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January 16, 1995

BSK JOB NO. P92270.3

American Brass and Iron Foundry
7825 San Leandro Street
Oakland, California 94621

Attention: Mr. David Robinson
Environmental Engineer

Subject: Sixth Quarterly Groundwater
Monitoring Report - December 1994
American Brass and Iron Foundry
7825 San Leandro Street
Oakland, California

As requested and authorized, BSK & Associates has performed the sixth quarterly monitoring of four shallow groundwater Monitoring Wells, MW-1 through MW-4, at American Brass and Iron Foundry (AB & I), located at 7825 San Leandro Street, Oakland, California (Site). This report presents the project background, groundwater data obtained during this sampling event as well as previous data, conclusions based on this quarter's data, and recommendations for further action, as appropriate. The Site location is shown on the Vicinity Map, Figure 1.

BSK appreciates this opportunity to continue to be of service to American Brass & Iron. If there are questions or comments regarding this report, please contact the undersigned.

Respectfully submitted,
BSK & Associates

Martin B. Cline
Staff Geologist

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AYE\MC:hhc
(ENVP92270Q J13)

Distribution:
American Brass & Iron (3 copies)

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**SIXTH QUARTERLY GROUNDWATER
MONITORING REPORT - DECEMBER 1994
AMERICAN BRASS & IRON FOUNDRY
7825 SAN LEANDRO STREET
OAKLAND, CALIFORNIA**

INTRODUCTION

This quarterly monitoring report has been prepared to meet Alameda County Department of Environmental Health (ACDEH) concerns regarding the status of groundwater at the Site following the removal of four UST during 1991 and 1992, as initially presented in their letter of October 2, 1992, to David Robinson of American Brass & Iron Foundry (AB & I).

BACKGROUND

American Brass & Iron Foundry has been operating at its present location for more than eighty years. AB & I's current activities include the manufacture of cast iron pipe and fittings. The facility accepts scrap iron and steel which it stockpiles on-site and utilizes in its processes.

AB & I maintained three USTs to store petroleum products and one UST to store solvent. AB & I removed the four USTs between August 1991 and June 1992. Removal and disposal of two of the USTs (the 8,000-gallon capacity gasoline tank and the 550-gallon capacity leaded gasoline tank) were described in two consultant's (Levine-Fricke) reports. Documentation of the removal and disposal of the two remaining USTs (the 8,000-gallon capacity 1,1,1-TCA UST and the 10,000-gallon capacity diesel UST) was reported by AB & I.

In general, analytical results for the soil and groundwater samples collected adjacent to the tanks during the tank removal projects showed detectable concentrations of Total Petroleum Hydrocarbons as gasoline (TPHg), Total Petroleum Hydrocarbons as diesel (TPHd), 1,1-DCA, Chloroethane, and 1,1,1-TCA. Affected soil at each former tank location was excavated until confirmation samples indicated the chemicals of concern were at relatively low concentrations, or to where an obstruction made further excavation impossible or hazardous.

BSK & Associates installed four shallow groundwater monitoring wells at the Site in February 1993, one well per former tank location. Soil and groundwater samples revealed soil contamination in the vicinities of the former 500-gallon gasoline tank and the TCA solvent tank, and contaminated groundwater at these two locations as well as the former diesel tank location. The well installation and sampling findings are presented in BSK Report, P92270.3, dated April 30, 1993.

SIXTH QUARTERLY MONITORING ACTIVITIES - DECEMBER 1994

General

Sixth quarterly monitoring of groundwater monitoring wells MW-1, MW-2, MW-3 and MW-4 was performed by BSK personnel on December 16, 1994, in accordance with the Groundwater Well Monitoring portion of our Proposal PR93204.3 of July 29, 1993. Field procedures and observations are provided in the following text and figures.

Field Work

Water samples from site wells were obtained after purging each well of approximately four casing volumes, and allowing eighty percent recovery. Observation of water level, and for immiscible product, was performed using an electric sounder and clear point-source bailer prior to purging. The water level was recorded to the nearest 1/100th of a foot. During purging, the water parameters: pH, temperature and electrical conductivity were monitored and recorded at regular intervals on Well Field Logs. The Well Field Logs are presented in Figures 3 through 6. Water samples for analytical testing were obtained in the order of most to least volatility. Samples were obtained via point-source bailer (Teflon^R or polyethylene disposable), and transferred to the appropriate sample containers, with preservative as needed. Samples designated for the analysis of lead were field-filtered using a high-capacity in-line 0.45 micron filter prior to preservation. The samples were labeled and placed into cooler with water-ice or blue ice for delivery to our State-certified analytical laboratory.

Sampling, purging and decontamination wastewater was contained on-site in 55-gallon DOT drums provided by AB & I. Each container was labeled according to the wastewater source, date of accumulation and owner.

Analytical Testing

Analytical testing of the water samples obtained from the site were performed by BSK State-certified Analytical laboratories in Fresno, California.

The analyses performed for each contaminant type are those specified by the Tri-Regional Water Board Staff Recommendations of August 10, 1992. The analyses are:

Well MW-1

TPHdiesel by GCFID-3510

BTEX by Method 602

Well MW-2

Chlorinated Solvent by EPA Method 601

Oil and Grease by Methods 5520 C&F

TPHgasoline by GCFID-5030

BTEX by EPA Method 602

Well MW-3

TPHgasoline by GCFID-5030

BTEX by Method 602

Well MW-4

TPHgasoline by GCFID-5030

BTEX by Method 602

Total Lead

Samples were submitted to the analytical laboratory utilizing Chain-Of-Custody documentation and procedure.

The results of the chemical analyses of groundwater for this quarter, and previous quarterly test results, are summarized in the following tables; water analyses results and related Action Levels are reported in Micrograms per liter (ug/l). The Chemical Test Data Sheets and project Chain-of-Custody documentation are presented in Appendix "A" of this report.

