Harding Lawson Associates

April 16, 1997

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Mr. Jeff Christoff
Blue Print Service Company
1057 Shary Circle
Concord, California 94518

Semiannual Report (including first Quarter 1997)
October 1, 1996 through March 31, 1997
Groundwater Remediation and Monitoring
Blue Print Service Facility
1700 Jefferson Street
Oakland, California

Dear Mr. Christoff:

This letter presents Harding Lawson Associates's (HLA) sample results from the groundwater monitoring wells and treatment system at the Blue Print Service facility at 1700 Jefferson Street, Oakland, California. This report is for the period of October 1, 1996 through March 31, 1997. It was prepared to satisfy quarterly groundwater monitoring (first Quarter 1997) reporting required by the Alameda County Health Care Services Agency (Alameda County) and first 1997 semiannual reporting required by the East Bay Municipal Utilities District (EBMUD).

BACKGROUND

Three underground gasoline storage tanks were removed from the property in 1987. Preliminary investigation indicated there had been a release of fuel into the soil and groundwater. Three groundwater monitoring wells were installed (MW-1, MW-2, and MW-3) on the property to evaluate the distribution of petroleum hydrocarbons in the soil and groundwater and to determine the direction of groundwater flow.

Groundwater monitoring of these wells revealed free phase gasoline floating on the surface of the groundwater in monitoring well MW-1. In January 1988, two additional monitoring wells (MW-1A and MW-4) were installed by HLA at the facility. One downgradient offsite monitoring well (MW-5) was installed by HLA in August 1988. Monitoring well MW-2 was destroyed during construction of the present facility. Monitoring well MW-6 was installed on April 22, 1996, to replace MW-2. The present configuration is presented on Plate 1.

The existing biodegradation groundwater treatment system began operating in June 1992. In the original configuration, groundwater was extracted from MW-1A and MW-4, and passed through an oil-water separator which removed the free phase gasoline. The water was then drawn into a 3,000-gallon bioreactor tank for treatment by hydrocarbon reducing microbes. The treated water from the bioreactor passed through two carbon adsorption vessels before being discharged to the sanitary sewer. In August 1995, free phase gasoline was no longer being recovered by the oil-water separator

and in December of 1995 the oil-water separator was by-passed. At this time, the water was pumped directly into the bioreactor for remediation. Also in December 1995, a third carbon vessel was added in-line to optimize carbon usage. In June of 1996, the reoccurrence of free phase gasoline was observed in MW-1 and a sheen was observed in the bioreactor. In October 1996, the system was shut down because of high TPH concentrations in the bioreactor effluent. To reduce the free phase product in the bioreactor, the oil-water separator was reinstated in December 1996. Between December 11, 1996 and February 31, 1997, approximately 150 gallons of product was removed from the groundwater. Since February, the free product removal rate appears to have slowed considerably.

TREATMENT SYSTEM STATUS

During this reporting period, approximately 60,000 gallons of water were treated and discharged to the sanitary sewer. The average daily discharge flow rate was approximately 670 gallons per day (gpd). Average combined extraction rate for the two extraction wells was 0.46 gallons per minute (gpm). The system was not operated between October 16, 1996 and December 11, 1996 while the oil-water separator was being plumbed back in-line. During this reporting period there were approximately 30 additional days that the system was not fully-operational due to high pressures on the carbon vessel or sand filters. Approximately 150 gallons of gasoline were recovered from the groundwater by the oil water separator.

During normal operation, an HLA engineer or technician visits the site on a weekly basis to monitor the system performance, collect samples if necessary, and perform maintenance functions as needed. Periodically, MW-1 is checked for the presence of free phase product and any free product observed is removed. Approximately six gallons of gasoline was removed from this well during this reporting period. During the last check of this well the amount of free phase product in this well was less than 0.01 feet. Flow totalizer readings and system maintenance activities are summarized in Table 1.

TREATMENT SYSTEM SAMPLING AND ANALYSIS

In accordance with the letter from HLA to EBMUD dated December 13, 1995, HLA has sampled the carbon vessel effluent, and/or the sanitary sewer influent at a frequency of every 40,000 gallons of water discharged. The EBMUD Wastewater Discharge Permit (Account No. 500-68191) requires effluent monitoring on a quarterly basis. HLA collects water samples from sampling ports into 40-milliliter volatile organic analysis vials. The water samples are placed in ice-chilled coolers and submitted to American Environmental Network Laboratory in Pleasant Hill, California, under chain-of-custody protocol for analysis. The samples are analyzed by EPA Test Method 8015 for total petroleum hydrocarbons as gasoline (TPHg) and EPA Test Method 8020 for benzene, toluene, ethylbenzene and xylene (BTEX). On December 23, 1996, Rodney Temples of EBMUD sampled the treatment system effluent. Sample results provided by EBMUD indicated the treatment system's discharge was below discharge limitations.

During this reporting period, the treatment system effluent was sampled by an HLA representative on October 4, 1996, 36,509 gallon of groundwater had been treated since the last effluent sample was collected on August 9, 1996. Chemical results indicate that treatment system effluent concentrations limitations were exceeded at this time. Upon receiving these chemical results on October 16, 1996, the system was shut down to reevaluate the treatment process. At this time, it was decided that it was

necessary to place the oil-water separator back in-line to prohibit free phase product being removed from the groundwater from entering the bioreactor. On December 11, 1996, HLA sampled the oil-water separator effluent, the bioreactor effluent (before carbon adsorption), and the effluent from all three carbon vessels after starting the system with the oil-water separator in-line. On December 16, 1996, after five days of operation, the bioreactor effluent and the third carbon effluent (system effluent) were sampled again to evaluate the systems treatment efficiency and confirm regulatory compliance. None of reported concentrations of BTEX in the system effluent samples collected after the oil-water separator was put back in-line were above the discharge limits. On February 18, 1997, the bioreactor effluent, the second carbon vessel effluent and the third carbon vessel effluent (system discharge) were sampled. Since the sampling on December 16, 1996, 30,250 gallons of groundwater had been processed by the system. Results of the chemical analysis of these samples indicate that treatment system effluent concentrations were below the EBMUD discharge limitations. Treatment system sampling results are presented in Table 2. The laboratory reports are presented in Appendix A.

GROUNDWATER SAMPLING AND ANALYSIS

On December 23, 1996 and March 27, 1997, HLA measured the water levels and checked for the presence of free phase product in wells MW-1, MW-3, MW-5 and MW-6. During both these sampling events, Wells MW-1 and MW-3 were found to have free product and therefore were not sampled. On December 23, 1996, 2.51 feet of product was measured in MW-1. At this time there was not a measurable amount (i.e., less than 0.01 feet) of product in MW-3 though free phase product was observed as emulsified droplets in groundwater removed from this well. On March 27, 1997, the amount of product in MW-1 was not a measurable amount, however, free phase product was observed as emulsified droplets on groundwater removed from this well. The thickness of product was measured to be 0.49 feet in MW-3 during this sampling event. During both sample events, these two wells were bailed dry to remove the existing product. During each sampling event, Monitoring wells MW-5 and MW-6 were sampled after purging at least three well volumes from each. During purging the pH, conductivity, and temperature of the purge water was monitored. Sampling was not performed until these groundwater parameters had stabilized. Three 40-milliliter VOA vials of water were collected from each well with a disposable Teflon bailer. Purge water was disposed of in the treatment system.

Groundwater surface elevations calculated from the water level measurements collected on December 23, 1996 are presented on Plate 1. Groundwater surface elevations calculated from the water level measurements collected on March 27, 1997 are presented on Plate 1. Data from both sampling events show a depression in the groundwater surface elevation at the site of the two extraction wells.

The two extraction wells, MW-1A and MW-4, were not sampled during the December 23, 1996 sampling event because the amount of gasoline being removed by the oil-water separator indicated the presence of free phase product. Three 40-milliliter VOA vials were collected from the oil-water separator effluent to evaluate the system efficiency. By March 1997, the amount of product being recovered in the oil-water separator was negligible and little free phase product was observed in MW-1. Therefore during the March 27, 1997, sampling event, these two wells were sampled at

sampling ports in the treatment system prior to the extracted groundwater entering the oil-water separator.

All of the water samples were placed in ice-chilled coolers and submitted to American Environmental Network Laboratory in Pleasant Hill, California under chain-of-custody protocol for analysis. The samples were analyzed by EPA Test Method 8015 (modified) for TPHg and EPA Test Method 8020 for BTEX. The groundwater samples from MW-1, MW-4, MW-5 and MW-6 were analyzed for methyl t-butyl ether (MTBE). The historical analytical results are summarized in Table 3. Plates 3 and 4 presents the THPg and BTEX results of the two sampling events for this reporting period. The laboratory reports are presented in Appendix A.

DISCUSSION

HLA will to continue quarterly groundwater monitoring and reporting as required by Alameda County, and treatment system discharge monitoring with semiannual reporting as required by EBMUD. Groundwater sampling will be performed during the second quarter of 1997 in June, and monitoring of the system effluent will continue to be performed for every 40,000 gallons of treated groundwater discharged.

If you have any questions, please contact James McCarty at (510) 628-3220) or David Kleesattel at (415) 278-2107.

