasticity; low estimated K; no odor
Sandy SILT (ML); dark brown; stiff; moist; 70% silt; 30% sand; non-plastic; high estimated K; no odor
80% silt; 15% sand; 5% clay
Silty SAND (SP) light brown dense, wet, 90% fine to medium sand 10% silt, non-plastic, high estimated K, no odor

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS	Monitoring Well: MW-1
Project Name: Peerless	Project Location: 2021 Brush Street, Oakland, CA

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA: Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log	Depth in Feet	DESCRIPTION OF LITHOLOGY
									standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
				27 53					Clayey SILT (ML); gray to brown; dense; wet; 80% silt; 20% clay; medium plasticity; low estimated: no odor
									End of boring at 31.0'
35								35	
40								40	
45								45	
50								50	
55								55	
60								60	
65								65	

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Monitoring Well: MW-2
Project Name: Peerless Stages	Project Location: 2021 Brush Street, Oakland, CA	Page 1 of 2
Driller: West Hazmat Drilling Corp.	Type of Rig: Hollow-Stem Auger	Size of Drill: 8.0" Diameter
Logged By: Ian Reed	Date Drilled: August 18, 1999	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 19.5'	Total Depth of Well Completed: 30.0'
Static Depth of Water in Well: 16.88'	Well Screen Type and Diameter: Sch. 40 PVC, 2" diameter
Total Depth of Boring: 31.0'	Well Screen Slot Size: 0.02"
	Type and Size of Soil Sampler: 2.0" I.D. Split-barrel Sampler



DESCRIPTION OF LITHOLOGY

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

Asphalt

Clayey SAND (SC); brown; dense; damp; 70% fine to medium sand; 20% clay; 10% silt; medium plasticity; low estimated K; no odor

Sandy CLAY (CH); yellow-brown speckled black; stiff; damp; 70% clay; 25% sand; 5% silt; high plasticity; very low estimated K; no odor

Silty SAND (SM); olive; dense; moist; 70% sand; 15% silt; 5% clay; low plasticity; medium estimated K; moderate hydrocarbon odor

85% fine to medium sand; 15% silt; light brown; wet; non-plastic; high estimated K; no odor

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS | Monitoring Well: MW-2

Project Name: Peerless | Project Location: 2021 Brush Street, Oakland, CA |

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA: Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log	Depth in Feet	DESCRIPTION OF LITHOLOGY
									standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
				25 32					Silty CLAY (CH); olive gray; stiff; wet; 80% clay; 15% silt; 5% sand; high plasticity; very low estimated K; no odor
									End of boring at 31.0'
35								35	
40								40	
45								45	
50								50	
55								55	
60								60	
65								65	

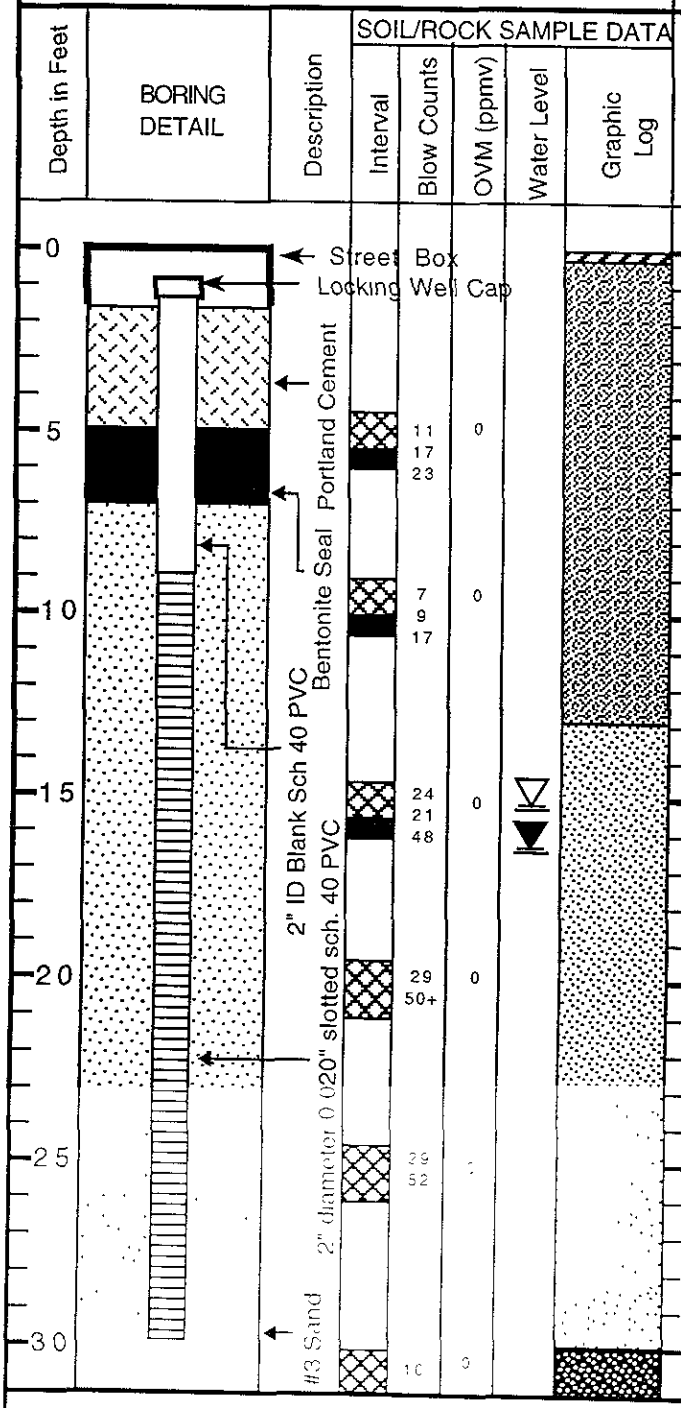
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

Monitoring Well: MW-3

Project Name: Peerless Stages	Project Location: 2021 Brush Street, Oakland, CA	Page 1 of 2
Driller: West Hazmat Drilling Corp.	Type of Rig: Hollow-Stem Auger	Size of Drill: 8.0" Diameter
Logged By: Ian Reed	Date Drilled: August 18, 1999	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

- Depth of Water First Encountered: 16.0'
- Static Depth of Water in Well: 15.94'
- Total Depth of Boring: 31.0'
- Total Depth of Well Completed: 30.0'
- Well Screen Type and Diameter: Sch. 40 PVC, 2" diameter
- Well Screen Slot Size: 0.02"
- Type and Size of Soil Sampler: 2.0" I.D. Split-barrel Sampler