TABLE 1 - ANALYTICAL RESULTS, GROUNDWATER SAMPLES

**Benzene, Toulene, Ethylbenzene and Xylenes (BTEX)
Results in micrograms per liter (ug/l)**

CONSTITUENTS				
Sample Location (Action Level)	Benzene (1) ₁	Toluene (100) ₂	Ethylbenzene (680) ₁	Xylenes (1750) ₁
SAMPLE DATE: 12/16/94 (Sixth Quarter)				
MW-1	0.6	ND	ND	ND
MW-2	ND	18	ND	ND
MW-3	ND	ND	ND	ND
MW-4	0.4	0.4	ND	1.2
SAMPLE DATE: 09/09/94 (Fifth Quarter)				
MW-1	ND	ND	ND	ND
MW-2	ND	ND	ND	ND
MW-3	ND	ND	ND	ND
MW-4	0.4	ND	0.7	1.3
SAMPLE DATE: 06/10/94 (Fourth Quarter)				
MW-1	ND	ND	ND	ND
MW-2	ND	ND	ND	ND
MW-3	ND	ND	ND	ND
MW-4	4.3	ND	1.8	4.3
SAMPLE DATE: 03/04/94 (Third Quarter)				
MW-1	1.1	ND	ND	ND
MW-2	ND	ND	ND	3.6
MW-3	ND	ND	ND	ND
MW-4	ND	0.9	ND	1.1
SAMPLE DATE: 12/03/93 (Second Quarter)				
MW-1	ND	ND	ND	ND
MW-2	ND	250	19	5.1
MW-3	ND	ND	ND	ND
MW-4	ND	ND	1.4	2.8
SAMPLE DATE: 08/20/93 (First Quarter)				
MW-1	2.2	3.7	4.5	17
MW-2	2.9	4.2	6.3	25
MW-3	7.2	9.3	8.6	31
MW-4	5.6	4.9	7.5	22
SAMPLE DATE: 03/10/93 (Initial Well Installation Sampling)				
MW-1	0.6	ND	ND	ND
MW-2	ND	0.8	ND	ND
MW-3	ND	ND	ND	ND
MW-4	1.0	2.0	7.6	19

ND - None Detected
 1 - California Department Of Health Services Drinking Water Standard, Revised 10/23/91
 2 - California DOHS Action Level, 7/1/92



TABLE 2 - ANALYTICAL RESULTS, GROUNDWATER SAMPLES

**Total Petroleum Hydrocarbons (TPH) as Gasoline and Diesel,
Total and Hydrocarbon Oil and Grease, Total Lead,
and Volatile Halocarbons
Results in micrograms per liter (ug/l)**

Sample Location (Action Level)	CONSTITUENTS					
	TPH Gasoline (NA)	TPH Diesel (100) ₁	Total Oil & Grease (NA)	Hydrocarbon Oil & Grease (NA)	Total Lead (50)	Volatile Halocarbons (Determined by Compound)
SAMPLE DATE: 12/16/94 (Sixth Quarter)						
MW-1	--	180(5)	--	--	--	--
MW-2	130(4)	--	ND	ND	--	ND
MW-3	ND	--	--	--	--	--
MW-4	100	--	--	--	86	--
SAMPLE DATE: 09/09/94 (Fifth Quarter)						
MW-1	--	ND	--	--	--	--
MW-2	830(2)	--	2	2	--	Chloroethane - 1.4(NA) 1,1-Dichloroethane - 0.8(0.5)
MW-3	ND	--	--	--	--	--
MW-4	150(2)	--	--	--	ND	--
SAMPLE DATE: 06/10/94 (Fourth Quarter)						
MW-1	--	490	--	--	--	--
MW-2	920	--	2,000	2,000	--	Chloroethane - 4.2(NA) 1,1-Dichloroethane - 0.6(0.5) ₃ 1,1,1-Trichloroethane - 0.8(200) ₃
MW-3	ND	--	--	--	--	--
MW-4	460	--	--	--	ND	--
SAMPLE DATE: 03/04/94 (Third Quarter)						
MW-1	--	710	--	--	--	--
MW-2	420	--	ND	ND	--	Chloroethane - 3.7(NA)
MW-3	ND	--	--	--	--	--
MW-4	50	--	--	--	ND	--
SAMPLE DATE: 12/03/93 (Second Quarter)						
MW-1	--	3200 _{1,4}	--	--	--	--
MW-2	900	--	ND	ND	--	Chloroethane - 3.8(NA)
MW-3	80	--	--	--	--	--
MW-4	1100	--	--	--	ND	--
SAMPLE DATE: 08/20/93 (First Quarter)						
MW-1	--	2100 ₍₁₎	--	--	--	--
MW-2	720 ₍₂₎	--	ND	ND	--	Chloroethane - 4.7(NA)
MW-3	190	--	--	--	--	--
MW-4	350	--	--	--	ND	--
SAMPLE DATE: 03/10/93 (Initial Well Installation Sampling)						
MW-1	--	830	--	--	--	--
MW-2	920	--	1.0	ND	--	Bromoform - 0.6(100) ₂ Chloroethane - 5.0(NA) 1,1-Dichloroethane - 1.7(0.5) ₃ 1,1,1-Trichloroethane - 6.7(200) ₃
MW-3	ND	--	--	--	--	--
MW-4	1800	--	--	--	58.0	--

- ND - None Detected
- NA - Not Applicable
- - Not Tested
- 1 - 1980 EPA 10-Day Suggested No Adverse Response Level (SNARL)
- 2 - EPA Drinking Water Standard, Revised 7/1/92
- 3 - California Department of Health Services Drinking Water Standards, Revised 10/23/91
- (1) - "Not Diesel Like," as reported by analytical laboratory
- (2) - "Not Gasoline-Like," as reported by analytical laboratory
- (3) - "Appears to be heavier than diesel," as reported by analytical laboratory
- (4) - Chromatography for this sample is described as inconsistent with the gasoline standard
- (5) - Chromatography for this sample is described as inconsistent with the diesel standard

Regional Hydrogeology

The American Brass & Iron facility is located on the San Leandro alluvial cone of the East Bay Plain. The upper 400 feet of the San Leandro Cone comprises discontinuous beds of sand and gravel which extend westward under San Francisco Bay, and are capped by confining clay layers. Groundwater in this area is used mainly for industrial and irrigation purposes, but is suitable in quality for most uses. Shallow aquifers of limited extent located throughout the Bay Plain, are often perched and unconfined, and typically yield less than 35 gallons per minute from silty sands. These aquifers are often tapped by wells less than 50 feet in depth and used for local irrigation. These minor aquifers are most susceptible to groundwater pollution (Maslonowski, 1984).