Yours very truly,

HARDING LAWSON ASSOCIATES

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JGM/DRK/mlw 34467/036419M.DOC

Attachments: Table 1 - City Blue Groundwater Treatment System Maintenance Log
Table 2 - Groundwater Treatment System Analytical Results
Table 3 - Groundwater Monitoring Analytical Results
Plate 1 - Groundwater Surface Elevations, December 23, 1996
Plate 2 - Groundwater Surface Elevations, March 27, 1997
Plate 3 - TPHg and BTEX Concentration, December 23, 1996
Plate 4 - TPHg and BTEX Concentration, March 27, 1997
Appendix A - Laboratory Reports

Table 1. City Blue Groundwater Treatment System Maintenance Log
Blue Print Services Facility
1700 Jeferson Street
Oakland, California

DATE	FLOW TOTALIZER (gal)	DISCHARGE RATE (gpd)	DISCHARGE RATE (gpm)	COMMENTS
10/03/96	800,890	570	0.40	System down due to high pressures, backwashed CD-1 and sandfilters to allow discharge
10/04/96	801,597	707	0.49	Collect H2O samples from CD-1 inf, CD-2 eff & CD-3 eff
10/10/96	803,460	311	0.22	System down due to high pressures, backwashed CD-1,2&3 and sand filters
10/15/96	803,810	70	0.05	System down on arrival, possible problem with high level relay switch, bailed MW-1, meeting onsite with ACDHS
10/16/96	804,490	680	0.47	Turn off air to well pumps, leave nutrient pump and recycle pump on
11/09/96	804,519	--	--	Plumbed separator back in line, measured convault levels with interface probe, pumps off
11/14/96	804,529	--	--	Put two new carbon vessels on-line, moved #2 to # 1, pumps off
12/11/96	805,085	--	--	Restart system, Sample sep-eff, bio-eff, c1-eff, c2-eff, c3-eff
12/12/96	805,825	740	0.51	Check on system
12/15/96	807,664	613	0.43	Check on system
12/16/96	807,717	--	--	System down due to plugged inductor, clean and let system run for 1 hr. then sample Bio-eff & C3-eff
12/19/96	809,790	691	0.48	Check on system
12/23/96	811,967	544	0.38	Met EBMUD Rep.:collects sample from sys-eff, get 3 new carbons & get rid of 2 spent, sample MW-.5,6 & Sys-eff, bailed MW-1 & 3
12/25/96	813,220	627	0.44	Measure product level in convault with interface probe: 91 gal product, 25 gal water
01/01/97	817,540	617	0.43	Backwash carbon and sand filters, system down on arrival due to high containment from rain
01/05/97	818,200	--	--	high sandfilter, bio tank alarm Backwashed C3 and sandfilters, increased nutrient 10/40 to 10/60
01/10/97	818,420	--	--	high biotank alarm, backwashed sandfilters and left other sandfilter open slightly
01/12/97	819,770	675	0.47	check on system, seems to be running ok
01/15/97	819,886	--	--	high biotank, high sand filter, switch sandfilter bypass, leave discharge on manual at 5gpm
01/16/97	820,905	--	--	high biotank, high sand filter, switch sandfilter bypass, leave discharge on manual at 5gpm
01/16/97	821,390	--	--	return to find tank down to discharge intake, turn back to auto
01/21/97	824,597	641	0.45	Check System
01/25/97	827,070	618	0.43	Check system, sys down due to high rain level in containment
01/27/97	828,663	797	0.55	Check on system
02/04/97	834,380	715	0.50	Check on system
02/08/97	837,180	700	0.49	Check on system, increased nutrient pump 10/50 to 10/60
02/17/97	837,920	--	--	Put new carbon online
02/18/97	837,968	--	--	Sampled Bio-Eff, CD2-Eff, and CD3-Eff decreased nutrient pump to 8/55
02/19/97	838,850	882	0.61	Check System
03/01/97	845,620	677	0.47	Check on system, Sys was down due to clogged carbon vessels, backwashed all three & sand filters
03/08/97	852,390	967	0.67	Check on system
03/14/97	857,582	865	0.60	Check on system, backwashed C1, C2, C3 & S. Filters
03/26/97	858,606	--	--	System down, burn out fuse, replace fuse
03/27/97	859,600	994	0.69	Check on system, Qtrly GW Mon, sampled MW-5,6 1A, & 4
	Total (gallons)	Average (gpd)	Average (gpm)	
	58,710	668	0.46	

Table 2. Groundwater Treatment System Analytical Results
Blue Print Service Facility
1700 Jefferson Street
Oakland, California

Date/Analytes	Bioreactor Influent	Bioreactor Effluent	First Carbon Bed Effluent	Second Carbon Bed Effluent	Third* Carbon Bed Effluent
16-Jun-92					
TPHg	NA	3	ND <.05	NA	---
Benzene	NA	220	ND <0.3	NA	---
Toluene	NA	460	ND <0.3	NA	---
Ethylbenzene	NA	35	ND <0.3	NA	---
Xylene	NA	290	ND <0.3	NA	---
19-Jun-92					
TPHg	180	2	ND <.05	NA	---
Benzene	18,000	2	ND <0.3	NA	---
Toluene	31,000	5	ND <0.3	NA	---
Ethylbenzene	2,200	ND <0.3	ND <0.3	NA	---
Xylene	16,000	150	ND <0.3	NA	---
2-Jul-92					
TPHg	160	0	ND <.05	NA	---
Benzene	14,000	1	ND <0.3	NA	---
Toluene	27,000	ND <0.3	ND <0.3	NA	---
Ethylbenzene	1,700	ND <0.3	ND <0.3	NA	---
Xylene	1,300	1	ND <0.3	NA	---
20-Aug-92					
TPHg	190	6	0.073	NA	---
Benzene	14,000	31	ND <0.3	NA	---
Toluene	24,000	14	ND <0.3	NA	---
Ethylbenzene	2,000	ND <6	ND <0.3	NA	---
Xylene	13,000	150	ND <0.3	NA	---
15-Sep-92					
TPHg	230	23	0.054	NA	---
Benzene	17,000	1,100	0.4	NA	---
Toluene	29,000	3,600	0.8	NA	---
Ethylbenzene	2,200	59	ND <0.3	NA	---
Xylene	15,000	1,100	0.6	NA	---
3-Mar-94					
TPHg	80	4	NA	ND <.05	---
Benzene	1,500	270	NA	ND <0.5	---
Toluene	9,200	370	NA	ND <0.5	---
Ethylbenzene	1,000	32	NA	ND <0.5	---
Xylene	14,000	840	NA	ND <0.5	---

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Date/Analytes	Bioreactor Influent	Bioreactor Effluent	First Carbon Bed Effluent	Second Carbon Bed Effluent	Third* Carbon Bed Effluent
7-Apr-94					
TPHg	79	0	ND <.05	NA	---
Benzene	8,300	16	3.7	NA	---
Toluene	19,000	4	ND <0.5	NA	---
Ethylbenzene	990	ND <0.5	ND <0.5	NA	---
Xylene	9,300	2	ND <0.5	NA	---
13-May-94					
TPHg	220	1	ND <.05	NA	---
Benzene	12,000	45	ND <0.5	NA	---
Toluene	23,000	7	ND <0.5	NA	---
Ethylbenzene	1,700	1	ND <0.5	NA	---
Xylene	17,000	11	ND <0.5	NA	---
29-Sep-94					
TPHg	96	1	NA	ND <.05	---
Benzene	8,000	5	NA	ND <0.5	---
Toluene	16,000	8	NA	ND <0.5	---
Ethylbenzene	ND <250	ND <2.5	NA	ND <0.5	---
Xylene	9,000	9	NA	ND <0.5	---
19-Dec-94					
TPHg	NA	6	0.59	ND <.05	---
Benzene	NA	140	60	1	---
Toluene	NA	100	14	0.5	---
Ethylbenzene	NA	ND<5	ND<0.5	ND <0.5	---
Xylene	NA	1,600	100	ND <0.5	---
5-Jan-95					
TPHg	NA	NA	0.2	ND <.05	---
Benzene	NA	NA	17	0.7	---
Toluene	NA	NA	3	ND<0.5	---
Ethylbenzene	NA	NA	ND<0.5	ND<0.5	---
Xylene	NA	NA	3	ND<0.5	---
14-Apr-95					
TPHg	NA	2	0.9	NA	---
Benzene	NA	36	22	NA	---
Toluene	NA	6	3	NA	---
Ethylbenzene	NA	3	0.6	NA	---
Xylene	NA	58	13	NA	---

Table 2. Groundwater Treatment System Analytical Results
Blue Print Service Facility
1700 Jefferson Street
Oakland, California