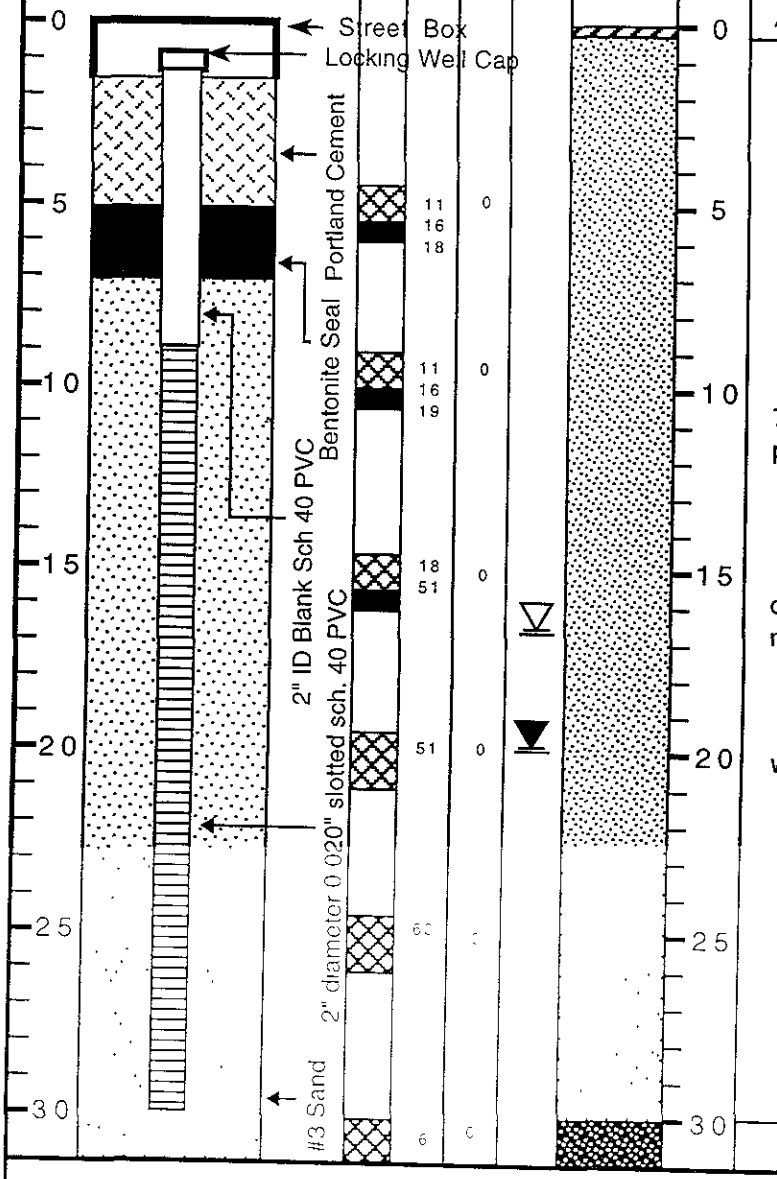
DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
Asphalt
Clayey SILT (SM); yellow brown; dense; damp; 60% silt; 20% clay; 20% sand; medium plasticity; low estimated K; no odor
70% silt; 20% clay; 10% sand
Silty SAND (SM); yellow brown; dense; damp; 75% sand: 25% silt; non-plastic; medium estimated K; no odor wet at 16.0'
Silty SAND (SW); yellow brown; dense; wet; 90% well-graded fine to coarse sand; 10% silt; non-plastic high estimated K; no odor

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS	Monitoring Well: MW-3
Project Name: Peerless Stages	Project Location: 2021 Brush Street, Oakland, CA

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA: Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log	Depth in Feet	DESCRIPTION OF LITHOLOGY
									standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
				15 17					Silty CLAY (CH); olive gray; stiff; wet; 80% clay; 20% silt; high plasticity; low estimated K; no odor
									End of boring at 31.0'
35								35	
40								40	
45								45	
50								50	
55								55	
60								60	
65								65	

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Monitoring Well: MW-4
Project Name: Peerless Stages	Project Location: 2021 Brush Street, Oakland, CA	Page 1 of 2
Driller: West Hazmat Drilling Corp.	Type of Rig: Hollow-Stem Auger	Size of Drill: 8.0" Diameter
Logged By: Ian Reed	Date Drilled: August 18, 1999	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 20.0'	Total Depth of Well Completed: 30.0'
Static Depth of Water in Well: 16.48'	Well Screen Type and Diameter: Sch. 40 PVC, 2" diameter
Total Depth of Boring: 31.0'	Well Screen Slot Size: 0.020"
	Type and Size of Soil Sampler: 2.0" I.D. Split-barrel Sampler



DESCRIPTION OF LITHOLOGY	
standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.	
0	Asphalt
0 – 5	Silty SAND (SM); light brown; medium dense; damp; 70% fine to medium sand; 25% silt; 5% clay; low plasticity; medium estimated K; no odor
5 – 10	70% fine to coarse sand; 20% silt; 10% clay; medium plasticity
10 – 15	dense; moist; 85% fine to medium sand; 25% silt; non-plastic; high estimated K; no odor
15 – 20	wet at 20'
20 – 30	

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS	Monitoring Well: MW-4
Project Name: Peerless Stages	Project Location: 2021 Brush Street, Oakland, CA

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA: Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log	Depth in Feet	DESCRIPTION OF LITHOLOGY
									standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
				51					Silty CLAY (CH); olive gray; stiff; wet; 80% clay; 20% silt; high plasticity; low estimated K; no odor
									End of boring at 31.0'
35								35	
40								40	
45								45	
50								50	
55								55	
60								60	
65								65	

APPENDIX C

Analytical Report and Chain of Custody Form
For Soil Samples

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

Attn.: Mr. Ian T. Reed

Project: 3190
Peerless

Site: 2021 Brush Street
Oakland, CA

Dear Mr. Reed,

Attached is our report for your samples received on Monday August 23, 1999. 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 September 22, 1999 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.

Sincerely,

Surinder Sahni for
Pierre Monette

Total Lead

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 #: 3190

Project: Peerless

Site: 2021 Brush Street
Oakland, CA

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-1-15.5`	Soil	08/18/1999 08:30	3
MW-2-15.5`	Soil	08/18/1999 10:37	7
MW-3-15.5`	Soil	08/18/1999 12:24	10
MW-4-15.5`	Soil	08/18/1999 14:13	13

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

Test Method: 6010B
Prep Method: 3050B

Total Lead

Sample ID:	**MW-1-15.5**	Lab Sample ID:	**1999-08-0368-003**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/24/1999
Sampled:	08/18/1999 08:30	QC-Batch:	1999/08/24-01.17
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	ND	5.0	mg/Kg	1.00	08/24/1999	

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

Test Method: 6010B
Prep Method: 3050B

Total Lead

Sample ID:	**MW-2-15.5'**	Lab Sample ID:	**1999-08-0368-007**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/24/1999
Sampled:	08/18/1999 10:37	QC-Batch:	1999/08/24-01.17
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	ND	5.0	mg/Kg	1.00	08/24/1999	

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

Test Method: 6010B
Prep Method: 3050B

Total Lead

Sample ID:	**MW-3-15.5`**	Lab Sample ID:	**1999-08-0368-010**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/24/1999
Sampled:	08/18/1999 12:24	QC-Batch:	1999/08/24-01.17
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	ND	5.0	mg/Kg	1.00	08/24/1999	

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

Test Method: 6010B
Prep Method: 3050B

Total Lead

Sample ID:	**MW-4-15.5'**	Lab Sample ID:	**1999-08-0368-013**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/24/1999
Sampled:	08/18/1999 14:13	QC-Batch:	1999/08/24-01.17
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Lead	ND	5.0	mg/Kg	1.00	08/24/1999	

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

Test Method: 6010B
Prep Method: 3050B

Batch QC Report
Total Lead

Method Blank | **Soil** | **QC Batch # 1999/08/24-01.17**

MB: 1999/08/24-01.17-001 | Date Extracted: 08/24/1999

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Lead	ND	5.0	mg/Kg	08/24/1999	

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

Test Method: 6010B
Prep Method: 3050B

Batch QC Report

Total Lead

Laboratory Control Spike (LCS/LCSD) Soil **QC Batch # 1999/08/24-01.17**

LCS: 1999/08/24-01.17-002 Extracted: 08/24/1999 Analyzed: 08/24/1999
LCSD: 1999/08/24-01.17-003 Extracted: 08/24/1999 Analyzed: 08/24/1999

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Lead	252	259	250	250	100.8	103.6	2.7	80-120	20		

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0368

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

Attn.: Ian T. Reed

Test Method: 6010B

Prep Method: 3050B

Batch QC Report

Total Lead

Matrix Spike (MS / MSD) **Soil** **QC Batch # 1999/08/24-01.17**

Sample ID: **MW-1-15.5`** Lab Sample ID: 1999-08-0368-003

MS: 1999/08/24-01.17-004 Extracted: 08/24/1999 Analyzed: 08/24/1999 Dilution: 1.0

MSD: 1999/08/24-01.17-005 Extracted: 08/24/1999 Analyzed: 08/24/1999 Dilution: 1.0

Compound	Conc [mg/Kg]			Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD	[%]	Recovery	RPD	MS	MSD
Lead	244	247	ND	250	250	97.6	98.8	1.2	75-125	20		