Site Hydrogeology

Groundwater was initially encountered in borings for well installations from 8 to 12 feet in depth at the site. Water levels stabilized at a depth below present grade of 5 to 7 feet.

Based upon the groundwater elevations in the four on-site groundwater monitoring wells the direction of groundwater flow is generally in a north to northeast direction. The calculated hydraulic gradient for this quarter is approximately 0.003 ft/ft. The groundwater elevation in each of the four on-site wells has risen by 0.9 to 1.5 feet since the September 1994 readings. A summary of the groundwater data collected to date is listed below in Table 3.

TABLE 3 - SUMMARY OF GROUNDWATER DATA

Well Number (Date Measured)	Groundwater Elevation (Feet)	Hydraulic Gradient (ft/ft)	Direction of Groundwater Flow
(12/16/94) MW-1 MW-2 MW-3 MW-4	3.65 3.30 2.69 2.48	0.003	Northeast
(9/9/94) MW-1 MW-2 MW-3 MW-4	2.14 2.38 1.74 1.43	0.0014-0.008	North-Northwest
(6/10/94) MW-1 MW-2 MW-3 MW-4	2.55 2.73 2.12 1.78	0.002-0.008	North-Northwest
(3/4/94) MW-1 MW-2 MW-3 MW-4	1.29 3.14 2.54 2.25	0.004-0.005	West-Northeast <i>N-NW</i>
(12/3/93) MW-1 MW-2 MW-3 MW-4	2.04 2.39 1.72 1.47	0.002-0.008	West-Northeast
(8/20/93) MW-1 MW-2 MW-3 MW-4	2.05 2.30 1.55 1.29	0.008-0.015	North
(3/10/93) MW-1 MW-2 MW-3 MW-4	2.29 3.41 2.53 3.45	0.004	North-Northwest

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on this sixth quarterly groundwater analysis, Petroleum Hydrocarbons as diesel (TPH-d) were detected at levels of 180 ug/l in groundwater samples collected from the groundwater Monitor Well MW-1. Petroleum Hydrocarbons as gasoline (TPH-g) were detected at levels of 130 ug/l and 100 ug/l in groundwater samples collected from the groundwater Monitor Wells MW-2 and MW-4, respectively. Petroleum Hydrocarbons as gasoline were reported as none detected in the groundwater samples collected from MW-3. Benzene was detected at 0.6 ug/l and Toluene at 18 ug/l in the groundwater samples collected from MW-1 and MW-2, respectively. Total and Hydrocarbon Oil and Grease were reported as none detected in groundwater samples collected from MW-2. Total Lead was detected at 86 ug/l in the groundwater sample collected from MW-4. No Volatile halocarbons were detected in the water sample collected from MW-2.

The direction of flow of the groundwater as measured in the four on-site wells appears to be locally and seasonally variable. The variation in gradient and direction of flow is illustrated on Table 3. The groundwater elevations in the four on-site wells is illustrated on Figure 8.

Recommendations

Assessment of the lateral extent of shallow groundwater contamination should be considered in the vicinity of Wells MW-2 and MW-4. The ACDEH has indicated that quarterly monitoring of Well MW-1 would be sufficient at this time (ACDEH letter to AB & I of June 18, 1993).

Quarterly monitoring of the four wells installed should continue to be performed to assess contaminant concentration fluctuation with respect to groundwater level, gradient and flow direction. We recommend that total lead testing continue to be performed on MW-4.

LIMITATIONS

This groundwater monitoring well report has been prepared for the exclusive use of American Brass & Iron Foundry Company. Unauthorized use of or reliance on the information contained in this report by others, unless given express written consent by BSK & Associates, is strictly prohibited.

The findings and conclusions presented in this report are based on field observations, and on data obtained from the sources listed in this report. This report has been prepared in accordance with generally accepted methodologies and standards of practice for the area. No other warranty, either expressed or implied, is made as to the findings or conclusions included in this report.

The findings of this report are valid as of the present. The passage of time, natural processes or human intervention on the property or adjacent properties, and changes in the regulations can cause changed conditions which can invalidate the findings and conclusions in this report.

This report is neither certification nor guarantee that the property is free of, or contains hazardous substance contamination, other than that mentioned in the report.

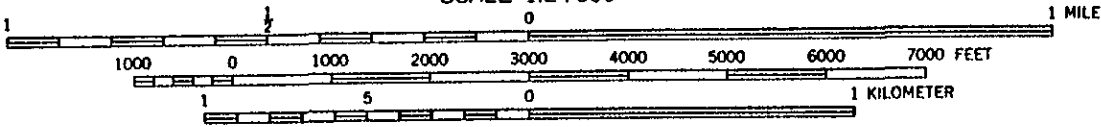
DISTRIBUTION

A copy of this report should be forwarded by the client to the Alameda County Department of Environmental Health for their review. An extra copy of this report has presented to American Brass and Iron Foundry for this purpose.