Date/Analytes	Bioreactor Influent	Bioreactor Effluent	First Carbon Bed Effluent	Second Carbon Bed Effluent	Third* Carbon Bed Effluent
18-May-95					
TPHg	41	1	0.1	ND <.05	—
Benzene	4,400	22	2	ND<0.5	—
Toluene	5,700	9	ND<0.5	ND<0.5	—
Ethylbenzene	430	ND<0.5	ND<0.5	ND<0.5	—
Xylene	8,200	16	ND<0.5	ND<2	—
7-Sep-95					
TPHg	NA	4	1.1	0.2	—
Benzene	NA	400	120	15	—
Toluene	NA	300	75	9	—
Ethylbenzene	NA	12	2	ND<0.5	—
Xylene	NA	320	82	9	—
16-Nov-95					
TPHg	NA	3	2.8	0.8	—
Benzene	NA	18	17	3	—
Toluene	NA	11	18	2	—
Ethylbenzene	NA	7	6	0.9	—
Xylene	NA	90	74	10	—
22-Dec-95					
TPHg	NA	10	0.54	NA	—
Benzene	NA	95	1	NA	—
Toluene	NA	38	0.6	NA	—
Ethylbenzene	NA	6	ND<0.5	NA	—
Xylene	NA	1,300	13	NA	—
29-Dec-95					
TPHg	NA	NA	0.7	0.1	—
Benzene	NA	NA	5	ND<0.5	—
Toluene	NA	NA	3	ND<0.5	—
Ethylbenzene	NA	NA	1	ND<0.5	—
Xylene	NA	NA	19	ND<0.5	—
17-Jan-96					
TPHg	NA	1	ND<0.05	NA	—
Benzene	NA	8	ND<0.5	NA	—
Toluene	NA	4	ND<0.5	NA	—
Ethylbenzene	NA	1	ND<0.5	NA	—
Xylene	NA	15	ND<2	NA	—

Table 2. Groundwater Treatment System Analytical Results
Blue Print Service Facility
1700 Jefferson Street
Oakland, California

Date/Analytes	Bioreactor Influent	Bioreactor Effluent	First Carbon Bed Effluent	Second Carbon Bed Effluent	Third* Carbon Bed Effluent
16-Feb-96					
TPHg	NA	1	0.2	ND<0.05	---
Benzene	NA	13	ND<0.5	ND<0.5	---
Toluene	NA	6	ND<0.5	ND<0.5	---
Ethylbenzene	NA	1	ND<0.5	ND<0.5	---
Xylene	NA	16	ND<2	ND<2	---
19-Mar-96					
TPHg	33	1	0.1	NA	---
Benzene	460	12	ND<0.5	NA	---
Toluene	360	7	ND<0.5	NA	---
Ethylbenzene	59	3	ND<0.5	NA	---
Xylene	3,300	32	ND<2	NA	---
18-Apr-96					
TPHg	NA	NA	1.3	0.17	0.09
Benzene	NA	NA	37	1.4	ND<0.5
Toluene	NA	NA	16	0.5	ND<0.5
Ethylbenzene	NA	NA	3.8	ND<0.5	ND<0.5
Xylene	NA	NA	66	ND<2	ND<2
5-Jun-96					
TPHg	NA	NA	5.8	0.53	0.19
Benzene	NA	NA	93	2.1	ND<0.5
Toluene	NA	NA	93	1.2	ND<0.5
Ethylbenzene	NA	NA	11	1.7	0.5
Xylene	NA	NA	490	6	ND<2
9-Aug-96					
TPHg	NA	74	NA	0.77	0.19
Benzene	NA	5,600	NA	12	ND<0.5
Toluene	NA	11,000	NA	4.8	ND<0.5
Ethylbenzene	NA	990	NA	1.2	ND<0.5
Xylene	NA	18,000	NA	26	ND<2
4-Oct-96					
TPHg	NA	2,100	NA	670	44
Benzene	NA	2,900	NA	3,700	ND<30
Toluene	NA	13,000	NA	8,400	50
Ethylbenzene	NA	7,000	NA	1,600	110
Xylene	NA	170,000	NA	36,000	870

Table 2. Groundwater Treatment System Analytical Results
Blue Print Service Facility
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Oakland, California

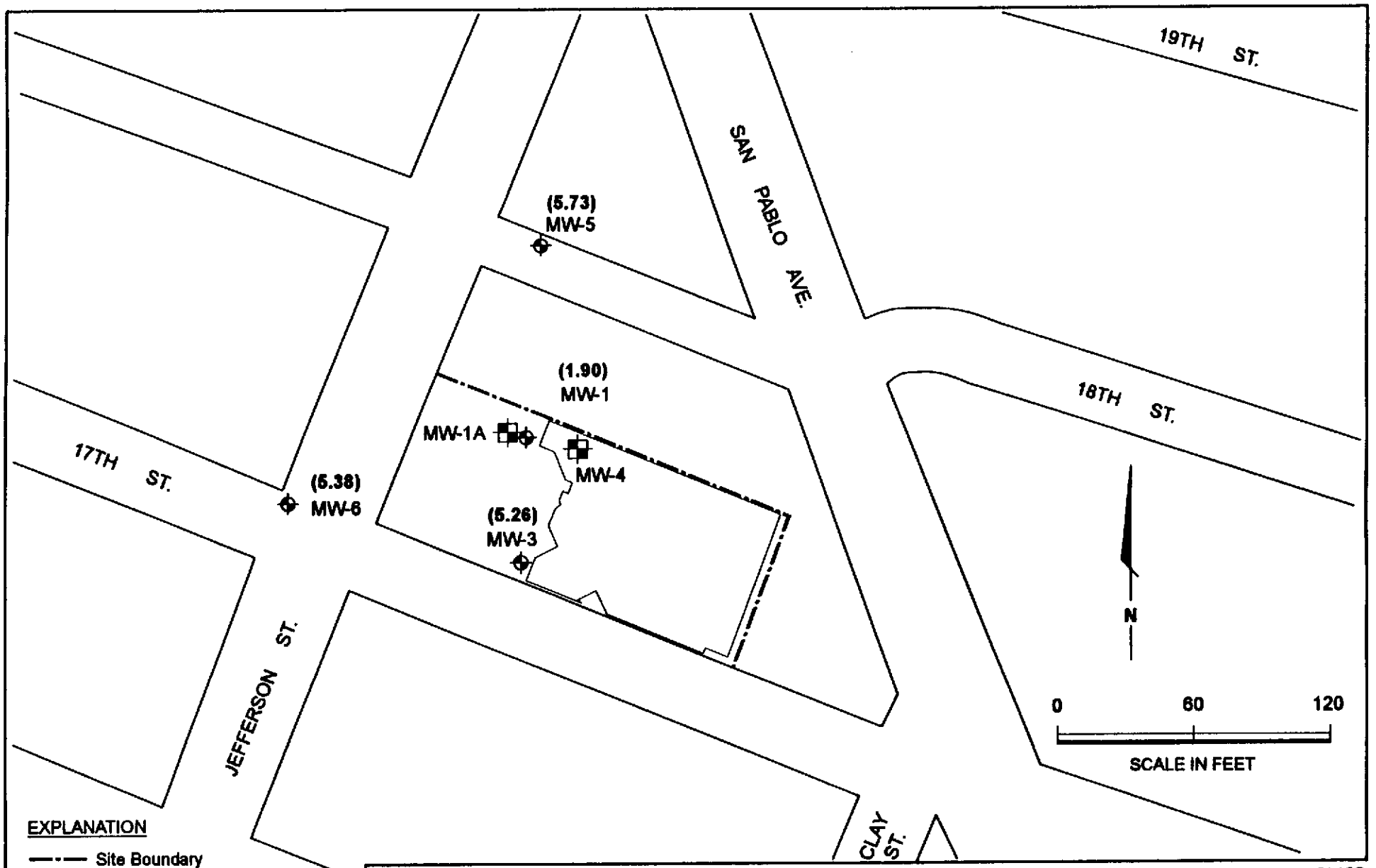
Date/Analytes	Bioreactor Influent	Bioreactor Effluent	First Carbon Bed Effluent	Second Carbon Bed Effluent	Third* Carbon Bed Effluent
11-Dec-96					
TPHg	69	5	51	2.8	0.31
Benzene	11,000	72	4,300	2.3	ND<0.5
Toluene	17,000	120	8,500	8.0	ND<0.5
Ethylbenzene	1,500	32	750	7.8	0.6
Xylene	12,000	1,000	16,000	45	ND<2
16-Dec-96					
TPHg	NA	6	NA	NA	0.16
Benzene	NA	450	NA	NA	ND<0.5
Toluene	NA	790	NA	NA	ND<0.5
Ethylbenzene	NA	52	NA	NA	ND<0.5
Xylene	NA	540	NA	NA	ND<2
23-Dec-96					
TPHg	100	NA	NA	NA	NA
Benzene	15,000	NA	NA	NA	NA
Toluene	26,000	NA	NA	NA	NA
Ethylbenzene	1,800	NA	NA	NA	NA
Xylene	14,000	NA	NA	NA	NA
18-Feb-97					
TPHg	NA	2.0	NA	0.12	ND<00.5
Benzene	NA	14	NA	ND<0.5	ND<0.5
Toluene	NA	18	NA	ND<0.5	ND<0.5
Ethylbenzene	NA	2.1	NA	ND<0.5	ND<0.5
Xylene	NA	140	NA	ND<2	ND<2

TPHg = total petroleum hydrocarbons as gasoline
TPHg concentrations presented in milligrams per liter (mg/l)
Benzene, Toluene, Ethylbenzene, and Xylenes concentrations presented in micrograms per liter (µg/l)
ND = Not detected above the reporting limit in parenthesis
NA = Not analyzed
* Third carbon added online December 29, 1996

Table 3. Groundwater Monitoring Analytical Results
Blue Print Service Facility
1700 Jefferson Street
Oakland, California

