STID 4148

January 16, 1996

31531 1

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

Quarterly Report
October 1, 1995 through December 31, 1995
Groundwater Remediation and Monitoring
Blue Print Service Facility
1700 Jefferson Street
Oakland, California

Dear Mr. Christoff:

This letter presents quarterly sampling results from the groundwater treatment system, groundwater monitoring and groundwater extraction wells at the Blue Print Service facility at 1700 Jefferson Street, Oakland, California. This report is for the period of October 1, 1995, through December 31, 1995. This report is intended to satisfy quarterly groundwater monitoring and reporting required by the Alameda County Health Care Services Agency.

BACKGROUND

Three underground gasoline storage tanks (USTs) were removed from the property in 1987 (Plate 1). Three groundwater monitoring wells were installed on the property to evaluate the distribution of petroleum hydrocarbons in the soil and groundwater and determine the direction of groundwater flow.

Gasoline was found 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 (Plate 1). 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.

The existing biodegradation groundwater treatment system began operation in June 1992. Groundwater is extracted from MW-1A and MW-4 for treatment in a 3,000-gallon bioreactor tank. The treated water from the bioreactor passes through carbon adsorption vessels before being discharged to the sanitary sewer.

TREATMENT SYSTEM STATUS

During this reporting period the groundwater treatment system has treated and discharged approximately 86,000 gallons of water to the sanitary sewer. Over this period the daily discharge flow rates have averaged approximately 1,150 gallons per day (gpd). During this reporting period total system down-time was approximately nine days.

A Blue Print Service Company technician performs routine maintenance twice a week and an HLA engineer or technician visits the site on a weekly basis to monitor the system performance, collect samples if necessary, and perform other maintenance functions as needed.

TREATMENT SYSTEM SAMPLING AND ANALYSIS

In accordance with the East Bay Municipal Utilities District (EBMUD) Wastewater Discharge Permit (Account No. 500-68191), HLA has sampled the treatment system effluent on a quarterly basis. The treatment system water samples were collected on November 16, 1995, from the bioreactor effluent before carbon adsorption, the effluent side of the first carbon vessel (CB-1), and the effluent side of the second carbon vessel (CB-2), before discharge to the sanitary sewer. On December 22, 1995, water samples were collected from the bioreactor effluent before carbon adsorption and from the effluent side of the first carbon vessel (CB-1) to monitor CB-1 for breakthrough of detectable hydrocarbons. The sampling locations are shown on Plate 2, Process Flow and Sampling Locations, and the analytical results are summarized in Table 1. The laboratory reports are presented in Appendix A.

HLA collects water samples from brass sampling ports into 40-milliliter volatile organic analysis (VOA) 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).

The treatment system effluent was last sampled by an EBMUD representative on October 26, 1995.

SYSTEM DISCHARGE

HLA received the analytical results from the November 16, 1995 samples on November 29, 1995. The analytical results for the sample of the effluent to the sanitary sewer (sample number CD#2-OUT) contained xylenes that exceeded the discharge limits for these compounds. Xylene was detected at a concentration of 10 micrograms per liter (μg/l). The discharge limit for xylene is 5 μg/l.

In response to the effluent concentrations, HLA stopped all discharge from the treatment system on November 29, 1995 and notified EBMUD on December 1, 1995. Replacement carbon vessels were ordered that day and HLA replaced carbon vessel CB-1 and CB-2 with new carbon vessels on December 1, 1995. Further details were provided to EBMUD in a letter dated December 13, 1995.

On December 28, 1995 HLA received analytical results for CB-1 influent and effluent samples collected on December 22,1995. Detectable concentrations of TPHg, Benzene, Toluene, and Xylene were reported in the CB-1 effluent sample. HLA sampled the second carbon vessel influent and effluent on December 29, 1995. No detectable concentrations of BTEX were detected in the effluent sample. TPHg was detected at a concentration of 0.1 milligrams per liter (mg/l).

To reduce the potential for discharges that exceed the established limits in the future, HLA is monitoring the carbon vessel influent and effluent more frequently. HLA is collecting and analyzing influent and effluent samples at a minimum frequency of once every 30 days or 40,000 gallons discharged, whichever comes first. As an added precaution, a third carbon vessel was put on line on December 29, 1995, before final system discharge.

The most recent breakthrough occurred after approximately 70,000 gallons had been treated by CB-1 and 80,000 gallons had been treated by CB-2. At a 1,000 gpd average discharge rate the revised sampling frequency discussed above (every 30 days or 40,000 gallons) should provide adequate monitoring of the carbon vessels for breakthrough and saturation.