Respectfully submitted,
BSK & Associates



SCALE 1:24 000



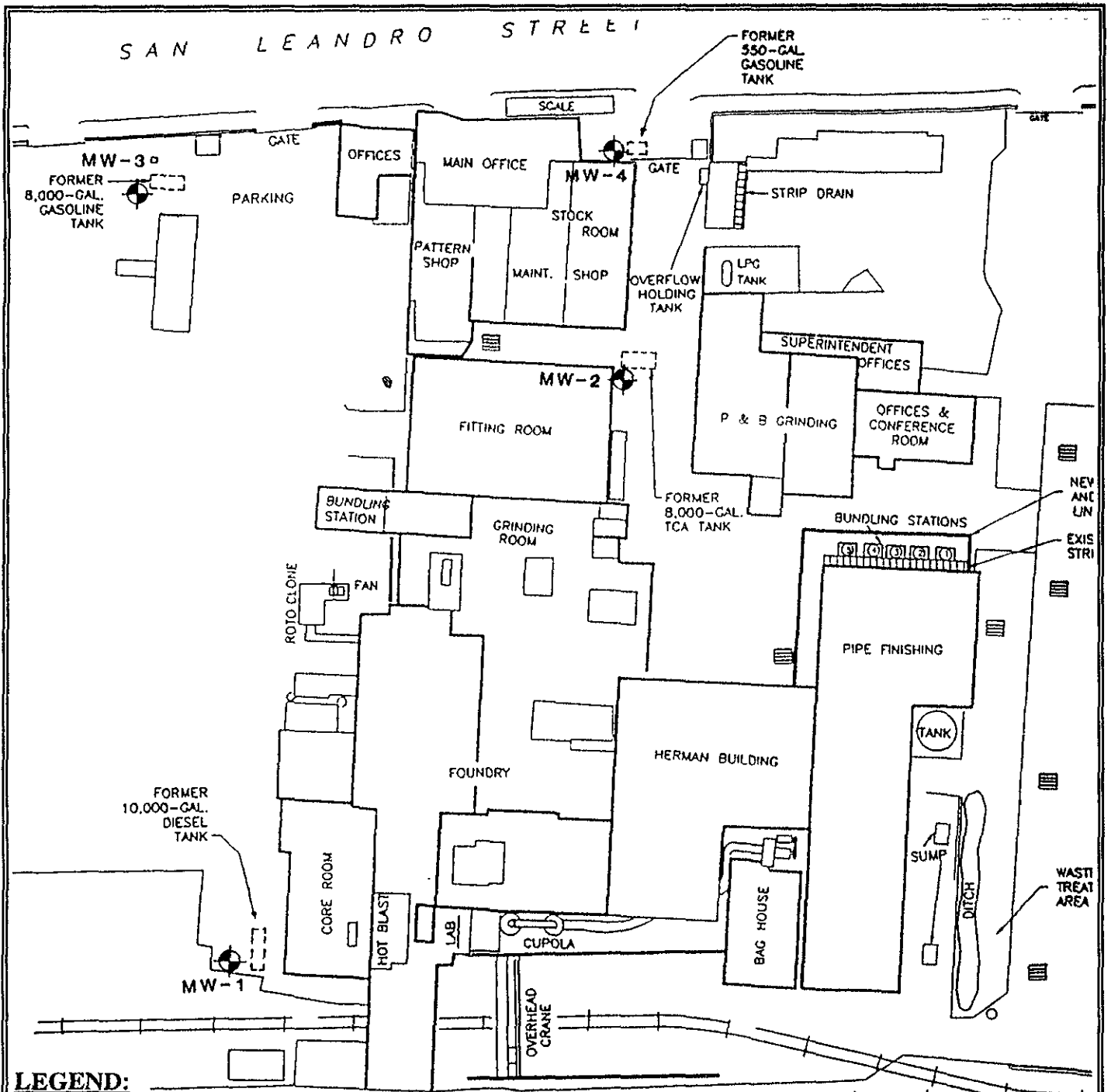
CONTOUR INTERVAL 20 FEET
 DOTTED LINES REPRESENT 5-FOOT CONTOURS
 NATIONAL GEODETIC VERTICAL DATUM OF 1929
 DEPTH CURVES IN FEET—DATUM IS MEAN LOWER LOW WATER

Source: USGS 7.5 Minute Topographic Maps, Oakland East and San Leandro Quadrangles

**SIXTH QUARTERLY
 GROUNDWATER MONITORING
 AMERICAN BRASS & IRON
 7825 SAN LEANDRO STREET
 OAKLAND, CALIFORNIA**

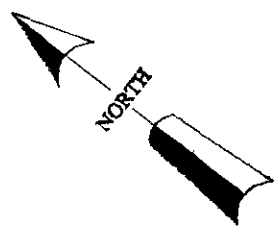
**VICINITY MAP
 BSK Job No.P92270.3
 DECEMBER 1994
 FIGURE: 1**

**BSK
 & ASSOCIATES**



LEGEND:

⊙ - Groundwater Monitoring Well



Scale: 1" = 80'

**SIXTH QUARTERLY
GROUNDWATER MONITORING
AMERICAN BRASS & IRON
7825 SAN LEANDRO STREET
OAKLAND, CALIFORNIA**

**SITE PLAN
BSK Job No.P92270.3
DECEMBER 1994
FIGURE: 2**

**BSK
& ASSOCIATES**

WELL FIELD LOG

Well Observation: x Date: 12/16/94
 Sample Collection: x Date: 12/16/94

Project Name: American Brass & Iron
 Location: Oakland, CA
 Personnel: FRG
 Weather: --

WELL INFORMATION:

Well Number	MW-1	Date Purged	12/16/94
Depth to Water - feet(TOC)	5.87	Purge Method	Clear Point-Source Bailer
Well Depth (feet)	20		
Water Volume (gallons)	2.4	Purge Begin	10:14
Reference Elevation - feet(TOC)	+9.52	Purge End	10:27
Groundwater Elevation (feet)	+3.65	Purge Rate	0.8 GPM
Measurement Technique	Solinst Electric Water Sounder		

IMMISCIBLE LAYERS:

Top: None observed, no odor
 Bottom: Not observed, clay colloids
 Detection Method: Visual
 Collection Method: Point-Source Bailer

WELL DEVELOPMENT/PURGE DATA:

TIME	VOLUME REMOVED (gallons)	ELECTRICAL CONDUCTIVITY (Micromhos)	pH	TEMP. (°F)	COLOR/COMMENTS
10:17	2.5	2040	7.96	65.0	
10:20	5.0	2170	7.90	65.0	
10:23	7.5	2250	7.83	65.0	
10:27	10.0	2260	7.83	66.0	
10:28	Depth to water: 5.93 feet				

SAMPLE COLLECTION DATA:

Sampling Equipment: Teflon Point-Source Bailer

TIME	ANALYSIS	AMOUNT/CONTAINER USED	SAMPLE INTERVAL
10:30	TPHd	1-250 ml amber glass bottles with H ₂ SO ₄	15-17'
"	BTEX	2-40 ml glass vials with Hcl	"

Field Observations: None

WELL FIELD LOG

Well Observation: x Date: 12/16/94
 Sample Collection: x Date: 12/16/94

Project Name: American Brass & Iron
 Location: Oakland, CA
 Personnel: FRG
 Weather: --

WELL INFORMATION:

Well Number	MW-2	Date Purged	12/16/94
Depth to Water - feet(TOC)	4.30	Purge Method	Submersible Pump
Well Depth (feet)	17		
Water Volume (gallons)	8.4	Purge Begin	12:23
Reference Elevation - feet(TOC)	+7.60	Purge End	12:39
Groundwater Elevation (feet)	+3.30	Purge Rate	2.1 GPM
Measurement Technique	Solinst Electric Water Sounder		