Gas/BTEX (Methanol Extraction)

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 #: 3190

Project: Peerless

Site: 2021 Brush Street
Oakland, CA

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-2-15.5'	Soil	08/18/1999 10:37	7

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

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Gas/BTEX (Methanol Extraction)

Sample ID:	**MW-2-15.5`**	Lab Sample ID:	**1999-08-0368-007**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/26/1999 15:31
Sampled:	08/18/1999 10:37	QC-Batch:	1999/08/26-01.04
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	53	10	mg/Kg	1.00	08/26/1999 15:31	g
Benzene	ND	0.62	mg/Kg	1.00	08/26/1999 15:31	
Toluene	ND	0.62	mg/Kg	1.00	08/26/1999 15:31	
Ethyl benzene	ND	0.62	mg/Kg	1.00	08/26/1999 15:31	
Xylene(s)	ND	0.62	mg/Kg	1.00	08/26/1999 15:31	
MTBE	ND	0.62	mg/Kg	1.00	08/26/1999 15:31	
Surrogate(s)						
Trifluorotoluene	114.8	53-125	%	.00	08/26/1999 15:31	
4-Bromofluorobenzene-FID	75.4	58-124	%	.00	08/26/1999 15:31	

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

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Batch QC Report
Gas/BTEX (Methanol Extraction)

Method Blank | **Soil** | **QC Batch # 1999/08/26-01.04**

MB: 1999/08/26-01.04-001

Date Extracted: 08/26/1999 06:47

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	08/26/1999 06:47	
Benzene	ND	0.0050	mg/Kg	08/26/1999 06:47	
Toluene	ND	0.0050	mg/Kg	08/26/1999 06:47	
Ethyl benzene	ND	0.0050	mg/Kg	08/26/1999 06:47	
Xylene(s)	ND	0.0050	mg/Kg	08/26/1999 06:47	
MTBE	ND	0.0050	mg/Kg	08/26/1999 06:47	
Surrogate(s)					
Trifluorotoluene	103.8	53-125	%	08/26/1999 06:47	
4-Bromofluorobenzene-FID	94.0	58-124	%	08/26/1999 06:47	

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

Attn: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Batch QC Report

Gas/BTEX (Methanol Extraction)

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 1999/08/26-01.04**

LCS: 1999/08/26-01.04-002 Extracted: 08/26/1999 06:47 Analyzed: 08/26/1999 06:47

LCSD: 1999/08/26-01.04-003 Extracted: 08/26/1999 07:41 Analyzed: 08/26/1999 07:41

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	0.494	0.420	0.500	0.500	98.8	84.0	16.2	75-125	35		
Benzene	0.0940	0.0910	0.1000	0.1000	94.0	91.0	3.2	77-123	35		
Toluene	0.0910	0.0880	0.1000	0.1000	91.0	88.0	3.4	78-122	35		
Ethyl benzene	0.0900	0.0860	0.1000	0.1000	90.0	86.0	4.5	70-130	35		
Xylene(s)	0.268	0.259	0.300	0.300	89.3	86.3	3.4	75-125	35		
Surrogate(s)											
Trifluorotoluene	505	494	500	500	101.0	98.8		53-125			
4-Bromofluorobenzene-FI	485	391	500	500	97.0	78.2		58-124			

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

Test Method: 8020
8015M

Attn:Ian T. Reed

Prep Method: 5030

Legend & Notes

Gas/BTEX (Methanol Extraction)

Analyte Flags

g

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

Diesel

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 #: 3190

Project: Peerless

Site: 2021 Brush Street
Oakland, CA

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-1-15.5`	Soil	08/18/1999 08:30	3
MW-2-15.5`	Soil	08/18/1999 10:37	7
MW-3-15.5`	Soil	08/18/1999 12:24	10
MW-4-15.5`	Soil	08/18/1999 14:13	13

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

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

Diesel

Sample ID:	**MW-1-15.5'**	Lab Sample ID:	**1999-08-0368-003**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/26/1999 10:23
Sampled:	08/18/1999 08:30	QC-Batch:	1999/08/26-03.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	08/26/1999 15:55	
Surrogate(s)						
o-Terphenyl	78.9	60-130	%	1.00	08/26/1999 15:55	

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

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

Diesel

Sample ID:	**MW-2-15.5'**	Lab Sample ID:	**1999-08-0368-007**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/26/1999 10:23
Sampled:	08/18/1999 10:37	QC-Batch:	1999/08/26-03.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	190	1.0	mg/Kg	1.00	08/26/1999 16:31	ed
Surrogate(s)						
o-Terphenyl	101.7	60-130	%	1.00	08/26/1999 16:31	

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

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

Diesel

Sample ID:	**MW-3-15.5`**	Lab Sample ID:	**1999-08-0368-010**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/26/1999 10:23
Sampled:	08/18/1999 12:24	QC-Batch:	1999/08/26-03.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	08/26/1999 17:08	
Surrogate(s)						
o-Terphenyl	87.2	60-130	%	1.00	08/26/1999 17:08	

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

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

Diesel

Sample ID:	**MW-4-15.5'**	Lab Sample ID:	**1999-08-0368-013**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/26/1999 10:23
Sampled:	08/18/1999 14:13	QC-Batch:	1999/08/26-03.10
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	08/26/1999 17:44	
Surrogate(s)						
o-Terphenyl	83.6	60-130	%	1.00	08/26/1999 17:44	

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

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

Batch QC Report
Diesel

Method Blank | **Soil** | **QC Batch # 1999/08/26-03.10**

MB: 1999/08/26-03.10-001 | Date Extracted: 08/26/1999 09:00

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Diesel	ND	1	mg/Kg	08/26/1999 14:52	
Surrogate(s)					
o-Terphenyl	84.0	60-130	%	08/26/1999 14:52	

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

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

Batch QC Report

Diesel

Laboratory Control Spike (LCS/LCSD) Soil **QC Batch # 1999/08/26-03.10**

LCS: 1999/08/26-03.10-002 Extracted: 08/26/1999 09:00 Analyzed: 08/26/1999 14:18
LCSD: 1999/08/26-03.10-003 Extracted: 08/26/1999 09:00 Analyzed: 08/26/1999 14:50

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Diesel	25.8	31.3	41.7	41.7	61.9	75.1	19.3	60-130	25		
Surrogate(s)											
o-Terphenyl	19.8	18.6	20.0	20.0	99.0	93.0		60-130			

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

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

Batch QC Report

Diesel

Matrix Spike (MS / MSD) **Soil** **QC Batch # 1999/08/26-03.10**

Sample ID: **MW-1-15.5`** Lab Sample ID: 1999-08-0368-003

MS: 1999/08/26-03.10-004 Extracted: 08/26/1999 10:23 Analyzed: 08/26/1999 15:46 Dilution: 1.0

MSD: 1999/08/26-03.10-005 Extracted: 08/26/1999 10:23 Analyzed: 08/26/1999 16:19 Dilution: 1.0

Compound	Conc [mg/Kg]			Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD	[%]	Recovery	RPD	MS	MSD
Diesel	28.8	27.1	ND	41.7	41.7	69.1	65.0	6.1	60-130	25		
Surrogate(s)												
o-Terphenyl	17.6	16.2		20.0	20.0	88.0	81.0		60-130			

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

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

Legend & Notes

Diesel

Analyte Flags

ed

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

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 #: 3190

Project: Peerless

Site: 2021 Brush Street
Oakland, CA

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-1-15.5`	Soil	08/18/1999 08:30	3
MW-3-15.5`	Soil	08/18/1999 12:24	10
MW-4-15.5`	Soil	08/18/1999 14:13	13