GROUNDWATER SAMPLING AND ANALYSIS

HLA sampled Wells MW-1A, MW-3, MW-4, and MW-5 on December 13, 1995. During construction of the present BPS facility, well MW-2 was damaged and abandoned. Monitoring wells MW-3 and MW-5 were sampled after checking for separate-phase gasoline, measuring the water levels, purging at least three well volumes from each, and measuring the pH, conductivity, and temperature of the purge water. Three 40-milliliter VOA vials of water were collected from each well with a Teflon bailer. Purge water from MW-3 contained a visible hydrocarbon sheen.

The two extraction wells, MW-1A and MW-4, were sampled from brass sampling ports in the flow line from the wells to the treatment system (Plate 2). Three 40-milliliter VOA vials were collected from each port.

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 for TPHg and EPA Test Method 8020 for BTEX. The analytical results are summarized in Table 2 along with past results. The laboratory report for the December 13, 1995, samples is presented in Appendix B.

DISCUSSION

HLA expects to continue quarterly groundwater monitoring and reporting as required by Alameda County and treatment system discharge monitoring as discussed above with semiannual reporting as required by EBMUD. Groundwater sampling will be performed for the first quarter of 1996 in March, and system effluent monitoring will be performed on or before January 22, 1995.

January 16, 1996
31531 1
Mr. Jeff Christoff
Blue Print Service Company

If you have any questions, please contact David Scrivner at (510) 687-9660.

Yours very truly,
HARDING LAWSON ASSOCIATES

FOR James McCarty
Staff Engineer

David F. Scrivner, P.E.
Civil Engineer

Terence J. McManus
Principal Environmental Scientist

JGM/DFS/DRK/TJM/ly 31531/035546L.DOC

Attachments: Table 1 - Groundwater Treatment System Analytical Results
Table 2 - Groundwater Analytical Results
Table 3 - Flow Totalizer Readings
Plate 1 - Site Plan
Plate 2 - Process Flow and Sampling Locations
Appendix A - Treatment System Sample Laboratory Reports
Appendix B - Groundwater Sample Laboratory Reports

cc: Mr. Thomas F. Peacock
Alameda County Health Care Services Agency
Division of Hazardous Materials
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502-6577

Table 1. Groundwater Treatment System Analytical Results

Date/ Analytes	Bioreactor Influent (1)	Bioreactor Effluent (2)	First Carbon Bed Effluent (3)	Sanitary Sewer Influent (4)
June 16, 1992				
TPHg	NA	3.3	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
June 19, 1992				
TPHg	180	1.6	ND <.05	NA
Benzene	18,000	1.6	ND <0.3	NA
Toluene	31,000	5.0	ND <0.3	NA
Ethylbenzene	2,200	ND <0.3	ND <0.3	NA
Xylene	16,000	150	ND <0.3	NA
July 2, 1992				
TPHg	160	0.210	ND <.05	NA
Benzene	14,000	1.4	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	1.0	ND <0.3	NA
August 20, 1992				
TPHg	190	6.4	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
September 15, 1992				
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

Table 1. (Continued)

Date/ Analytes	Bioreactor Influent (1)	Bioreactor Effluent (2)	First Carbon Bed Effluent (3)	Sanitary Sewer Influent (4)
March 3, 1994				
TPHg	80	3.9	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
April 7, 1994				
TPHg	79	0.28	ND <.05	NA
Benzene	8,300	16	3.7	NA
Toluene	19,000	4.2	ND <0.5	NA
Ethylbenzene	990	ND <0.5	ND <0.5	NA
Xylene	9,300	1.9	ND <0.5	NA
May 13, 1994				
TPHg	220	0.61	ND <.05	NA
Benzene	12,000	45	ND <0.5	NA
Toluene	23,000	7.1	ND <0.5	NA
Ethylbenzene	1,700	0.8	ND <0.5	NA
Xylene	17,000	11	ND <0.5	NA
September 29, 1994				
TPHg	96	0.76	NA	ND <.05
Benzene	8,000	4.9	NA	ND <0.5
Toluene	16,000	7.8	NA	ND <0.5
Ethylbenzene	ND <250	ND <2.5	NA	ND <0.5
Xylene	9,000	8.7	NA	ND <0.5
December 19, 1994				
TPHg	NA	5.5	0.59	ND <.05
Benzene	NA	140	60	1.0
Toluene	NA	100	14	0.5
Ethylbenzene	NA	ND<5	ND<0.5	ND <0.5
Xylene	NA	1,600	100	ND <0.5