	Date Sampled															
TPHg	8/1/91	9/30/92	3/30/93	1/13/94	4/13/94	6/29/94	12/8/94	4/3/95	6/27/95	9/19/95	12/13/96	3/6/96	6/11/96	9/19/96	12/23/96	3/27/97
MW-1A	350	NA	NA	NA	170	95	190	67	53	52	62	200	140	100	NA	66
MW-3	74	NA	NA	NA	NA	39	4,600	51	20	6	19	7	16	6	NA	NA
MW-4	86	NA	NA	NA	58	16	92	35	13	14	11	110	260	95	NA	37
MW-5	120	51	74	80	63	64	59	51	41	50	45	51	48	48	45	44
MW-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05	<0.05
Benzene																
MW-1A	17,000	NA	NA	NA	17,000	16,000	13,000	11,000	11,000	8,900	9,900	14,000	18,000	16,000	NA	12,000
MW-3	1,600	NA	NA	NA	NA	3,200	1,500	1,100	270	220	220	120	170	45	NA	NA
MW-4	1,500	NA	NA	NA	1,500	1,300	1,700	1,200	1,300	630	2,200	2,600	6,600	9,900	NA	2,600
MW-5	20,000	13,000	16,000	19,000	14,000	29,000	13,000	15,000	12,000	13,000	16,000	15,000	12,000	12,000	12,000	11,000
MW-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
Toluene																
MW-1A	31,000	NA	NA	NA	31,000	21,000	21,000	13,000	9,900	11,000	9,200	22,000	28,000	22,000	NA	15,000
MW-3	4,600	NA	NA	NA	NA	2,900	4,200	2,300	550	480	140	170	270	30	NA	NA
MW-4	6,200	NA	NA	NA	2,500	790	4,100	3,400	1,600	470	2,100	3,600	19,000	19,000	NA	6,900
MW-5	14,000	5,900	5,000	8,200	3,500	5,400	3,800	2,200	2,100	2,100	2,700	2,800	2,900	4,500	2,200	1,100
MW-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
Ethylbenzene																
MW-1A	3,000	NA	NA	NA	2,100	1,500	1,400	910	500	790	710	2,700	2,800	2,100	NA	1,400
MW-3	670	NA	NA	NA	NA	580	6,000	580	190	140	68	49	68	15	NA	NA
MW-4	1,000	NA	NA	NA	520	51	310	280	77	14	110	780	3,700	2,000	NA	540
MW-5	1,900	1,400	1,800	1,400	1,500	2,800	1,800	2,800	1,400	16,000	2,000	2,000	2,000	2,300	2,700	1,900
MW-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5
Xylene																
MW-1A	NA	NA	NA	14,000	22,000	12,000	11,000	9,800	6,300	5,300	6,800	22,000	19,000	14,000	NA	100
MW-3	NA	NA	NA	NA	4,300	4,300	95,000	4,800	1,700	1,700	500	440	1,500	300	NA	NA
MW-4	NA	NA	NA	3,200	7,300	3,400	5,400	5,800	1,800	1,800	2,100	10,000	28,000	13,000	NA	5,500
MW-5	2,600	2,700	2,700	2,100	4,900	4,500	2,900	4,500	1,600	1,900	2,100	2,400	2,700	4,000	6,500	2,800
MW-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2	<2	<2	<2
MTBE																
MW-1A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,800
MW-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,400
MW-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	600	300
MW-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	<5

TPHg = total petroleum hydrocarbons as gasoline
TPHg concentrations presented in milligrams per liter (mg/l)
Benzene, Toluene, Ethylbenzene Xylenes, and MTBE concentrations presented in micrograms per liter (µg/l)
MTBE = methyl t-butyl ether
ND = Not detected above the reporting limit in parenthesis
NA = Not analyzed



EXPLANATION

- Site Boundary
- Monitoring Well
- Extraction Well
- (5.50) Groundwater Elevation (in feet based on City of Oakland datum)

HLA

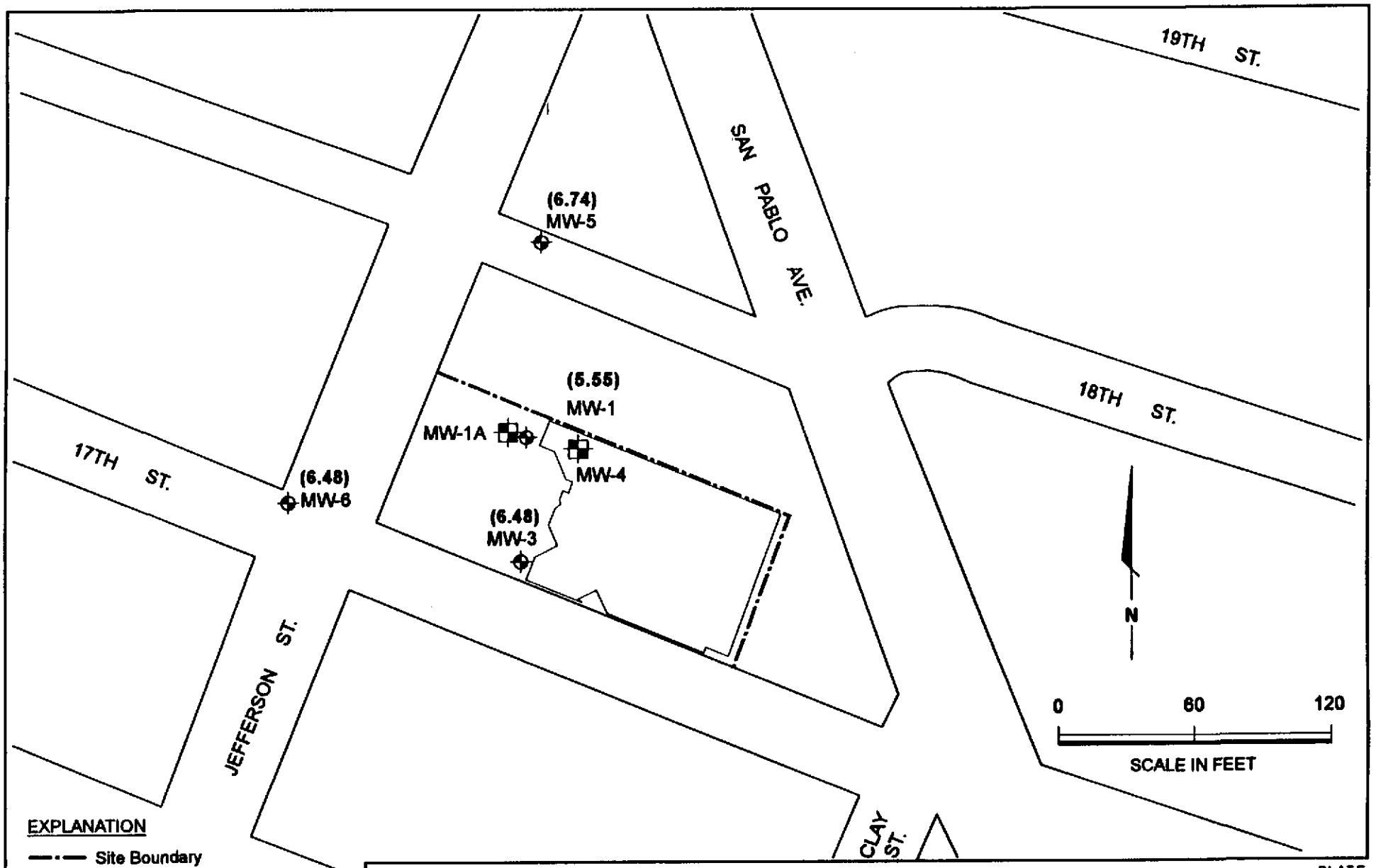
Harding Lawson Associates
Engineering and Environmental Services

Groundwater Surface Elevations
December 23, 1996
City Blue Production Facility
Oakland, California

PLATE **1**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
AJW	34467.1	JGM	01/22/97	