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

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**MW-1-15.5'**	Lab Sample ID:	**1999-08-0368-003**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/25/1999 16:10
Sampled:	08/18/1999 08:30	QC-Batch:	1999/08/26-01.04
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	08/25/1999 16:10	
Benzene	ND	0.0050	mg/Kg	1.00	08/25/1999 16:10	
Toluene	ND	0.0050	mg/Kg	1.00	08/25/1999 16:10	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	08/25/1999 16:10	
Xylene(s)	ND	0.0050	mg/Kg	1.00	08/25/1999 16:10	
MTBE	ND	0.0050	mg/Kg	1.00	08/25/1999 16:10	
Surrogate(s)						
Trifluorotoluene	92.5	53-125	%	1.00	08/25/1999 16:10	
4-Bromofluorobenzene-FID	77.0	58-124	%	1.00	08/25/1999 16:10	

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

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**MW-3-15.5**	Lab Sample ID:	**1999-08-0368-010**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/24/1999 21:26
Sampled:	08/18/1999 12:24	QC-Batch:	1999/08/24-01.04
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	08/24/1999 21:26	
Benzene	ND	0.0050	mg/Kg	1.00	08/24/1999 21:26	
Toluene	ND	0.0050	mg/Kg	1.00	08/24/1999 21:26	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	08/24/1999 21:26	
Xylene(s)	ND	0.0050	mg/Kg	1.00	08/24/1999 21:26	
MTBE	ND	0.0050	mg/Kg	1.00	08/24/1999 21:26	
Surrogate(s)						
Trifluorotoluene	90.3	53-125	%	1.00	08/24/1999 21:26	
4-Bromofluorobenzene-FID	78.2	58-124	%	1.00	08/24/1999 21:26	

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

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**MW-4-15.5'**	Lab Sample ID:	**1999-08-0368-013**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	08/25/1999 18:30
Sampled:	08/18/1999 14:13	QC-Batch:	1999/08/26-01.04
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	08/25/1999 18:30	
Benzene	ND	0.0050	mg/Kg	1.00	08/25/1999 18:30	
Toluene	ND	0.0050	mg/Kg	1.00	08/25/1999 18:30	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	08/25/1999 18:30	
Xylene(s)	ND	0.0050	mg/Kg	1.00	08/25/1999 18:30	
MTBE	ND	0.0050	mg/Kg	1.00	08/25/1999 18:30	
Surrogate(s)						
Trifluorotoluene	99.0	53-125	%	1.00	08/25/1999 18:30	
4-Bromofluorobenzene-FID	75.0	58-124	%	1.00	08/25/1999 18:30	

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 # 1999/08/24-01.04**

MB: 1999/08/24-01.04-001 | Date Extracted: 08/24/1999 15:21

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	08/24/1999 15:21	
Benzene	ND	0.0050	mg/Kg	08/24/1999 15:21	
Toluene	ND	0.0050	mg/Kg	08/24/1999 15:21	
Ethyl benzene	ND	0.0050	mg/Kg	08/24/1999 15:21	
Xylene(s)	ND	0.0050	mg/Kg	08/24/1999 15:21	
MTBE	ND	0.0050	mg/Kg	08/24/1999 15:21	
Surrogate(s)					
Trifluorotoluene	109.2	53-125	%	08/24/1999 15:21	
4-Bromofluorobenzene-FID	87.8	58-124	%	08/24/1999 15:21	

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 # 1999/08/26-01.04**

MB: 1999/08/26-01.04-001

Date Extracted: 08/26/1999 06:47

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	08/26/1999 06:47	
Benzene	ND	0.0050	mg/Kg	08/26/1999 06:47	
Toluene	ND	0.0050	mg/Kg	08/26/1999 06:47	
Ethyl benzene	ND	0.0050	mg/Kg	08/26/1999 06:47	
Xylene(s)	ND	0.0050	mg/Kg	08/26/1999 06:47	
MTBE	ND	0.0050	mg/Kg	08/26/1999 06:47	
Surrogate(s)					
Trifluorotoluene	103.8	53-125	%	08/26/1999 06:47	
4-Bromofluorobenzene-FID	94.0	58-124	%	08/26/1999 06:47	

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

Attn: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Batch QC Report

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 1999/08/24-01.04**

LCS: 1999/08/24-01.04-002 Extracted: 08/24/1999 07:53 Analyzed: 08/24/1999 07:53

LCSD: 1999/08/24-01.04-003 Extracted: 08/24/1999 08:47 Analyzed: 08/24/1999 08:47

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	0.466	0.481	0.500	0.500	93.2	96.2	3.2	75-125	35		
Benzene	0.0926	0.0815	0.1000	0.1000	92.6	81.5	12.8	77-123	35		
Toluene	0.0918	0.0811	0.1000	0.1000	91.8	81.1	12.4	78-122	35		
Ethyl benzene	0.0901	0.0793	0.1000	0.1000	90.1	79.3	12.8	70-130	35		
Xylene(s)	0.269	0.238	0.300	0.300	89.7	79.3	12.3	75-125	35		
Surrogate(s)											
Trifluorotoluene	533	450	500	500	106.6	90.0		53-125			
4-Bromofluorobenzene-Fl	475	473	500	500	95.0	94.6		58-124			

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

Test Method: 8015M
8020

Attn: Ian T. Reed

Prep Method: 5030

Batch QC Report

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 1999/08/26-01.04**

LCS: 1999/08/26-01.04-002 Extracted: 08/26/1999 06:47 Analyzed: 08/26/1999 06:47

LCSD: 1999/08/26-01.04-003 Extracted: 08/26/1999 07:41 Analyzed: 08/26/1999 07:41

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	0.494	0.420	0.500	0.500	98.8	84.0	16.2	75-125	35		
Benzene	0.0940	0.0910	0.1000	0.1000	94.0	91.0	3.2	77-123	35		
Toluene	0.0910	0.0880	0.1000	0.1000	91.0	88.0	3.4	78-122	35		
Ethyl benzene	0.0900	0.0860	0.1000	0.1000	90.0	86.0	4.5	70-130	35		
Xylene(s)	0.268	0.259	0.300	0.300	89.3	86.3	3.4	75-125	35		
Surrogate(s)											
Trifluorotoluene	505	494	500	500	101.0	98.8		53-125			
4-Bromofluorobenzene-FI	485	391	500	500	97.0	78.2		58-124			

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

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Batch QC Report

Gas/BTEX and MTBE

Matrix Spike (MS / MSD) **Soil** **QC Batch # 1999/08/24-01.04**

Sample ID: **MW-3-15.5`** Lab Sample ID: 1999-08-0368-010

MS: 1999/08/24-01.04-004 Extracted: 08/25/1999 21:53 Analyzed: 08/25/1999 21:53 Dilution: 1.0

MSD: 1999/08/24-01.04-005 Extracted: 08/24/1999 22:50 Analyzed: 08/24/1999 22:50 Dilution: 1.0

Compound	Conc [mg/Kg]			Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD	[%]	Recovery	RPD	MS	MSD
Gasoline	0.392	0.382	ND	0.453	0.485	86.5	78.8	9.3	65-135	35		
Benzene	0.0729	0.0760	ND	0.0906	0.0971	80.5	78.3	2.8	65-135	35		
Toluene	0.0728	0.0753	ND	0.0906	0.0971	80.4	77.5	3.7	65-135	35		
Ethyl benzene	0.0714	0.0737	ND	0.0906	0.0971	78.8	75.9	3.7	65-135	35		
Xylene(s)	0.213	0.219	ND	0.272	0.291	78.3	75.3	3.9	65-135	35		
Surrogate(s)												
Trifluorotoluene	462	445		500	500	92.4	89.0		53-125			
4-Bromofluorobenzene-	404	412		500	500	80.8	82.4		58-124			

Polynuclear Aromatic Hydrocarbons (PNA)

Aqua Science Engineers, Inc.