IMMISCIBLE LAYERS:

Top: None Observed
 Bottom: Grey tint, fine sand
 Detection Method: Visual
 Collection Method: Point-Source Bailer

WELL DEVELOPMENT/PURGE DATA:

TIME	VOLUME REMOVED (gallons)	ELECTRICAL CONDUCTIVITY (Micromhos)	pH	TEMP. (°F)	COLOR/COMMENTS
12:27	8.5	1830	7.09	64.0	
12:31	17.0	1900	6.99	66.0	
12:35	25.5	1900	6.94	66.0	
12:39	34.0	1900	6.93	66.0	
12:40	Depth to water: 5.20 feet				

SAMPLE COLLECTION DATA:

Sampling Equipment: Teflon Point-Source Bailer

TIME	ANALYSIS	AMOUNT/CONTAINER USED	SAMPLE INTERVAL
12:45	EPA 601	2-40 ml glass vials with HCl	±10'
"	TPH-G and BTEX	2-40 ml glass vials with HCl	"
"	Total and Hydrocarbon Oil & Grease	1-liter amber glass bottle with H ₂ SO ₄	"

Field Observations: None

WELL FIELD LOG

Well Observation: x Date: 12/16/94
 Sample Collection: x Date: 12/16/94

Project Name: American Brass & Iron
 Location: Oakland, CA.
 Personnel: FRG
 Weather: --

WELL INFORMATION:

Well Number	MW-3	Date Purged	12/16/94
Depth to Water - feet(TOC)	7.14	Purge Method	Clear Point-Source Bailer
Well Depth (feet)	19		
Water Volume (gallons)	1.8	Purge Begin	08:30
Reference Elevation - feet(TOC)	+9.83	Purge End	08:42
Groundwater Elevation (feet)	+2.69	Purge Rate	0.7 GPM
Measurement Technique	Solinst Electric Water Sounder		

IMMISCIBLE LAYERS:

Top: None
 Bottom: None
 Detection Method: Visual
 Collection Method: Clear Point-Source Bailer

WELL DEVELOPMENT/PURGE DATA:

TIME	VOLUME REMOVED (gallons)	ELECTRICAL CONDUCTIVITY (Microhmhos)	pH	TEMP. (°F)	COLOR/COMMENTS
09:21	2.0	2840	6.61	65.0	--
09:24	4.0	3000	7.13	65.0	--
09:27	6.0	3030	7.13	66.0	--
09:29	8.0	3040	7.13	66.0	--
09:30	Depth to water: 7.55 feet				

SAMPLE COLLECTION DATA:

Sampling Equipment: Teflon Point-Source Bailer

TIME	ANALYSIS	AMOUNT/CONTAINER USED	SAMPLE INTERVAL
09:35	TPH-G & BTEX	2-40 ml glass vials with HCl	± 17'

Field Observations: None

WELL FIELD LOG

Well Observation: x Date: 12/16/94
 Sample Collection: x Date: 12/16/94

Project Name: American Brass & Iron
 Location: Oakland, CA
 Personnel: FRG
 Weather: --

WELL INFORMATION:

Well Number	MW-4	Date Purged	12/16/94
Depth to Water - feet(TOC)	7.04	Purge Method	Clear Point-Source Bailer
Well Depth (feet)	26.5		
Water Volume (gallons)	3.3	Purge Begin	11:16
Reference Elevation - feet(TOC)	9.52	Purge End	11:30
Groundwater Elevation (feet)	+2.48	Purge Rate	0.9 GPM
Measurement Technique	Solinst Electric Water Sounder		

IMMISCIBLE LAYERS:

Top: None observed
 Bottom: None observed, grey
 Detection Method: Visual
 Collection Method: Clear Point-Source Bailer

WELL DEVELOPMENT/PURGE DATA:

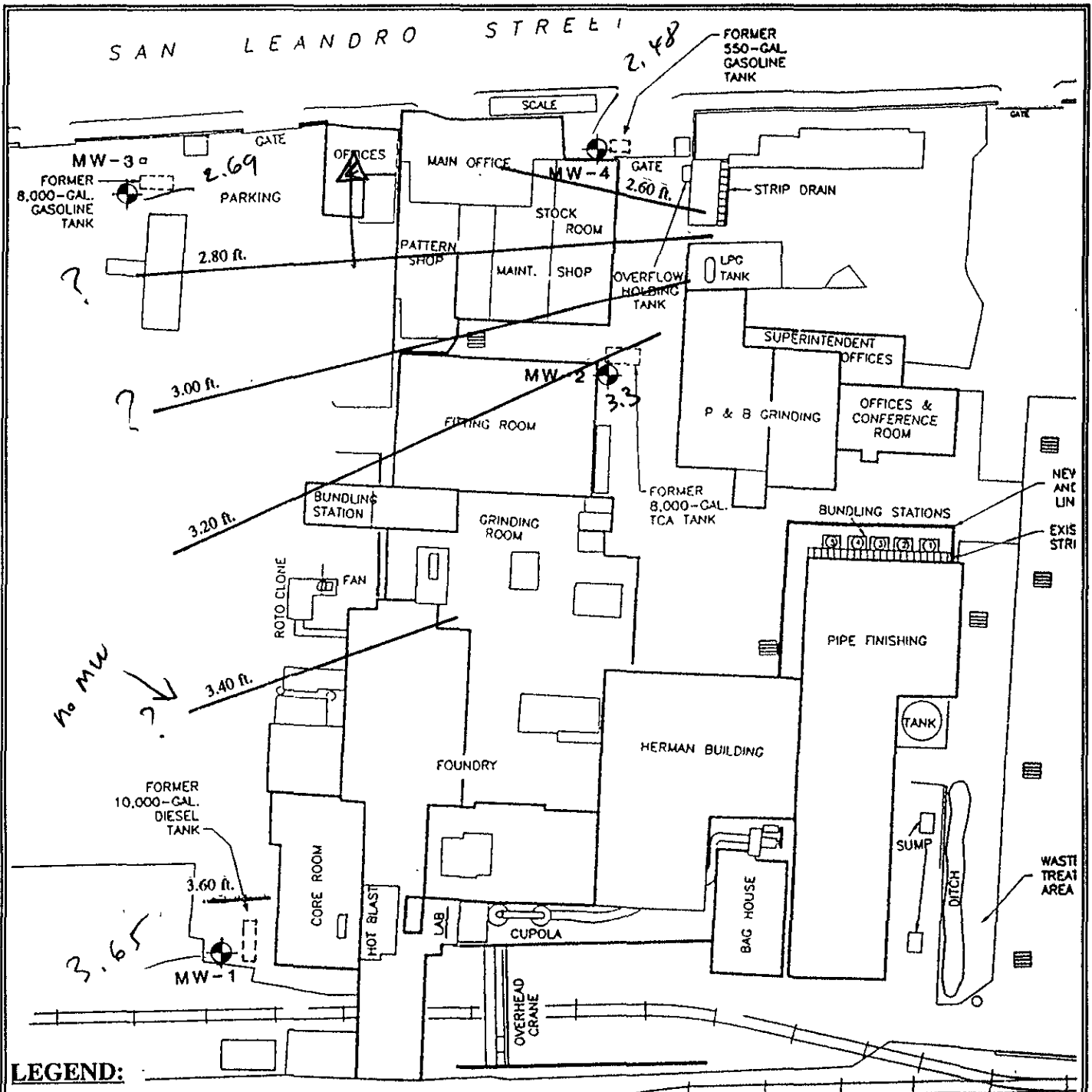
TIME	VOLUME REMOVED (gallons)	ELECTRICAL CONDUCTIVITY (Micromhos)	pH	TEMP. (°F)	COLOR/COMMENTS
11:20	3.0	700	7.76	65.0	--
11:23	6.0	660	7.78	65.0	--
11:26	9.0	660	7.47	65.0	--
11:30	12.0	660	7.46	65.0	--
11:32	Depth to Water: 7.10 feet				