vic-1296.fh3



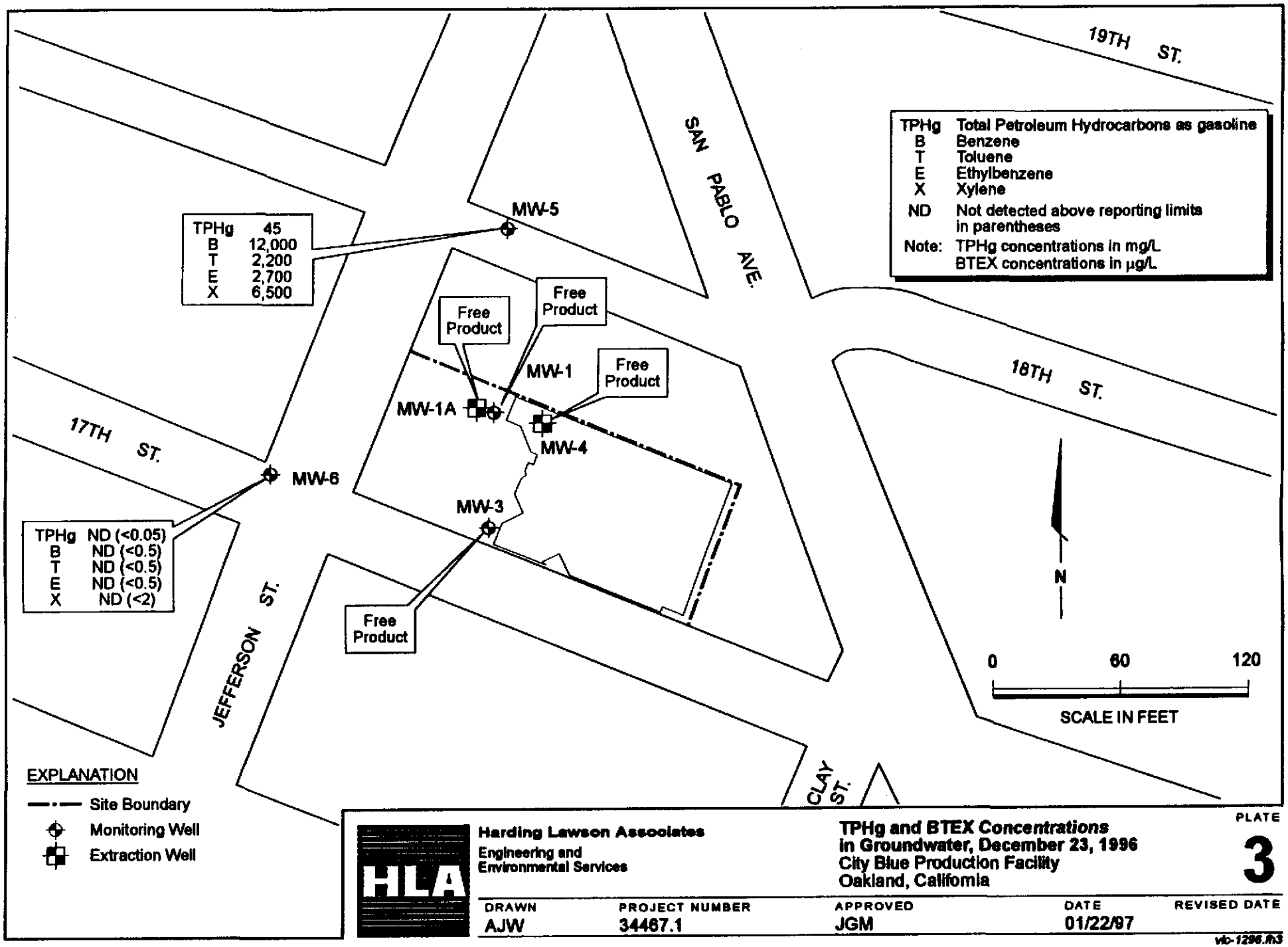
Harding Lawson Associates
Engineering and Environmental Services

Groundwater Surface Elevations
March 27, 1997
City Blue Production Facility
Oakland, California

PLATE **2**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
AJW	34467.1	JGM	04/10/97	

vib-0397.fh3



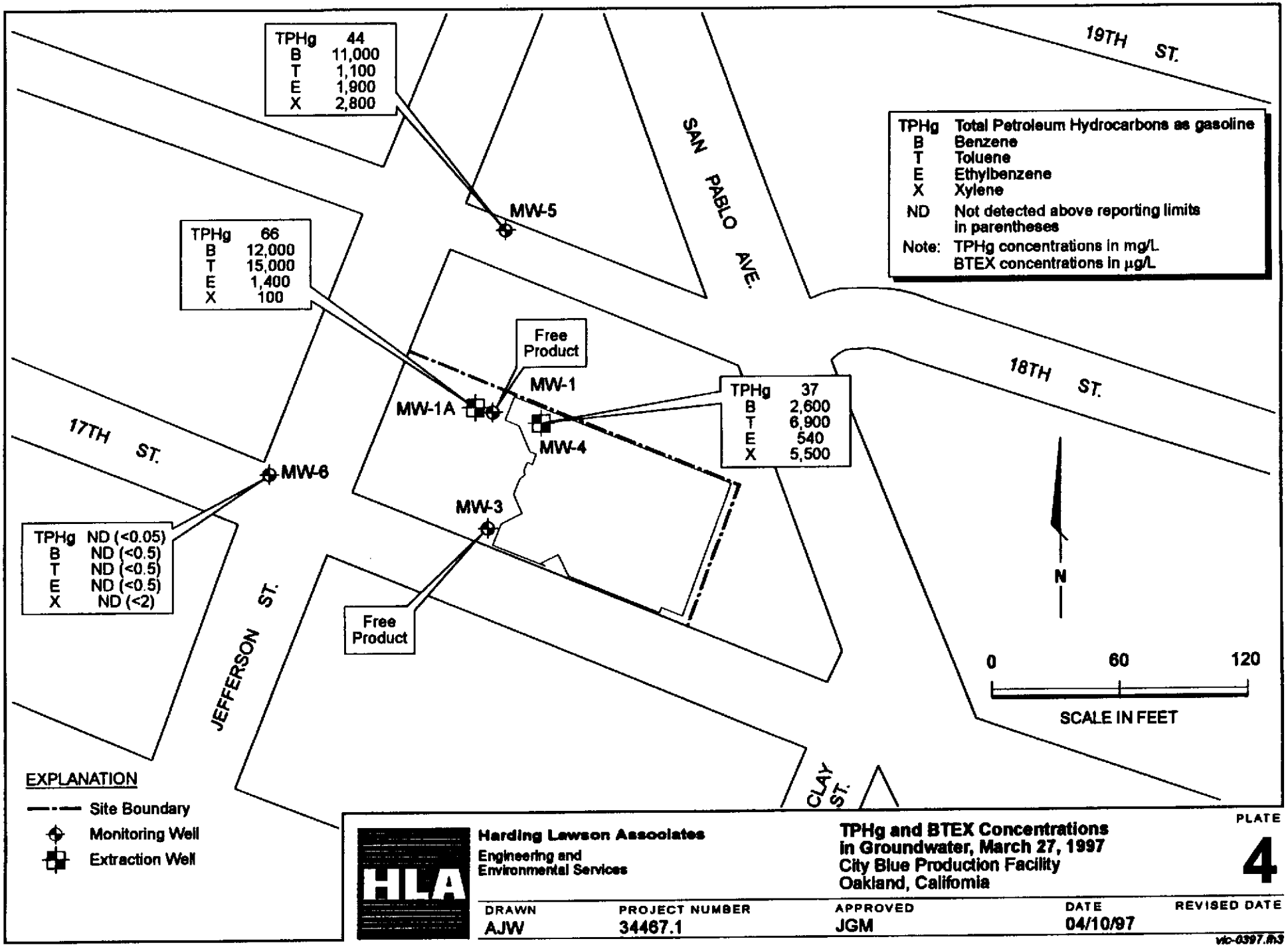
Harding Lawson Associates
Engineering and Environmental Services

TPHg and BTEX Concentrations in Groundwater, December 23, 1996
City Blue Production Facility
Oakland, California

PLATE **3**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
AJW	34467.1	JGM	01/22/97	

vlc-1296.fh3



Harding Lawson Associates
Engineering and Environmental Services

TPHg and BTEX Concentrations in Groundwater, March 27, 1997
City Blue Production Facility
Oakland, California

PLATE **4**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
AJW	34467.1	JGM	04/10/97	

vlc-0397.fh3

APPENDIX A

LABORATORY REPORTS

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

APR 9 - 1997

HARDING LAWSON ASSOCIATES
383 FOURTH ST., STE. 300
OAKLAND, CA 94607

ATTN: J. McCARTY
CLIENT PROJ. ID: 34467-1
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 1496

REPORT DATE: 04/08/97
DATE(S) SAMPLED: 03/27/97
DATE RECEIVED: 03/27/97
AEN WORK ORDER: 9703352

PROJECT SUMMARY:

On March 27, 1997, this laboratory received 4 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARDING LAWSON ASSOCIATES

SAMPLE ID: MW-1A
AEN LAB NO: 9703352-01
AEN WORK ORDER: 9703352
CLIENT PROJ. ID: 34467-1

DATE SAMPLED: 03/27/97
DATE RECEIVED: 03/27/97
REPORT DATE: 04/08/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	12,000 *	30	ug/L	04/01/97
Toluene	108-88-3	15,000 *	30	ug/L	04/01/97
Ethylbenzene	100-41-4	1,400 *	30	ug/L	04/01/97
Xylenes, Total	1330-20-7	8,300 *	100	ug/L	04/01/97
Purgeable HCs as Gasoline	5030/GCFID	66 *	3	mg/L	04/01/97
Methyl t-Butyl Ether	1634-04-4	1,800 *	300	ug/L	04/01/97

Reporting limits elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: MW-4
AEN LAB NO: 9703352-02
AEN WORK ORDER: 9703352
CLIENT PROJ. ID: 34467-1

DATE SAMPLED: 03/27/97
DATE RECEIVED: 03/27/97
REPORT DATE: 04/08/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	2,600 *	10	ug/L	04/01/97
Toluene	108-88-3	6,900 *	10	ug/L	04/01/97
Ethylbenzene	100-41-4	540 *	10	ug/L	04/01/97
Xylenes, Total	1330-20-7	5,500 *	40	ug/L	04/01/97
Purgeable HCs as Gasoline	5030/GCFID	37 *	1	mg/L	04/01/97
Methyl t-Butyl Ether	1634-04-4	1,400 *	100	ug/L	04/01/97

Reporting limits elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: MW-5
AEN LAB NO: 9703352-03
AEN WORK ORDER: 9703352
CLIENT PROJ. ID: 34467-1

DATE SAMPLED: 03/27/97
DATE RECEIVED: 03/27/97
REPORT DATE: 04/08/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	11,000 *	30	ug/L	04/03/97
Toluene	108-88-3	1,100 *	30	ug/L	04/03/97
Ethylbenzene	100-41-4	1,900 *	30	ug/L	04/03/97
Xylenes, Total	1330-20-7	2,800 *	100	ug/L	04/03/97
Purgeable HCs as Gasoline	5030/GCFID	44 *	3	mg/L	04/03/97
Methyl t-Butyl Ether	1634-04-4	300 *	300	ug/L	04/03/97