208 West El Pintado Road
Danville, CA 94526

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

Attn: Ian T. Reed

Project #: 3190

Site: 2021 Brush Street
Oakland, CA

Project: Peerless

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-2-15.5`	Soil	08/18/1999 10:37	7

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

Test Method: 8310
Prep Method: 3550/8310

Polynuclear Aromatic Hydrocarbons (PNA)

Sample ID:	**MW-2-15.5**	Lab Sample ID:	**1999-08-0368-007**
Project:	3190 Peerless	Received:	08/23/1999 16:58
Site:	2021 Brush Street Oakland, CA	Extracted:	09/01/1999 15:48
Sampled:	08/18/1999 10:37	QC-Batch:	1999/09/01-01.18
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Naphthalene	ND	15	ug/Kg	1.00	09/01/1999 19:16	
Acenaphthylene	ND	5.0	ug/Kg	1.00	09/01/1999 19:16	
Acenaphthene	ND	5 0	ug/Kg	1.00	09/01/1999 19:16	
Fluorene	18	5.0	ug/Kg	1.00	09/01/1999 19:16	
Phenanthrene	ND	5 0	ug/Kg	1.00	09/01/1999 19:16	
Anthracene	ND	5.0	ug/Kg	1.00	09/01/1999 19:16	
Fluoranthene	ND	5.0	ug/Kg	1.00	09/01/1999 19:16	
Pyrene	ND	5.0	ug/Kg	1.00	09/01/1999 19:16	
Benzo(a)anthracene	ND	5.0	ug/Kg	1.00	09/01/1999 19:16	
Chrysene	ND	5.0	ug/Kg	1.00	09/01/1999 19:16	
Benzo(b)fluoranthene	ND	5.0	ug/Kg	1.00	09/01/1999 19:16	
Benzo(k)fluoranthene	ND	5.0	ug/Kg	1.00	09/01/1999 19:16	
Benzo(a)pyrene	ND	5.0	ug/Kg	1.00	09/01/1999 19:16	
Dibenzo(a,h)anthracene	ND	10	ug/Kg	1.00	09/01/1999 19:16	
Benzo(g,h,i)perylene	ND	10	ug/Kg	1.00	09/01/1999 19:16	
Indeno(1,2,3-cd)pyrene	ND	10	ug/Kg	1.00	09/01/1999 19:16	
Surrogate(s)						
1-Methyl naphthalene	129.0	50-150	%	1.00	09/01/1999 19:16	

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

Test Method: 8310
Prep Method: 3550/8310

Batch QC Report
Polynuclear Aromatic Hydrocarbons (PNA)

Method Blank | **Soil** | **QC Batch # 1999/09/01-01.18**

MB: 1999/09/01-01.18-001 | Date Extracted: 09/01/1999

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Naphthalene	ND	15.0	ug/Kg	09/01/1999 17:29	
Acenaphthylene	ND	5.0	ug/Kg	09/01/1999 17:29	
Acenaphthene	ND	5.0	ug/Kg	09/01/1999 17:29	
Fluorene	ND	5.0	ug/Kg	09/01/1999 17:29	
Phenanthrene	ND	5.0	ug/Kg	09/01/1999 17:29	
Anthracene	ND	5.0	ug/Kg	09/01/1999 17:29	
Fluoranthene	ND	5.0	ug/Kg	09/01/1999 17:29	
Pyrene	ND	5.0	ug/Kg	09/01/1999 17:29	
Benzo(a)anthracene	ND	5.0	ug/Kg	09/01/1999 17:29	
Chrysene	ND	5.0	ug/Kg	09/01/1999 17:29	
Benzo(b)fluoranthene	ND	5.0	ug/Kg	09/01/1999 17:29	
Benzo(k)fluoranthene	ND	5.0	ug/Kg	09/01/1999 17:29	
Benzo(a)pyrene	ND	5.0	ug/Kg	09/01/1999 17:29	
Dibenzo(a,h)anthracene	ND	10.0	ug/Kg	09/01/1999 17:29	
Benzo(g,h,i)perylene	ND	10.0	ug/Kg	09/01/1999 17:29	
Indeno(1,2,3-cd)pyrene	ND	10.0	ug/Kg	09/01/1999 17:29	
Surrogate(s)					
1-Methyl naphthalene	72.0	50-150	%	09/01/1999 17:29	

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

Test Method: 8310
Prep Method: 3550/8310

Batch QC Report

Polynuclear Aromatic Hydrocarbons (PNA)

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 1999/09/01-01.18**

LCS: 1999/09/01-01.18-002 Extracted: 09/01/1999 Analyzed: 09/01/1999 15:56
LCSD: 1999/09/01-01.18-003 Extracted: 09/01/1999 Analyzed: 09/01/1999 16:43

Compound	Conc. [ug/Kg]		Exp.Conc. [ug/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Naphthalene	0.158	0.145	0.200	0.200	79.0	72.5	8.6	50-150	35		
Phenanthrene	0.170	0.141	0.200	0.200	85.0	70.5	18.6	50-150	35		
Pyrene	0.184	0.142	0.200	0.200	92.0	71.0	25.8	50-150	35		
Chrysene	0.199	0.142	0.200	0.200	99.5	71.0	33.4	50-150	35		
Benzo(a)pyrene	0.186	0.134	0.200	0.200	93.0	67.0	32.5	50-150	35		
Surrogate(s)											
1-Methyl naphthalene	9.77	9.35	15	15	65.1	62.3		50-150			

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

Test Method: 8310
Prep Method: 3550/8310

Batch QC Report

Polynuclear Aromatic Hydrocarbons (PNA)

Matrix Spike (MS / MSD) **Soil** **QC Batch # 1999/09/01-01.18**

Sample ID: **MW-2-15.5`** Lab Sample ID: 1999-08-0368-007

MS: 1999/09/01-01.18-004 Extracted: 09/01/1999 Analyzed: 09/01/1999 18:05 Dilution: 1.0

MSD: 1999/09/01-01.18-005 Extracted: 09/01/1999 Analyzed: 09/01/1999 18:41 Dilution: 1.0

Compound	Conc [ug/Kg]			Exp.Conc. [ug/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD	[%]	Recovery	RPD	MS	MSD
Naphthalene	0.238	0.224	ND	0.199	0.199	119.6	112.6	6.0	50-150	35		
Phenanthrene	0.211	0.208	ND	0.199	0.199	106.0	104.5	1.4	50-150	35		
Pyrene	0.270	0.254	ND	0.199	0.199	135.7	127.6	6.2	50-150	35		
Chrysene	0.197	0.182	ND	0.199	0.199	99.0	91.5	7.9	50-150	35		
Benzo(a)pyrene	0.178	0.168	ND	0.199	0.199	89.4	84.4	5.8	50-150	35		
Surrogate(s)												
1-Methyl naphthalene	15.5	16.4		15	15	103.3	109.3		50-150			

99-08-0368

47603

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 2

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

PROJECT NAME Peerless JOB NO. 3140

ADDRESS 2021 Brush Street, Oakland, CA DATE 8-23-99

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:
Analyze the sample with the highest TPH-D concentration for PNA's by EPA Method 8310

SAMPLE ID	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-GASOLINE (EPA 5030/8015)	TPH-DIESEL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	PURGEABLE AROMATICS (EPA 602/8020)	VOLATILE ORGANICS (EPA 624/8240)	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)	ORGANOCHLORINE HERBICIDES (EPA 8150)	FUEL OXYGENATES (EPA 8260)	Total Pb	HOLD		COMPOSITE
MW-1-5.5'	8-18-99	0825	soil	1																X		
MW-1-10.5'		0829		1																X		
MW-1-15.5'		0830		1	X		X												X			
MW-1-20.5'		0835		1																X		
MW-2-5.0'		1028		1																X		
MW-2-10.5'		1031		1																X		
MW-2-15.5'		1037		1	X		X												X			
MW-3-5.5'		1211		1																X		
MW-3-10.5'		1215		1																X		
MW-3-15.5'	↓	1224	↓	1	X		X												X			

RELINQUISHED BY: Ian T Reed 0830 (signature) (time)
Ian T Reed 8-23-99 (printed name) (date)
Company: ASE

RECEIVED BY: (signature) 1201 (time)
B Morrow 8-23-99 (printed name) (date)
Company: Chromalab

RELINQUISHED BY: (signature) 1658 (time)
B Morrow 8-23-99 (printed name) (date)
Company: Chromalab