SAMPLE COLLECTION DATA:

Sampling Equipment: Teflon Point-Source Bailer, sample for total lead field filtered with 0.45 micron filter

TIME	ANALYSIS	AMOUNT/CONTAINER USED	SAMPLE INTERVAL
11:35	TPH-G & BTEX	2-40 ml glass vials with HCl	±10'
"	Total Lead	1-16 oz. plastic bottle with HNO ₃	"

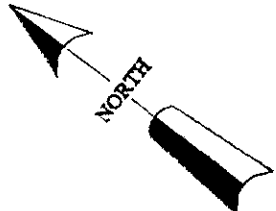
Field Observations: None



LEGEND:

- Groundwater Monitoring Well Location and Groundwater Elevation on 12/16/94
- Line of Equal Groundwater in feet Above Mean Sea Level

Scale: 1" = 80'

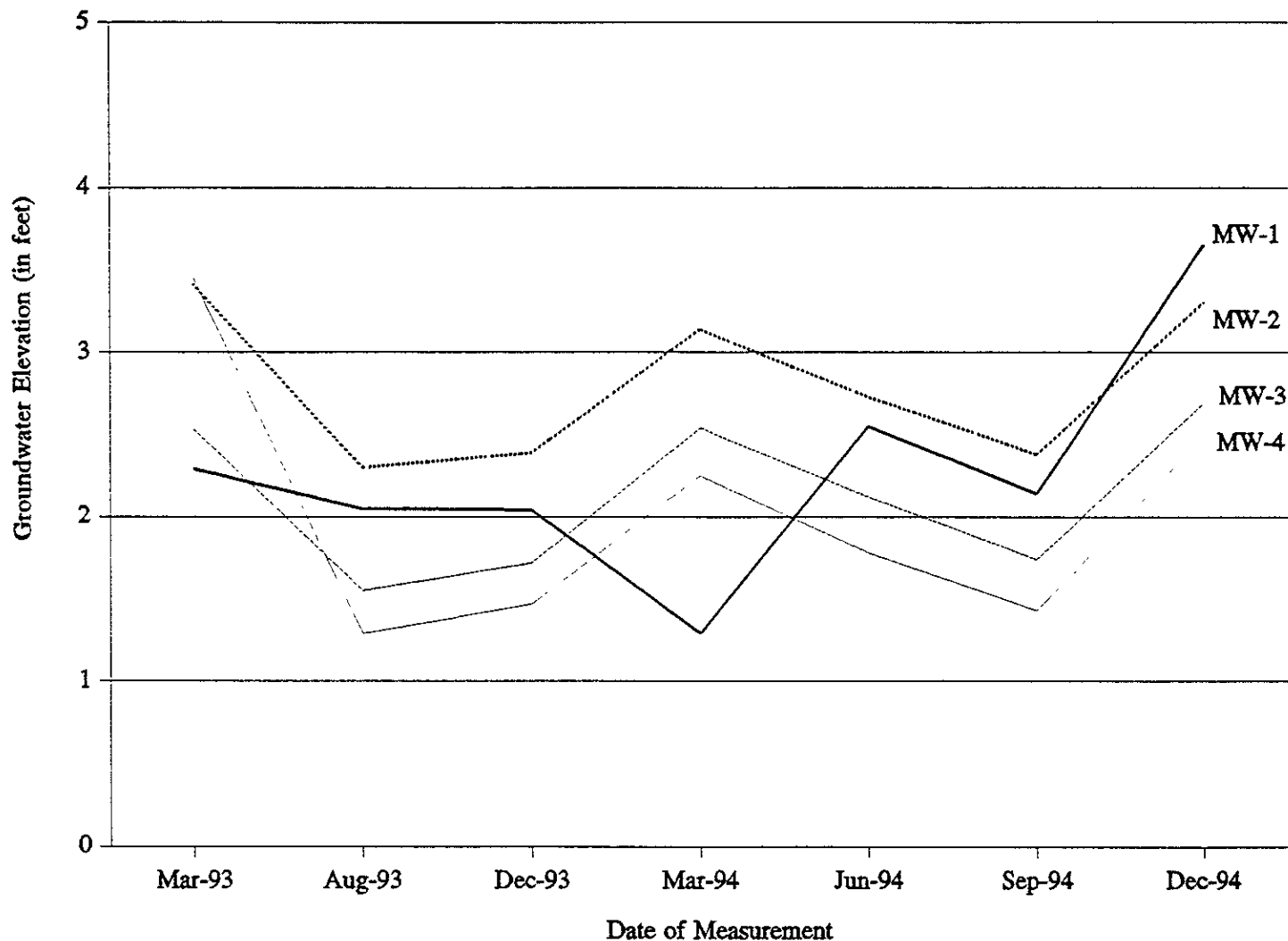


SIXTH QUARTERLY
GROUNDWATER MONITORING
AMERICAN BRASS & IRON
7825 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

**GROUNDWATER
ELEVATION CONTOUR**
BSK Job No.P92270.3
DECEMBER 1994
FIGURE: 7

BSK
& ASSOCIATES

SUMMARY OF GROUNDWATER ELEVATIONS



SUMMARY OF GROUNDWATER ELEVATIONS
MW-1, MW-2, MW-3 AND MW-4

Job No. P92270.3
December 1994
FIGURE: 8

BSK
& ASSOCIATES

APPENDIX "A"