Reporting limits elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: MW-6
AEN LAB NO: 9703352-04
AEN WORK ORDER: 9703352
CLIENT PROJ. ID: 34467-1

DATE SAMPLED: 03/27/97
DATE RECEIVED: 03/27/97
REPORT DATE: 04/08/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	ND	0.5	ug/L	04/01/97
Toluene	108-88-3	ND	0.5	ug/L	04/01/97
Ethylbenzene	100-41-4	ND	0.5	ug/L	04/01/97
Xylenes, Total	1330-20-7	ND	2	ug/L	04/01/97
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	04/01/97
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	04/01/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9703352

CLIENT PROJECT ID: 34467-1

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9703352
INSTRUMENT: F
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
04/01/97	MW-1A	01	95
04/01/97	MW-4	02	95
04/03/97	MW-5	03	98
04/01/97	MW-6	04	93
QC Limits:			70-130

DATE ANALYZED: 03/31/97
SAMPLE SPIKED: LCS
INSTRUMENT: F

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	18.5	90	1	85-115	20
Toluene	64.4	92	5	85-115	20
Hydrocarbons as Gasoline	500	92	4	85-115	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

Harding Lawson Associates
1855 Gateway Boulevard, Suite 500
Concord, California 94520
(510) 687-9660

R-3,5-2

CHAIN OF CUSTODY FORM

No. 1496

Lab: AEN 9703352

Samplers: James M'Carty

Job Number: 34467-1

Name/Location: City - Blue

Project Manager: Dave Kleesathel

Recorder: James M'Carty (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Day	Time	STATION DESCRIPTION/ NOTES
	X							3	X	MW-	1	A	97	03	27	1055	01 ABC
	X							3	X	MW-	4					1052	02 ABC
	X							3	X	MW-	5					1005	03 ABC
	X							3	X	MW-	6					0932	04 ABC

ANALYSIS REQUESTED	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	METALS	EPA 8015M/TPHg	EPA 8020/BTEX	EPA 8015M/TPHd,o	TPHg/BTEX/MTBE
									X
									X
									X
									X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE

MISCELLANEOUS

Std TAT

Fax results to
J. M'Carty / Oakland
D. Kleesathel / SF

Hard Copy to
J. M'Carty

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
James M'Carty	Rick Gilmore	3-27-97 15:10
Rick Gilmore 3-27-97 16:35	Teresa Podhorsek	3/27/97 16:45
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

METHOD OF SHIPMENT

SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY

[redacted] tory C[redacted] White [redacted] Proj[redacted] Copy [redacted] Yellow [redacted] d or C[redacted] by [redacted] Pink

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARDING LAWSON ASSOCIATES
383 FOURTH ST., STE. 300
OAKLAND, CA 94607

ATTN: JIM McCARTY
CLIENT PROJ. ID: 11295-012
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 0665

REPORT DATE: 02/28/97
DATE(S) SAMPLED: 02/18/97
DATE RECEIVED: 02/18/97
AEN WORK ORDER: 9702185

PROJECT SUMMARY:

On February 18, 1997, this laboratory received 3 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARDING LAWSON ASSOCIATES

SAMPLE ID: BIO-EFF
AEN LAB NO: 9702185-01
AEN WORK ORDER: 9702185
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 02/18/97
DATE RECEIVED: 02/18/97
REPORT DATE: 02/28/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	14 *	0.5	ug/L	02/25/97
Toluene	108-88-3	18 *	0.5	ug/L	02/25/97
Ethylbenzene	100-41-4	2.1 *	0.5	ug/L	02/25/97
Xylenes, Total	1330-20-7	140 *	2	ug/L	02/25/97
Purgeable HCs as Gasoline	5030/GCFID	2.0 *	0.05	mg/L	02/25/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: CD2-EFF
AEN LAB NO: 9702185-02
AEN WORK ORDER: 9702185
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 02/18/97
DATE RECEIVED: 02/18/97
REPORT DATE: 02/28/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	ND	0.5	ug/L	02/25/97
Toluene	108-88-3	ND	0.5	ug/L	02/25/97
Ethylbenzene	100-41-4	ND	0.5	ug/L	02/25/97
Xylenes, Total	1330-20-7	ND	2	ug/L	02/25/97
Purgeable HCs as Gasoline	5030/GCFID	0.12 *	0.05	mg/L	02/25/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: CD3-EFF
AEN LAB NO: 9702185-03
AEN WORK ORDER: 9702185
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 02/18/97
DATE RECEIVED: 02/18/97
REPORT DATE: 02/28/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	ND	0.5	ug/L	02/25/97
Toluene	108-88-3	ND	0.5	ug/L	02/25/97
Ethylbenzene	100-41-4	ND	0.5	ug/L	02/25/97
Xylenes, Total	1330-20-7	ND	2	ug/L	02/25/97
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	02/25/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9702185

CLIENT PROJECT ID: 11295-012

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9702185
INSTRUMENT: F
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
02/25/97	BIO-EFF	01	100
02/25/97	CD2-EFF	02	96
02/25/97	CD3-EFF	03	97
QC Limits:			70-130

DATE ANALYZED: 02/26/97
SAMPLE SPIKED: 9702241-04
INSTRUMENT: F

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	18.5	96	6	85-109	17
Toluene	64.4	97	7	87-111	16
Hydrocarbons as Gasoline	500	103	12	66-117	19

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

0665

Harding Lawson Associates
1855 Gateway Boulevard, Suite 500
Concord, California 94520
(510) 687-9660 • FAX (510) 687-9673

CHAIN OF CUSTODY FORM

A-3,5-1

Lab: AEN 9702185

Samplers: James McCarty

Job Number: 11295-012

Name/Location: City Blue

Project Manager: Dave Kleeschulte

Recorder: James McCarty (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	Ice	SAMPLE NUMBER OR LAB NUMBER	DATE: Yr	Wk	Seq	Yr	Mo	Day	Time	STATION DESCRIPTION/ NOTES
	X							3		Bio-Eff	9	7	02	1	8		0823	01ABC
	X							3		CD2-Eff							0827	02ABC
	X							3		CD3-Eff							0830	03ABC

ANALYSIS REQUESTED	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	METALS	EPA 8015M/TPHg	EPA 8020/BTEX	EPA 8015M/TPHd,o	TPHg/BTEX
									X
									X
									X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						Std TAT
						Fax results to Dave Kleeschulte in SF & Jim McCarty in Oakland
						Hard Copy to Jim McCarty in Oakland

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
James McCarty	[illegible]	2/18/97 1315
[illegible]	[illegible]	2/18/97 1655
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME

DISPATCHED BY: (Signature) DATE/TIME

RECEIVED FOR LAB BY: (Signature) DATE/TIME

METHOD OF SHIPMENT

SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY

Laboratory Copy White — Project Copy Yellow — Field or Other Copy Pink

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARDING ASSOC.

JAN 6 - 1997

HARDING LAWSON ASSOCIATES
383 FOURTH ST., STE. 300
OAKLAND, CA 94607

REPORT DATE: 01/03/97

DATE(S) SAMPLED: 12/23/96

DATE RECEIVED: 12/24/96

AEN WORK ORDER: 9612373

ATTN: JIM McCARTY
CLIENT PROJ. ID: 34467-1
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 0639

PROJECT SUMMARY:

On December 24, 1996, this laboratory received 3 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARDING LAWSON ASSOCIATES

SAMPLE ID: MW-6
AEN LAB NO: 9612373-01
AEN WORK ORDER: 9612373
CLIENT PROJ. ID: 34467-1

DATE SAMPLED: 12/23/96
DATE RECEIVED: 12/24/96
REPORT DATE: 01/03/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	ND	0.5	ug/L	12/27/96
Toluene	108-88-3	ND	0.5	ug/L	12/27/96
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/27/96
Xylenes, Total	1330-20-7	ND	2	ug/L	12/27/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/27/96
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	12/27/96

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: MW-5
AEN LAB NO: 9612373-02
AEN WORK ORDER: 9612373
CLIENT PROJ. ID: 34467-1

DATE SAMPLED: 12/23/96
DATE RECEIVED: 12/24/96
REPORT DATE: 01/03/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	12,000 *	50	ug/L	12/30/96
Toluene	108-88-3	2,200 *	50	ug/L	12/30/96
Ethylbenzene	100-41-4	2,700 *	50	ug/L	12/30/96
Xylenes, Total	1330-20-7	6,500 *	200	ug/L	12/30/96
Purgeable HCs as Gasoline	5030/GCFID	45 *	5	mg/L	12/30/96
Methyl t-Butyl Ether	1634-04-4	600 *	500	ug/L	12/30/96

Rls elevated due to high levels of target compounds.
Sample run dilute.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: SEP-EFF
AEN LAB NO: 9612373-03
AEN WORK ORDER: 9612373
CLIENT PROJ. ID: 34467-1