RECEIVED BY LABORATORY: Denise Harrington (signature) (time)
D. Harrington 1658 (printed name) (date)
Company: Chromalab 8/23/99

COMMENTS:
5-day TAT.
4.3°C

99-08-0368

47603

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

Chain of Custody

PAGE 2 OF 2

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

PROJECT NAME Peerless JOB NO. 3190

ADDRESS 2021 Bush Street, Oakland, CA DATE 8-23-99

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-GASOLINE (EPA 5030/8015)	TPH-DIESEL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	PURGEABLE AROMATICS (EPA 602/8020)	VOLATILE ORGANICS (EPA 624/8240)	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)	ORGANOCHLORINE HERBICIDES (EPA 8150)	FUEL OXYGENATES (EPA 8260)	Total Pb	HOLD		COMPOSITE
MW-4-5.5'	8-18-99	1401	Soil	1																X		
MW-4-10.5'	8-18-99	1407	Soil	1																X		
MW-4-15.0'	8-18-99	1413	Soil	1	X		X												X			

RELINQUISHED BY	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
Ian Reed 0850	B Morrow 1201	1658	Denise Harrington	
(signature) (time)	(signature) (time)	(signature) (time)	(signature) (time)	
Ian J Reed 8-23-99	B Morrow 8-23-99	[illegible] 8-23-99	D. Harvington 1658	5 day TAT.
(printed name) (date)	(printed name) (date)	(printed name) (date)	(printed name) (date)	
Company- ASE	Company- [illegible]	Company- [illegible]	Chromalab 8/23/99 Company-	4.3°C

APPENDIX D

Well Sampling Field Logs

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Peerless
Job #: 3901 Date of sampling: 8-26-99
Well Name: MW-1 Sampled by: JJR
Total depth of well (feet): 27.0 Well diameter (inches): _____
Depth to water before sampling (feet): 16.44
Thickness of floating product if any: None
Depth of well casing in water (feet): 10.56
Number of gallons per well casing volume (gallons): 1.8
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 7.2
Equipment used to purge the well: Sub. pump
Time Evacuation Began: 1315 Time Evacuation Finished: 13:45
Approximate volume of groundwater purged: 10
Did the well go dry?: NO After how many gallons: _____
Time samples were collected: 1350
Depth to water at time of sampling: 17.45'
Percent recovery at time of sampling: 85%
Samples collected with: dedicated bailer
Sample color: gray / clear Odor: None
Description of sediment in sample: _____

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	71.0	5.37	429
2	69.0	6.02	498
3	68.9	5.78	476
4	70.4	5.69	464

SAMPLES COLLECTED

	Containers	Volume & type container			
MW-1	3	40 ml VOAs	✓	✓	
MW-1	4	1-liter Ambers		✓	

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Perrless, 2021 Brush street Oakland CA
Job #: 3901 Date of sampling: 8-26-99
Well Name: MW-2 Sampled by: ITR
Total depth of well (feet): 30.00 Well diameter (inches): 2"
Depth to water before sampling (feet): 16.88
Thickness of floating product if any: None
Depth of well casing in water (feet): 13.12
Number of gallons per well casing volume (gallons): 2.2
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 8.9
Equipment used to purge the well: submersible pump
Time Evacuation Began: 1239 Time Evacuation Finished: 1249
Approximate volume of groundwater purged: 9.0
Did the well go dry?: NO After how many gallons:
Time samples were collected: 1250
Depth to water at time of sampling: 17.08'
Percent recovery at time of sampling: 90%
Samples collected with: dedicated bailer
Sample color: grey Odor: Septic smell ??
Description of sediment in sample: * foam in sample ??

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	69.9	5.64	734
2	70.1	5.37	548
3	69.9	5.28	530
4	70.0	5.29	539

SAMPLES COLLECTED

Sample	# of containers	Volume & type of container	Preserved	Iced?	Analyses
MW-2	3	40 ml Ambers	✓	✓	
MW-2	4	1-liter Ambers		✓	

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Peerless, 2021 Brush street Oakland CA
Job #: 3190 Date of sampling: 8-26-99
Well Name: MW-3 Sampled by: ITR
Total depth of well (feet): 29.6' Well diameter (inches): 2"
Depth to water before sampling (feet): 15.94'
Thickness of floating product if any: —
Depth of well casing in water (feet): 13.66
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): 9.3
Equipment used to purge the well: submersible pump / bailer
Time Evacuation Began: 1115 Time Evacuation Finished: 1130
Approximate volume of groundwater purged: 9.5
Did the well go dry?: NO After how many gallons: —
Time samples were collected: 1135
Depth to water at time of sampling: 16.00'
Percent recovery at time of sampling: 90%
Samples collected with: dedicated bailer
Sample color: gray / clear Odor: none
Description of sediment in sample:

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	70.0	5.43	437
2	69.7	5.37	429
3	69.3	5.39	410
4	70.1	5.46	451

SAMPLES COLLECTED

MW-3	3	40ml VOAs	✓	✓
MW-3	4	1-liter Ambers		✓

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Pearless
Job #: 3901 Date of sampling: 8-26-99
Well Name: MW-4 Sampled by:
Total depth of well (feet): 29.64' Well diameter (inches): 2"
Depth to water before sampling (feet): 16.48
Thickness of floating product if any: -
Depth of well casing in water (feet): 13.16
Number of gallons per well casing volume (gallons): 2.2
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 8.9
Equipment used to purge the well: submersible pump / bailer
Time Evacuation Began: 1200 Time Evacuation Finished:
Approximate volume of groundwater purged: 9.0
Did the well go dry? No After how many gallons:
Time samples were collected: 1215
Depth to water at time of sampling: 17.08
Percent recovery at time of sampling: 90%
Samples collected with: dedicated bailer
Sample color: gray/clear Odor: None
Description of sediment in sample:

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	69.9	6.01	437
2	70.1	5.84	501
3	71.4	5.76	397
4	70.9	5.94	401

SAMPLES COLLECTED

Sample	#	Type container	Pres.	Ice
MW-4	3	40 ml VOAs	✓	✓
MW-4	1	1-liter Amber		✓

APPENDIX E

Analytical Report and Chain of Custody Form
For Groundwater Samples

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

Attn.: Mr. Ian T. Reed

Project: 3190
Peerless

Site: 2021 Brush St.
Oakland, CA

Dear Mr. Reed,

Attached is our report for your samples received on Friday August 27, 1999.
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 September 26, 1999 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.

Sincerely,

Pierre Monette

Polynuclear Aromatic Hydrocarbons (PNA)

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 #: 3190

Project: Peerless

Site: 2021 Brush St.
Oakland, CA

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-2	Water	08/26/1999 12:50	2

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

Test Method: 8310
Prep Method: 3510/8310

Polynuclear Aromatic Hydrocarbons (PNA)

Sample ID:	**MW-2**	Lab Sample ID:	**1999-08-0453-002**
Project:	3190 Peerless	Received:	08/27/1999 14:26
Site:	2021 Brush St. Oakland, CA	Extracted:	09/13/1999 16:50
Sampled:	08/26/1999 12:50	QC-Batch:	1999/09/13-01.18
Matrix:	Water		

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

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Naphthalene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Acenaphthylene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Acenaphthene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Fluorene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Phenanthrene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Anthracene	ND	0.057	ug/L	1.15	09/13/1999 16:04	
Fluoranthene	ND	0.23	ug/L	1.15	09/13/1999 16:04	
Pyrene	ND	0.17	ug/L	1.15	09/13/1999 16:04	
Benzo(a)anthracene	ND	0.17	ug/L	1.15	09/13/1999 16:04	
Chrysene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Benzo(b)fluoranthene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Benzo(k)fluoranthene	ND	0.057	ug/L	1.15	09/13/1999 16:04	
Benzo(a)pyrene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Dibenzo(a,h)anthracene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Benzo(g,h,i)perylene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Indeno(1,2,3-cd)pyrene	ND	0.11	ug/L	1.15	09/13/1999 16:04	
Surrogate(s)						
1-Methyl naphthalene	83.3	50-150	%	1.15	09/13/1999 16:04	