**CHEMICAL TEST DATA SHEETS
CHAIN-OF-CUSTODY DOCUMENTS**

BSK-Pleasanton
A B & I

Date Sampled : 12/16/94
Time Sampled : 1030
Date Received : 12/20/94
Report Issue Date: 12/29/94

Case Number : Ch943539
Lab ID Number : 3539-1
Project Number : P92270.3
Sample Description: MW-1

Sample Type: LIQUID

Analyses for BTEX by EPA Method 8020

Results Reported in Micrograms per Liter (ug/L)
Date of Analysis : 12/20/94

Compound	Results	DLR
Benzene	0.6	0.3
Toluene	ND	0.3
Ethylbenzene	ND	0.3
Total Xylene Isomers	ND	0.3

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the gasoline boiling point range are reported, in accordance with the method, as gasoline.

Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel by Method DHS GC/FID.

Results Reported in Micrograms per Liter (ug/L)
Date of Analysis : 12/22/94

Analyte	Results	DLR
Total Petroleum Hydrocarbons (D)	180	50

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the diesel boiling point range are reported, in accordance with the method, as diesel.
Chromatography for this sample is described as inconsistent with the diesel standard.

LEGEND:

DLR: Detection Limit for the Purposes of Reporting.
Exceptional sample conditions or matrix interferences may result in higher detection limits.

ND: None Detected

Sy
Synthia Pigman, QA/QC Supervisor

g
Jeffrey Creager, Organics Manager

BSK-Pleasanton
A B & I

Date Sampled : 12/16/94
Time Sampled : 1245
Date Received : 12/20/94
Report Issue Date: 12/29/94

Case Number : Ch943539
Lab ID Number : 3539-2
Project Number : P92270.3
Sample Description: MW-2

Sample Type: LIQUID

Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015
Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)
Date of Analysis : 12/20/94

Compound	Results	DLR
Benzene	ND	0.3
Toluene	18	0.3
Ethylbenzene	ND	0.3
Total Xylene Isomers	ND	0.3
Total Petroleum Hydrocarbons (G)	130	50

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the gasoline boiling point range are reported, in accordance with the method, as gasoline.
Chromatography for this sample is described as inconsistent with the gasoline standard.

Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel
by Method DHS GC/FID.

Results Reported in Micrograms per Liter (µg/L)
Date of Analysis : N/A

Analyte	Results	DLR
Total Petroleum Hydrocarbons D)	--	50

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the diesel boiling point range are reported, in accordance with the method, as diesel.

LEGEND:

DLR: Detection Limit for the Purposes of Reporting.
Exceptional sample conditions or matrix interferences may result in higher detection limits.

ND: None Detected

Sel [Signature]
Cynthia Pigman, QA/QC Supervisor

[Signature]
Jeffrey Creager, Organics Manager

BSK-Pleasanton
A B & I

Date Sampled : 12/16/94
Time Sampled : 0935
Date Received : 12/20/94
Report Issue Date: 12/29/94

Case Number : Ch943539
Lab ID Number : 3539-3
Project Number : P92270.3
Sample Description: MW-3

Sample Type: LIQUID

Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015
Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)
Date of Analysis : 12/20/94

Compound	Results	DLR
Benzene	ND	0.3
Toluene	ND	0.3
Ethylbenzene	ND	0.3
Total Xylene Isomers	ND	0.3
Total Petroleum Hydrocarbons (G)	ND	50

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the gasoline boiling point range are reported, in accordance with the method, as gasoline.

Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel
by Method DHS GC/FID.

Results Reported in Micrograms per Liter (µg/L)
Date of Analysis : N/A

Analyte	Results	DLR
Total Petroleum Hydrocarbons D)	--	50

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the diesel boiling point range are reported, in accordance with the method, as diesel.

LEGEND:

DLR: Detection Limit for the Purposes of Reporting.

ND: None Detected

Exceptional sample conditions or matrix interferences may result in higher detection limits.

Sd for CP
Cynthia Pigman, QA/QC Supervisor

g
Jeffrey Creager, Organics Manager

BSK-Pleasanton
A B & I

Date Sampled : 12/16/94
Time Sampled : 1135
Date Received : 12/20/94
Report Issue Date: 12/29/94

Case Number : Ch943539
Lab ID Number : 3539-4
Project Number : P92270.3
Sample Description: MW-4

Sample Type: LIQUID

Analyses for BTEX by EPA Method 8020 and TPH(G) by EPA Method 8015
Prepared by Method 5030

Results Reported in Micrograms per Liter (ug/L)
Date of Analysis : 12/20/94

Compound	Results	DLR
Benzene	0.4	0.3
Toluene	0.4	0.3
Ethylbenzene	ND	0.3
Total Xylene Isomers	1.2	0.3
Total Petroleum Hydrocarbons (G)	100	50

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the gasoline boiling point range are reported, in accordance with the method, as gasoline.
Chromatography for this sample is described as inconsistent with the gasoline standard.

Analyses for TPH (Total Petroleum Hydrocarbons) as Diesel
by Method DHS GC/FID.

Results Reported in Micrograms per Liter (µg/L)
Date of Analysis : N/A

Analyte	Results	DLR
Total Petroleum Hydrocarbons D)	--	50

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

NOTE:
Hydrocarbons in the diesel boiling point range are reported, in accordance with the method, as diesel.

LEGEND:

DLR: Detection Limit for the Purposes of Reporting.
Exceptional sample conditions or matrix interferences
may result in higher detection limits.