DATE SAMPLED: 12/23/96
DATE RECEIVED: 12/24/96
REPORT DATE: 01/03/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	15,000 *	100	ug/L	12/27/96
Toluene	108-88-3	26,000 *	100	ug/L	12/27/96
Ethylbenzene	100-41-4	1,800 *	100	ug/L	12/27/96
Xylenes, Total	1330-20-7	14,000 *	400	ug/L	12/27/96
Purgeable HCs as Gasoline	5030/GCFID	100 *	10	mg/L	12/27/96
Methyl t-Butyl Ether	1634-04-4	3,000 *	1000	ug/L	12/27/96

Rls elevated due to high levels of target compounds.
Sample run dilute.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9612373

CLIENT PROJECT ID: 34467-1

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9612373
INSTRUMENT: H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/27/96	MW-6	01	97
12/30/96	MW-5	02	108
12/27/96	SEP-EFF	03	91
QC Limits:			70-130

DATE ANALYZED: 12/26/96
SAMPLE SPIKED: 9612316-03
INSTRUMENT: H

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	26.1	99	4	85-109	17
Toluene	83.1	100	<1	87-111	16
Hydrocarbons as Gasoline	500	113	2	66-117	19

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

9612373 UOSY

Harding Lawson Associates
1855 Gateway Boulevard, Suite 500
Concord, California 94520
(510) 687-9660 • FAX (510) 687-9673

383 4th St, #300
Oakland CA 94607
510 451-1001
Fax 510 451-3165

CHAIN OF CUSTODY FORM

Lab: AEN ~~9612368~~

Job Number: 34467-1
Name/Location: City Blue
Project Manager: Dave Kleesattel
Samplers: James M'Carty
Recorder: James M'Carty (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Day	Time	STATION DESCRIPTION/ NOTES
	X							3		MW	-6		961	22	3		01A-C
	X							3		MW	-5		961	22	3		02A-C
	X							3		Sep	-Eff		961	22	3		03A-C

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	METALS	EPA 8015M/TPHg	EPA 8020/BTEX	EPA 8015M/TPHd,o	TPHg, BTEX, MTBE
								X
								X
								X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						Std TAT
						Results to Jim M'Carty Oakland Office

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
James M'Carty	[signature]	12/24 1030
[signature]		12/24 1110
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) [signature]	DATE/TIME 12/24/96 1400 ~~1110~~

METHOD OF SHIPMENT: cooler w/ ice

SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY

*rec'd COC w/o Samples, HLA courier dropped off samples 12/24 @1400.

Laboratory Copy (White) Project Office Copy Field or Office Copy (Pi...)

HARDING LAWSON ASSOCIATES
383 4TH ST. 3RD FL.
OAKLAND, CA 94607

ATTN: DAVE KLEESATTEL
CLIENT PROJ. ID: 11295-012
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 1219

REPORT DATE: 12/19/96

DATE(S) SAMPLED: 12/16/96

DATE RECEIVED: 12/16/96

AEN WORK ORDER: 9612236

PROJECT SUMMARY:

On December 16, 1996, this laboratory received 2 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARDING LAWSON ASSOCIATES

SAMPLE ID: BIO-EFF
AEN LAB NO: 9612236-01
AEN WORK ORDER: 9612236
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 12/16/96
DATE RECEIVED: 12/16/96
REPORT DATE: 12/19/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	450 *	3	ug/L	12/16/96
Toluene	108-88-3	790 *	3	ug/L	12/16/96
Ethylbenzene	100-41-4	52 *	3	ug/L	12/16/96
Xylenes, Total	1330-20-7	540 *	10	ug/L	12/16/96
Purgeable HCs as Gasoline	5030/GCFID	5.6 *	0.3	mg/L	12/16/96

Reporting limits elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: C3-EFF
AEN LAB NO: 9612236-02
AEN WORK ORDER: 9612236
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 12/16/96
DATE RECEIVED: 12/16/96
REPORT DATE: 12/19/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	ND	0.5	ug/L	12/16/96
Toluene	108-88-3	ND	0.5	ug/L	12/16/96
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/16/96
Xylenes, Total	1330-20-7	ND	2	ug/L	12/16/96
Purgeable HCs as Gasoline	5030/GCFID	0.16 *	0.05	mg/L	12/16/96

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9612236

CLIENT PROJECT ID: 11295-012

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9612236
INSTRUMENT: E
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/16/96	BIO-EFF	01	102
12/16/96	C3-EFF	02	106
QC Limits:			70-130

DATE ANALYZED: 12/09/96
SAMPLE SPIKED: 9611365-03
INSTRUMENT: E

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	MS Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	27.0	101	5	85-109	17
Toluene	75.7	108	4	87-111	16
Hydrocarbons as Gasoline	500	109	3	66-117	19

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

96/[redacted]36

Harding Lawson Associates
~~1855 Gateway Boulevard, Suite 500~~
~~Concord, California 94520~~
~~(510) 687-9660~~
383 4th St, 3rd floor
Oakland, CA 94607
510-451-1001

CHAIN OF CUSTODY FORM

R-3, S-4

Lab: AEN № 1219

Samplers: James McCarty

Job Number: 11295-012

Name/Location: City Blue

Project Manager: Dave Kleesattel

Recorder: James McCarty (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr / Wk / Seq	DATE: Yr	Mo	Day	Time	STATION DESCRIPTION/ NOTES
	X							3		Bio-Eff	96	12	16		* 01A-C
	X							3		C3-Eff	96	12	16		* 02A-C

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	METALS	EPA 8015M/TPHg	EPA 8020/BTEX	EPA 8015M/TPHd.o	TPHg/BTEX
								X
								X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						* One Day TAT Fax results to Dave Kleesattel (415) 777-9706 & Jim McCarty (510) 451-3165

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
James McCarty	[signature]	12-16-96 10:3[illegible]
[signature]	Lurena Pekhome	12-16-96 13:3[illegible]

DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

METHOD OF SHIPMENT
cooler with ice

SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

DEC 2 6 1996

HARDING LAWSON ASSOCIATES
383 FOURTH ST., THIRD FL.
OAKLAND, CA 94607

ATTN: DAVE KLEESATTEL
CLIENT PROJ. ID: 11295-012
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 1218

REPORT DATE: 12/24/96

DATE(S) SAMPLED: 12/11/96

DATE RECEIVED: 12/12/96

AEN WORK ORDER: 9612185

PROJECT SUMMARY:

On December 12, 1996, this laboratory received 2 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARDING LAWSON ASSOCIATES

SAMPLE ID: C1-EFF
AEN LAB NO: 9612185-01
AEN WORK ORDER: 9612185
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 12/11/96
DATE RECEIVED: 12/12/96
REPORT DATE: 12/24/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	4,300 *	30	ug/L	12/19/96
Toluene	108-88-3	8,500 *	30	ug/L	12/19/96
Ethylbenzene	100-41-4	750 *	30	ug/L	12/19/96
Xylenes, Total	1330-20-7	16,000 *	100	ug/L	12/19/96
Purgeable HCs as Gasoline	5030/GCFID	51 *	3	mg/L	12/19/96

Reporting limits elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: C2-EFF
AEN LAB NO: 9612185-02
AEN WORK ORDER: 9612185
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 12/11/96
DATE RECEIVED: 12/12/96
REPORT DATE: 12/24/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	2.3 *	0.5	ug/L	12/19/96
Toluene	108-88-3	8.0 *	0.5	ug/L	12/19/96
Ethylbenzene	100-41-4	7.8 *	0.5	ug/L	12/19/96
Xylenes, Total	1330-20-7	45 *	2	ug/L	12/19/96
Purgeable HCs as Gasoline	5030/GCFID	2.8 *	0.05	mg/L	12/19/96

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9612185

CLIENT PROJECT ID: 11295-012

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9612185
INSTRUMENT: H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/19/96	C1-EFF	01	90
12/19/96	C2-EFF	02	90
QC Limits:			70-130

DATE ANALYZED: 12/19/96
SAMPLE SPIKED: 9612128-02
INSTRUMENT: H

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	26.0	95	3	85-109	17
Toluene	83.1	104	3	87-111	16
Hydrocarbons as Gasoline	500	112	2	66-117	19

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

9612185
~~9612184~~ xxx 12/12/96

Harding Lawson Associates
1855 Gateway Boulevard, Suite 500
Concord, California 94520
(510) 687-9660

CHAIN OF CUSTODY FORM

№ 1218

Lab: AEN

Samplers: James McCarty

Job Number: 11295-012

Name/Location: City Blue

Project Manager: Dave Kleesattel

Recorder: James McCarty (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Day	Time	STATION DESCRIPTION/ NOTES
	X							3		Sep-eff			96	12	11		1 day TAT
								3		Bio-eff							1 day TAT 9612184
								3		C1-eff							Std TAT 01A-C
								3		C2-eff							Std TAT 02A-C
								3		C3-eff							1 day TAT 9612184

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	METALS	EPA 8015M/TPHg	EPA 8020/BTEX	EPA 8015M/TPHd,o	TPH gas/BTEX
								X
								X
								X
								X
								X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE

MISCELLANEOUS

Fax results to James McCarty, Concord office (510) 687-9673 & copy to Dave Kleesattel in S.F. office (415) 777-9706

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
James McCarty		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
		12/12/96 9:10
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

9:00 hr.

METHOD OF SHIPMENT: cooler with blue ice

SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY

[redacted] Laboratory Copy (White) [redacted] Project [redacted] Copy (Yellow) [redacted] Field or Office Copy (Pink) [redacted]

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARDING ASSOC.