To: **Aqua Science Engineers, Inc.** Test Method: 8310
Attn.: Ian T. Reed Prep Method: 3510/8310

Batch QC Report

Polynuclear Aromatic Hydrocarbons (PNA)

Method Blank **Water** **QC Batch # 1999/09/13-01.18**

MB: 1999/09/13-01.18-001 Date Extracted: 09/13/1999

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Naphthalene	ND	0.10	ug/L	09/13/1999 15:24	
Acenaphthylene	ND	0.10	ug/L	09/13/1999 15:24	
Acenaphthene	ND	0.10	ug/L	09/13/1999 15:24	
Fluorene	ND	0.10	ug/L	09/13/1999 15:24	
Phenanthrene	ND	0.10	ug/L	09/13/1999 15:24	
Anthracene	ND	0.05	ug/L	09/13/1999 15:24	
Fluoranthene	ND	0.20	ug/L	09/13/1999 15:24	
Pyrene	ND	0.15	ug/L	09/13/1999 15:24	
Benzo(a)anthracene	ND	0.15	ug/L	09/13/1999 15:24	
Chrysene	ND	0.10	ug/L	09/13/1999 15:24	
Benzo(b)fluoranthene	ND	0.10	ug/L	09/13/1999 15:24	
Benzo(k)fluoranthene	ND	0.05	ug/L	09/13/1999 15:24	
Benzo(a)pyrene	ND	0.10	ug/L	09/13/1999 15:24	
Dibenzo(a,h)anthracene	ND	0.10	ug/L	09/13/1999 15:24	
Benzo(g,h,i)perylene	ND	0.10	ug/L	09/13/1999 15:24	
Indeno(1,2,3-cd)pyrene	ND	0.10	ug/L	09/13/1999 15:24	
Surrogate(s)					
1-Methyl naphthalene	85.3	50-150	%	09/13/1999 15:24	

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

Test Method: 8310
Prep Method: 3510/8310

Batch QC Report

Polynuclear Aromatic Hydrocarbons (PNA)

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 1999/09/13-01.18**

LCS: 1999/09/13-01.18-002 Extracted: 09/13/1999 Analyzed: 09/13/1999 14:09
LCSD: 1999/09/13-01.18-003 Extracted: 09/13/1999 Analyzed: 09/13/1999 14:46

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Naphthalene	5.05	5.35	6.00	6.00	84.2	89.2	5.8	50-150	35		
Phenanthrene	5.26	5.40	6.00	6.00	87.7	90.0	2.6	50-150	35		
Pyrene	5.73	5.80	6.00	6.00	95.5	96.7	1.2	50-150	35		
Chrysene	5.72	5.80	6.00	6.00	95.3	96.7	1.5	50-150	35		
Benzo(a)pyrene	5.59	5.79	6.00	6.00	93.2	96.5	3.5	50-150	35		
Surrogate(s)											
1-Methyl naphthalene	12.2	12.6	15	15	81.3	84.0		50-150			

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

Test Method: 8310
Prep Method: 3510/8310

Legend & Notes

Polynuclear Aromatic Hydrocarbons (PNA)

Analysis Flags

rl

Reporting limits raised due to reduced sample size.

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 #: 3190

Project: Peerless

Site: 2021 Brush St.
Oakland, CA

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-1	Water	08/26/1999 13:50	1
MW-2	Water	08/26/1999 12:50	2
MW-3	Water	08/26/1999 11:35	3
MW-4	Water	08/26/1999 12:15	4

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

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**MW-1**	Lab Sample ID:	**1999-08-0453-001**
Project:	3190 Peerless	Received:	08/27/1999 14:26
Site:	2021 Brush St. Oakland, CA	Extracted:	09/01/1999 12:26
Sampled:	08/26/1999 13:50	QC-Batch:	1999/09/01-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	81	50	ug/L	1.00	09/01/1999 12:26	
Benzene	3.5	0.50	ug/L	1.00	09/01/1999 12:26	
Toluene	7.9	0.50	ug/L	1.00	09/01/1999 12:26	
Ethyl benzene	3.2	0.50	ug/L	1.00	09/01/1999 12:26	
Xylene(s)	15	0.50	ug/L	1.00	09/01/1999 12:26	
MTBE	ND	5.0	ug/L	1.00	09/01/1999 12:26	
Surrogate(s)						
Trifluorotoluene	98.9	58-124	%	1.00	09/01/1999 12:26	
4-Bromofluorobenzene-FID	85.1	50-150	%	1.00	09/01/1999 12:26	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0453

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

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**MW-2**	Lab Sample ID:	**1999-08-0453-002**
Project:	3190 Peerless	Received:	08/27/1999 14:26
Site:	2021 Brush St. Oakland, CA	Extracted:	09/01/1999 13:21
Sampled:	*08/26/1999 12:50*	QC-Batch:	1999/09/01-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	8600	2500	ug/L	50.00	09/01/1999 13:21	g
Benzene	ND	25	ug/L	50.00	09/01/1999 13:21	
Toluene	ND	25	ug/L	50.00	09/01/1999 13:21	
Ethyl benzene	ND	25	ug/L	50.00	09/01/1999 13:21	
Xylene(s)	ND	25	ug/L	50.00	09/01/1999 13:21	
MTBE	14000	250	ug/L	50.00	09/01/1999 13:21	
Surrogate(s)						
Trifluorotoluene	105.1	58-124	%	1.00	09/01/1999 13:21	
4-Bromofluorobenzene-FID	90.3	50-150	%	1.00	09/01/1999 13:21	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0453

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

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**MW-3**	Lab Sample ID:	**1999-08-0453-003**
Project:	3190 Peerless	Received:	08/27/1999 14:26
Site:	2021 Brush St. Oakland, CA	Extracted:	08/31/1999 18:32
Sampled:	08/26/1999 11:35	QC-Batch:	1999/08/31-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	08/31/1999 18:32	
Benzene	2.5	0.50	ug/L	1.00	08/31/1999 18:32	
Toluene	3.0	0.50	ug/L	1.00	08/31/1999 18:32	
Ethyl benzene	0.87	0.50	ug/L	1.00	08/31/1999 18:32	
Xylene(s)	4.0	0.50	ug/L	1.00	08/31/1999 18:32	
MTBE	ND	5.0	ug/L	1.00	08/31/1999 18:32	
Surrogate(s)						
Trifluorotoluene	98.0	58-124	%	1.00	08/31/1999 18:32	
4-Bromofluorobenzene-FID	88.2	50-150	%	1.00	08/31/1999 18:32	

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

Attn.: Ian T. Reed

Test Method: 8015M
8020

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID:	**MW-4**	Lab Sample ID:	**1999-08-0453-004**
Project:	3190 Peerless	Received:	08/27/1999 14:26
Site:	2021 Brush St. Oakland, CA	Extracted:	08/31/1999 18:59
Sampled:	08/26/1999 12:15	QC-Batch:	1999/08/31-01.01
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	08/31/1999 18:59	
Benzene	ND	0.50	ug/L	1.00	08/31/1999 18:59	
Toluene	ND	0.50	ug/L	1.00	08/31/1999 18:59	
Ethyl benzene	0.88	0.50	ug/L	1.00	08/31/1999 18:59	
Xylene(s)	3.6	0.50	ug/L	1.00	08/31/1999 18:59	
MTBE	ND	5.0	ug/L	1.00	08/31/1999 18:59	
Surrogate(s)						
Trifluorotoluene	99.6	58-124	%	1.00	08/31/1999 18:59	
4-Bromofluorobenzene-FID	87.7	50-150	%	1.00	08/31/1999 18:59	