ND: None Detected

Sil - for C.P.
Cynthia Pigman, QA/QC Supervisor

J. Creager
Jeffrey Creager, Organics Manager

BSK-Pleasanton
A B & I

Date Sampled : 12/16/94
Time Sampled : 1245
Date Received : 12/20/94
Date of Analysis : 12/22/94
Report Issue Date: 12/29/94

Case Number : Ch943539
Lab ID Number : 3539-2
Project Number : P92270.3
Sample Description: MW-2

Sample Type: LIQUID

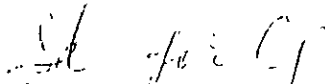
Analyses For Total Recoverable Petroleum Hydrocarbon (Oil & Grease)
By EPA Methods 413.2 & 418.1

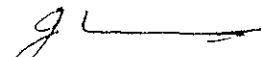
Results Reported in Milligrams Per Liter (mg/L)

Analyte	Results	DLR
Total Oil and Grease.....	ND	1
Hydrocarbon Oil and Grease	ND	1

Sample DLR = DLR x DLR Multiplier, DLR Multiplier = 1

DLR: Detection Limit for the Purposes of Reporting.
Exceptional sample conditions or matrix interferences
may result in higher detection limits.
ND: None Detected


Cynthia Pigman, QA/QC Supervisor


Jeffrey Creager, Organics Manager

RS41101 OGTHL41

BSK-Pleasanton
A B & I

Date Sampled : 12/16/94
Time Sampled : 1245
Date Received : 12/20/94
Date of Analysis : 12/22/94
Report Issue Date: 12/29/94

Case Number : Ch943539
Lab ID Number : 3539-2
Project Number : P92270.3
Sample Description: MW-2

Sample Type: LIQUID

Analyses for Volatile Halocarbons by EPA Method 601
Prepared by EPA Method 5030

Results Reported in Micrograms per Liter ($\mu\text{g/L}$)

Compounds	Results	DLR	Compound	Results	DLR
Bromodichloromethane	ND	0.5	1,2-Dichloroethane	ND	0.5
Bromoform	ND	0.5	1,1-Dichloroethene	ND	0.5
Bromomethane	ND	1.0	cis-1,2-Dichloroethene.....	ND	0.5
Carbon tetrachloride	ND	0.5	trans-1,2-Dichloroethene...	ND	0.5
Chlorobenzene	ND	0.5	1,2-Dichloropropane	ND	0.5
Chloroethane	ND	0.5	cis-1,3-Dichloropropene ...	ND	0.5
Chloroform	ND	0.5	trans-1,3-Dichloropropene..	ND	0.5
Chloromethane	ND	0.5	Methylene chloride	ND	2.0
Dibromochloromethane	ND	0.5	1,1,2,2-tetrachloroethane..	ND	0.5
1,2-Dichlorobenzene	ND	0.5	Tetrachloroethene	ND	0.5
1,3-Dichlorobenzene	ND	0.5	1,1,1-Trichloroethane	ND	0.5
1,4-Dichlorobenzene	ND	0.5	1,1,2-Trichloroethane	ND	0.5
Dichlorodifluoromethane ...	ND	2.0	Trichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5	Trichlorofluoromethane	ND	0.5
			Vinyl chloride	ND	1.0

Sample DLR = DLR x DLR Multiplier,

DLR Multiplier = 1

DLR: Detection Limit for the Purposes of Reporting.
Exceptional sample conditions or matrix interferences
may result in higher detection limits.

ND: None Detected

--: Not Analyzed

Ed for CP
Cynthia Pigman, QA/QC Supervisor

g
Jeffrey Creager, Organics Manager

BSK-Pleasanton
A B & I

Date Sampled : 12/16/94
Time Sampled : 1135
Date Received : 12/20/94
Report Issue Date: 12/29/94

Case Number : Ch943539
Lab ID Number : 3539-4
Project Number : P92270.3
Sample Description: MW-4

Sample Type: LIQUID

Analyses for Selected Inorganic Constituents

Method No.	Analyte	Results	Units	DLR
EPA 7421	Lead (Pb)...	0.086	mg/L	0.005

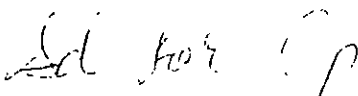
ND: None Detected

--: Not Analyzed

mg/L: Milligrams per Liter

DLR: Detection Limit for the Purposes of Reporting.

Exceptional sample conditions or matrix interferences
may result in higher detection limits.



Cynthia Pigman, QA/QC Supervisor

Jeffrey J. Koelwyn, Inorganics Manager

Analyses Request / Chain of Custody

BSK Log Number: 5539

Analytical Due Date: 12-30-94

Environmental Services

Shaded areas for LAB use only

Requested Analyses

Client Name: AB & I % BSK	Report Attention: Marty Cline	Phone #: (510) 462-4000
Address: 1181 Quarry Ln #300	Project, Quote or PO #: P92270.3	FAX #: (510) 462-6253
City, State, Zip: Pleasanton CA 94566	Copy to:	System #:

EAB use only:			Date Sampled	Time Sampled	Sampled by: FRG	Sample Description/Location	Comment or Station Code	BT	XE	TPH-G	TPH-D	EPA 601	Total of Hydrocarbons	Total Lead
Sample #	Type	# Cont.												
1	L	4	12/16/94	10:30		MW-1		X			X			
2	L	7	12/16/94	12:45		MW-2		X	X			X	X	
3	L	2	12/16/94	9:35		MW-3		X	X					
4	L	3	12/16/94	11:35		MW-4		X	X					X
						ANALYST COPY								
								Temp at lab arrival 2°C						

Matrix Type: L - Liquid S - Solid G - Gas
Type of Hazards Associated with Samples:

Additional Services:

Rush Priority: - 2 Day - 5 Day
 - Formal Chain of Custody - QC Data package

Additional Services Authorized by:

Payment Received with Delivery

Date: _____ Amount: \$ _____
Check # _____ Initials: _____
Receipt # _____

Signature	Print Name	Company	Date	Time
Requested / Relinquished by: <i>F. Robert Greguras</i>	F. Robert Greguras	BSK - P	12/19/94	9:00
Received / Relinquished by:				
Received / Relinquished by:				
Received / Relinquished by:				
Received for Laboratory by: <i>D. A. Hill</i>	D. A. Hill	BSK	12/20/94	09:20