DEC 2 0 1996

HARDING LAWSON ASSOCIATES
383 4TH ST. 3RD FL.
OAKLAND, CA 94607

REPORT DATE: 12/18/96

DATE(S) SAMPLED: 12/11/96

DATE RECEIVED: 12/12/96

AEN WORK ORDER: 9612184

ATTN: DAVE KLESSATTEL
CLIENT PROJ. ID: 11295-012
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 1218

PROJECT SUMMARY:

On December 12, 1996, this laboratory received 3 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARDING LAWSON ASSOCIATES

SAMPLE ID: SEP-EFF
AEN LAB NO: 9612184-01
AEN WORK ORDER: 9612184
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 12/11/96
DATE RECEIVED: 12/12/96
REPORT DATE: 12/18/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	11,000 *	50	ug/L	12/12/96
Toluene	108-88-3	17,000 *	50	ug/L	12/12/96
Ethylbenzene	100-41-4	1,500 *	50	ug/L	12/12/96
Xylenes, Total	1330-20-7	12,000 *	200	ug/L	12/12/96
Purgeable HCs as Gasoline	5030/GCFID	69 *	5	mg/L	12/12/96

Reporting limits elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: BIO-EFF
AEN LAB NO: 9612184-02
AEN WORK ORDER: 9612184
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 12/11/96
DATE RECEIVED: 12/12/96
REPORT DATE: 12/18/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	72 *	5	ug/L	12/12/96
Toluene	108-88-3	120 *	5	ug/L	12/12/96
Ethylbenzene	100-41-4	32 *	5	ug/L	12/12/96
Xylenes, Total	1330-20-7	1,000 *	20	ug/L	12/12/96
Purgeable HCs as Gasoline	5030/GCFID	5.3 *	0.5	mg/L	12/12/96

Reporting limits elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: C3-EFF
AEN LAB NO: 9612184-03
AEN WORK ORDER: 9612184
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 12/11/96
DATE RECEIVED: 12/12/96
REPORT DATE: 12/18/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	ND	0.5	ug/L	12/12/96
Toluene	108-88-3	ND	0.5	ug/L	12/12/96
Ethylbenzene	100-41-4	0.6 *	0.5	ug/L	12/12/96
Xylenes, Total	1330-20-7	ND	2	ug/L	12/12/96
Purgeable HCs as Gasoline	5030/GCFID	0.31 *	0.05	mg/L	12/12/96

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9612184

CLIENT PROJECT ID: 11295-012

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9612184
INSTRUMENT: H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/12/96	SEP-EFF	01	90
12/12/96	BIO-EFF	02	105
12/12/96	C3-EFF	03	101
QC Limits:			70-130

DATE ANALYZED: 12/11/96
SAMPLE SPIKED: 9612051-02
INSTRUMENT: H

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	26.0	100	13	85-109	17
Toluene	83.1	99	4	87-111	16
Hydrocarbons as Gasoline	500	104	2	66-117	19

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

9612184

CHAIN OF CUSTODY FORM

№ 1219

Lab: AEN

Harding Lawson Associates
1855 Gateway Boulevard, Suite 500
Concord, California 94520
(510) 687-9660

Samplers: James McCarty

Job Number: 11295-012

Name/Location: City Blue

Project Manager: Dave Kleesattel

Recorder: James McCarty (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Day	LAB NO. Time	STATION DESCRIPTION/ NOTES
	X							3		Sep	-	eff	96	12	11	01A-C	1 day TAT
								3		B1	0	- eff				02A-C	1 day TAT
								3		C1	-	eff				96/12/05	Std TAT
								3		C2	-	eff					Std TAT
								3		C3	-	eff				03A-C	1 day TAT

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	METALS	EPA 8015M/TPHg	EPA 8020/BTEX	EPA 8015M/TPHd,o	TPHgas/BTEX
								X
								X
								X
								X
								X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						Fax results to James McCarty, Concord office (510) 687-9673 & copy to Dave Kleesattel in SF office (415) 777-9706

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
James McCarty		12-12-96 9:00
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
	James C. Jensen	12-12-96 9:10
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

METHOD OF SHIPMENT: cooler with blue ice

SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY

[redacted] ory Cop[redacted] White [redacted] Projec[redacted] Copy Yellow [redacted] or Off[redacted] Pink

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARDING ASSOC.

OCT 2 1 1996

HARDING LAWSON ASSOCIATES
1855 GATEWAY BLVD., STE. 500
CONCORD, CA 94520

ATTN: JAMES McCARTY
CLIENT PROJ. ID: 11295.012
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 1212

REPORT DATE: 10/17/96

DATE(S) SAMPLED: 10/04/96

DATE RECEIVED: 10/04/96

AEN WORK ORDER: 9610049

PROJECT SUMMARY:

On October 4, 1996, this laboratory received 1 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARDING LAWSON ASSOCIATES

SAMPLE ID: CD-1 INF
AEN LAB NO: 9610049-01
AEN WORK ORDER: 9610049
CLIENT PROJ. ID: 11295.012

DATE SAMPLED: 10/04/96
DATE RECEIVED: 10/04/96
REPORT DATE: 10/17/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	2,900 *	300	ug/L	10/09/96
Toluene	108-88-3	13,000 *	300	ug/L	10/09/96
Ethylbenzene	100-41-4	7,000 *	300	ug/L	10/09/96
Xylenes, Total	1330-20-7	170,000 *	1000	ug/L	10/09/96
Purgeable HCs as Gasoline	5030/GCFID	2,100 *	30	mg/L	10/09/96

Reporting limits elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9610049

CLIENT PROJECT ID: 11295.012

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9610049
INSTRUMENT: F
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
10/09/96	CD-1 INF	01	88
QC Limits:			70-130

DATE ANALYZED: 10/09/96
SAMPLE SPIKED: 9610018-02
INSTRUMENT: F

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	19.4	84	7	85-109	17
Toluene	60.2	92	6	87-111	16
Hydrocarbons as Gasoline	500	110	3	66-117	19

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

END OF REPORT

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARDING ASSOC.

OCT 2 2 1996

HARDING LAWSON ASSOCIATES
1855 GATEWAY BLVD., STE. 500
CONCORD, CA 94520

ATTN: JAMES McCARTY
CLIENT PROJ. ID: 11295.012
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 1211

REPORT DATE: 10/18/96

DATE(S) SAMPLED: 10/04/96

DATE RECEIVED: 10/04/96

AEN WORK ORDER: 9610048

PROJECT SUMMARY:

On October 4, 1996, this laboratory received 2 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARDING LAWSON ASSOCIATES

SAMPLE ID: CD-2 EFF
AEN LAB NO: 9610048-01
AEN WORK ORDER: 9610048
CLIENT PROJ. ID: 11295.012

DATE SAMPLED: 10/04/96
DATE RECEIVED: 10/04/96
REPORT DATE: 10/18/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	3,700 *	100	ug/L	10/09/96
Toluene	108-88-3	8,400 *	100	ug/L	10/09/96
Ethylbenzene	100-41-4	1,600 *	100	ug/L	10/09/96
Xylenes, Total	1330-20-7	36,000 *	400	ug/L	10/09/96
Purgeable HCs as Gasoline	5030/GCFID	670 *	10	mg/L	10/09/96

Reporting limits elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HARDING LAWSON ASSOCIATES

SAMPLE ID: CD-3 EFF
AEN LAB NO: 9610048-02
AEN WORK ORDER: 9610048
CLIENT PROJ. ID: 11295.012

DATE SAMPLED: 10/04/96
DATE RECEIVED: 10/04/96
REPORT DATE: 10/18/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	ND	30	ug/L	10/15/96
Toluene	108-88-3	50 *	30	ug/L	10/15/96
Ethylbenzene	100-41-4	110 *	30	ug/L	10/15/96
Xylenes, Total	1330-20-7	870 *	100	ug/L	10/15/96
Purgeable HCs as Gasoline	5030/GCFID	44 *	3	mg/L	10/15/96

Reporting limits elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9610048

CLIENT PROJECT ID: 11295.012

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9610048
INSTRUMENT: F
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
10/09/96	CD-2 EFF	01	93
10/15/96	CD-3 EFF	02	100
QC Limits:			70-130

DATE ANALYZED: 10/09/96
SAMPLE SPIKED: 9610018-02
INSTRUMENT: F

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	19.4	84	7	85-109	17
Toluene	60.2	92	6	87-111	16
Hydrocarbons as Gasoline	500	110	3	66-117	19

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

Harding Lawson Associates
1855 Gateway Boulevard, Suite 500
Concord, California 94520
(510) 687-9660

CHAIN OF CUSTODY FORM

9610043

№ 1211

Lab: AEN

Samplers: James Mc Carty

Job Number: 11295-012

Name/Location: City Blue, Oakland

Project Manager: Dave Kleesattel

Recorder: James Mc Carty (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Day	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	METALS	EPA 8015M/TPHg	EPA 8020/BTEX	EPA 8015M/TPHd,o	TPHgas / BTEX
	X							3		CD-2		Eff	96	10	04	0707	Carbon #2 effluent									X
	X							3		CD-3		Eff	96	10	04	0709	Carbon #3 effluent									X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						Std TAT
						Results to SMEC, Concord
						Totalizer = 901,597 gal

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
James Mc Carty		Ronald C. Jensen	10/4/96 08:20
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

METHOD OF SHIPMENT

SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY

[redacted] Copy White [redacted] Project [redacted] Copy Yellow [redacted] or Office [redacted] Pink