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 # 1999/08/31-01.01**

MB: 1999/08/31-01.01-001

Date Extracted: 08/31/1999 06:20

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	08/31/1999 06:20	
Benzene	ND	0.5	ug/L	08/31/1999 06:20	
Toluene	ND	0.5	ug/L	08/31/1999 06:20	
Ethyl benzene	ND	0.5	ug/L	08/31/1999 06:20	
Xylene(s)	ND	0.5	ug/L	08/31/1999 06:20	
MTBE	ND	5.0	ug/L	08/31/1999 06:20	
Surrogate(s)					
Trifluorotoluene	98.6	58-124	%	08/31/1999 06:20	
4-Bromofluorobenzene-FID	83.2	50-150	%	08/31/1999 06:20	

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 # 1999/09/01-01.01**

MB: 1999/09/01-01.01-001

Date Extracted: 09/01/1999 08:39

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	09/01/1999 08:39	
Benzene	ND	0.5	ug/L	09/01/1999 08:39	
Toluene	ND	0.5	ug/L	09/01/1999 08:39	
Ethyl benzene	ND	0.5	ug/L	09/01/1999 08:39	
Xylene(s)	ND	0.5	ug/L	09/01/1999 08:39	
MTBE	ND	5.0	ug/L	09/01/1999 08:39	
Surrogate(s)					
Trifluorotoluene	113.2	58-124	%	09/01/1999 08:39	
4-Bromofluorobenzene-FID	93.2	50-150	%	09/01/1999 08:39	

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 # 1999/08/31-01.01**

LCS: 1999/08/31-01.01-002 Extracted: 08/31/1999 06:47 Analyzed: 08/31/1999 06:47

LCSD: 1999/08/31-01.01-003 Extracted: 08/31/1999 07:40 Analyzed: 08/31/1999 07:40

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	471	561	500	500	94.2	112.2	17.4	75-125	20		
Benzene	103	108	100.0	100.0	103.0	108.0	4.7	77-123	20		
Toluene	105	113	100.0	100.0	105.0	113.0	7.3	78-122	20		
Ethyl benzene	99.1	107	100.0	100.0	99.1	107.0	7.7	70-130	20		
Xylene(s)	292	315	300	300	97.3	105.0	7.6	75-125	20		
Surrogate(s)											
Trifluorotoluene	538	577	500	500	107.6	115.4		58-124			
4-Bromofluorobenzene-FI	470	530	500	500	94.0	106.0		50-150			

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 # 1999/09/01-01.01**

LCS: 1999/09/01-01.01-002 Extracted: 09/01/1999 06:40 Analyzed: 09/01/1999 06:40

LCSD: 1999/09/01-01.01-003 Extracted: 09/01/1999 07:33 Analyzed: 09/01/1999 07:33

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	488	504	500	500	97.6	100.8	3.2	75-125	20		
Benzene	113	107	100.0	100.0	113.0	107.0	5.5	77-123	20		
Toluene	113	108	100.0	100.0	113.0	108.0	4.5	78-122	20		
Ethyl benzene	111	105	100.0	100.0	111.0	105.0	5.6	70-130	20		
Xylene(s)	330	312	300	300	110.0	104.0	5.6	75-125	20		
Surrogate(s)											
Trifluorotoluene	577	557	500	500	115.4	111.4		58-124			
4-Bromofluorobenzene-FI	443	497	500	500	88.6	99.4		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.

Diesel

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 #: 3190

Project: Peerless

Site: 2021 Brush St.
Oakland, CA

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-1	Water	08/26/1999 13:50	1
MW-2	Water	08/26/1999 12:50	2
MW-3	Water	08/26/1999 11:35	3
MW-4	Water	08/26/1999 12:15	4

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

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

Diesel

Sample ID:	**MW-1**	Lab Sample ID:	**1999-08-0453-001**
Project:	3190 Peerless	Received:	08/27/1999 14:26
Site:	2021 Brush St. Oakland, CA	Extracted:	08/30/1999 09:00
Sampled:	08/26/1999 13:50	QC-Batch:	1999/08/30-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	08/30/1999 16:49	
Surrogate(s)						
o-Terphenyl	93 9	60-130	%	1.00	08/30/1999 16:49	

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

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

Diesel

Sample ID:	**MW-2**	Lab Sample ID:	**1999-08-0453-002**
Project:	3190 Peerless	Received:	08/27/1999 14:26
Site:	2021 Brush St. Oakland, CA	Extracted:	08/30/1999 09:00
Sampled:	08/26/1999 12:50	QC-Batch:	1999/08/30-01.10
Matrix:	Water		

Sample/Analysis Flag: shc (See Legend & Note section)

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	1200	50	ug/L	1.00	08/30/1999 17:36	ndp
Surrogate(s)						
o-Terphenyl	144.8	60-130	%	1.00	08/30/1999 17:36	

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

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

Diesel

Sample ID:	**MW-3**	Lab Sample ID:	**1999-08-0453-003**
Project:	3190 Peerless	Received:	08/27/1999 14:26
Site:	2021 Brush St. Oakland, CA	Extracted:	08/30/1999 09:00
Sampled:	08/26/1999 11:35	QC-Batch:	1999/08/30-01.10
Matrix:	Water		

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

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	63	ug/L	1.25	08/30/1999 18:24	
Surrogate(s)						
o-Terphenyl	109.8	60-130	%	1.25	08/30/1999 18:24	

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

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

Diesel

Sample ID:	**MW-4**	Lab Sample ID:	**1999-08-0453-004**
Project:	3190 Peerless	Received:	08/27/1999 14:26
Site:	2021 Brush St. Oakland, CA	Extracted:	08/30/1999 09:00
Sampled:	08/26/1999 12:15	QC-Batch:	1999/08/30-01.10
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	420	50	ug/L	1.00	08/30/1999 19:11	ndp
Surrogate(s)						
o-Terphenyl	103.3	60-130	%	1.00	08/30/1999 19:11	

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

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

Batch QC Report
Diesel

Method Blank **Water** **QC Batch # 1999/08/30-01.10**

MB: 1999/08/30-01.10-001 Date Extracted: 08/30/1999 09:00

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Diesel	ND	50	ug/L	08/30/1999 12:26	
Surrogate(s)					
o-Terphenyl	86.0	60-130	%	08/30/1999 12:26	

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

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

Batch QC Report

Diesel

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 1999/08/30-01.10**

LCS: 1999/08/30-01.10-002 Extracted: 08/30/1999 09:00 Analyzed: 08/30/1999 12:16
LCSD: 1999/08/30-01.10-003 Extracted: 08/30/1999 09:00 Analyzed: 08/30/1999 12:49

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Diesel	901	1010	1250	1250	72.1	80.8	11.4	60-130	25		
Surrogate(s)											
o-Terphenyl	20.2	24.5	20.0	20.0	101.0	122.5		60-130			

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

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

Legend & Notes

Diesel

Analysis Flags

rl

Reporting limits raised due to reduced sample size.

shc

Surrogate recoveries biased high due to hydrocarbon co-elution

Analyte Flags

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

4 - 1 Liter
3 - VOAs

99-08-0453

47687

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 Reed (PHONE NO.) (925) 820-9391

PROJECT NAME Peerless JOB NO. 3190

ADDRESS 2021 Brush Street, Oakland, CA DATE 8-26-99

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS

Analyze the sample with the highest TPH-D concentration for PNA's by EPA Method 8310

SAMPLE ID	MATRIX	NO OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-GASOLINE (EPA 5030/8015)	TPH-DIESEL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	PURGEABLE AROMATICS (EPA 602/8020)	VOLATILE ORGANICS (EPA 624/8240)	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)	ORGANOCHLORINE HERBICIDES (EPA 8150)	FUEL OXYGENATES (EPA 8260)					COMPOSITE
MW-1	5-26 water	7	X		X																
MW-2	1200	7	X		X																
MW-3	1135	7	X		X																
MW-4	1210	7	X		X																

RELINQUISHED BY: Ian Reed (signature) Ian T. Reed (printed name) Company: TSE

RECEIVED BY: (signature) (time) 8/27 13:30 (printed name) (date) Company:

RELINQUISHED BY: (signature) (time) (printed name) (date) Company:

RECEIVED BY LABORATORY: (signature) 1426 (time) 8/27/99 (printed name) (date) Company: CL

COMMENTS: 5-day-TAT.