Table 1. (Continued)

Date/ Analytes	Bioreactor Influent (1)	Bioreactor Effluent (2)	First Carbon Bed Effluent (3)	Sanitary Sewer Influent (4)
January 5, 1995				
TPHg	NA	NA	0.20	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
April 14, 1995				
TPHg	NA	2.3	0.90	NA
Benzene	NA	36	22	NA
Toluene	NA	6	3	NA
Ethylbenzene	NA	3	0.6	NA
Xylene	NA	58	13	NA
May 18, 1995				
TPHg	41	0.740	0.100	ND <.05
Benzene	4,400	22	2	ND<0.5
Toluene	5,700	9.4	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
September 7, 1995				
TPHg	NA	3.6	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
November 16, 1995				
TPHg	NA	3.4	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

Table 1. (Continued)

Date/ Analytes	Bioreactor Influent (1)	Bioreactor Effluent (2)	First Carbon Bed Effluent (3)	Sanitary Sewer Influent (4)
December 22, 1995				
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	1300	13	NA
December 29, 1995				
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

(1) = Sample Location Identification Number (see Plate 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
NA = Not analyzed

Table 2. Groundwater Analytical Results

Date/ Analytes	MW-1A	MW-3	MW-4	MW-5
August 1, 1991				
TPHg	350	74	86	120
Benzene	17,000	1,600	1,500	20,000
Toluene	31,000	4,600	6,200	14,000
Ethylbenzene	3,000	670	1,000	1,900
Xylenes	22,000	4,300	7,300	4,900
September 30, 1992				
TPHg	NA	NA	NA	51
Benzene	NA	NA	NA	13,000
Toluene	NA	NA	NA	5,900
Ethylbenzene	NA	NA	NA	1,400
Xylene	NA	NA	NA	2,600
March 30, 1993				
TPHg	NA	NA	NA	74
Benzene	NA	NA	NA	16,000
Toluene	NA	NA	NA	5,000
Ethylbenzene	NA	NA	NA	1,800
Xylene	NA	NA	NA	2,700
January 13, 1994				
TPHg	NA	NA	NA	80
Benzene	NA	NA	NA	19,000
Toluene	NA	NA	NA	8,200
Ethylbenzene	NA	NA	NA	1,400
Xylene	NA	NA	NA	2,700
April 13, 1994				
TPHg	170	NA	58	63
Benzene	17,000	NA	1,500	14,000
Toluene	31,000	NA	2,500	3,500
Ethylbenzene	2,100	NA	520	1,500
Xylene	14,000	NA	3,200	2,100

Table 2. (continued)

Date/ Analytes	MW-1A	MW-3	MW-4	MW-5
June 29, 1994				
TPHg	95	39	16	64
Benzene	16,000	3,200	1,300	29,000
Toluene	21,000	2,900	790	5,400
Ethylbenzene	1,500	580	51	2,800
Xylenes	12,000	4,300	3,400	4,500
December 8, 1994				
TPHg	190	4,600 *	92	59
Benzene	13,000	1,500	1,700	13,000
Toluene	21,000	4,200	4,100	3,800
Ethylbenzene	1,400	6,000	310	1,800
Xylenes	11,000	95,000	5,400	2,900
April 3, 1995				
TPHg	67	51	35	51
Benzene	11,000	1,100	1,200	15,000
Toluene	13,000	2,300	3,400	2,200
Ethylbenzene	910	580	280	2,800
Xylenes	9,800	4,800	5,800	4,500
June 27, 1995				
TPHg	53	20	13	41
Benzene	11,000	270	1,300	12,000
Toluene	9,900	550	1,600	2,100
Ethylbenzene	500	190	77	1,400
Xylenes	6,300	1,700	1,800	1,600
September 19, 1995				
TPHg	52	6.2	14	50
Benzene	8,900	70	2,200	16,000
Toluene	9,200	140	2,100	2,700
Ethylbenzene	710	68	110	2,000
Xylenes	6,800	500	2,100	2,100

Table 2. (continued)

Date/ Analytes	MW-1A	MW-3	MW-4	MW-5
December 13, 1995				
TPHg	62	19	11	45
Benzene	9,900	220	630	13,000
Toluene	11,000	480	470	2,100
Ethylbenzene	790	140	14	1,600
Xylenes	5,300	1,700	1,800	1,900

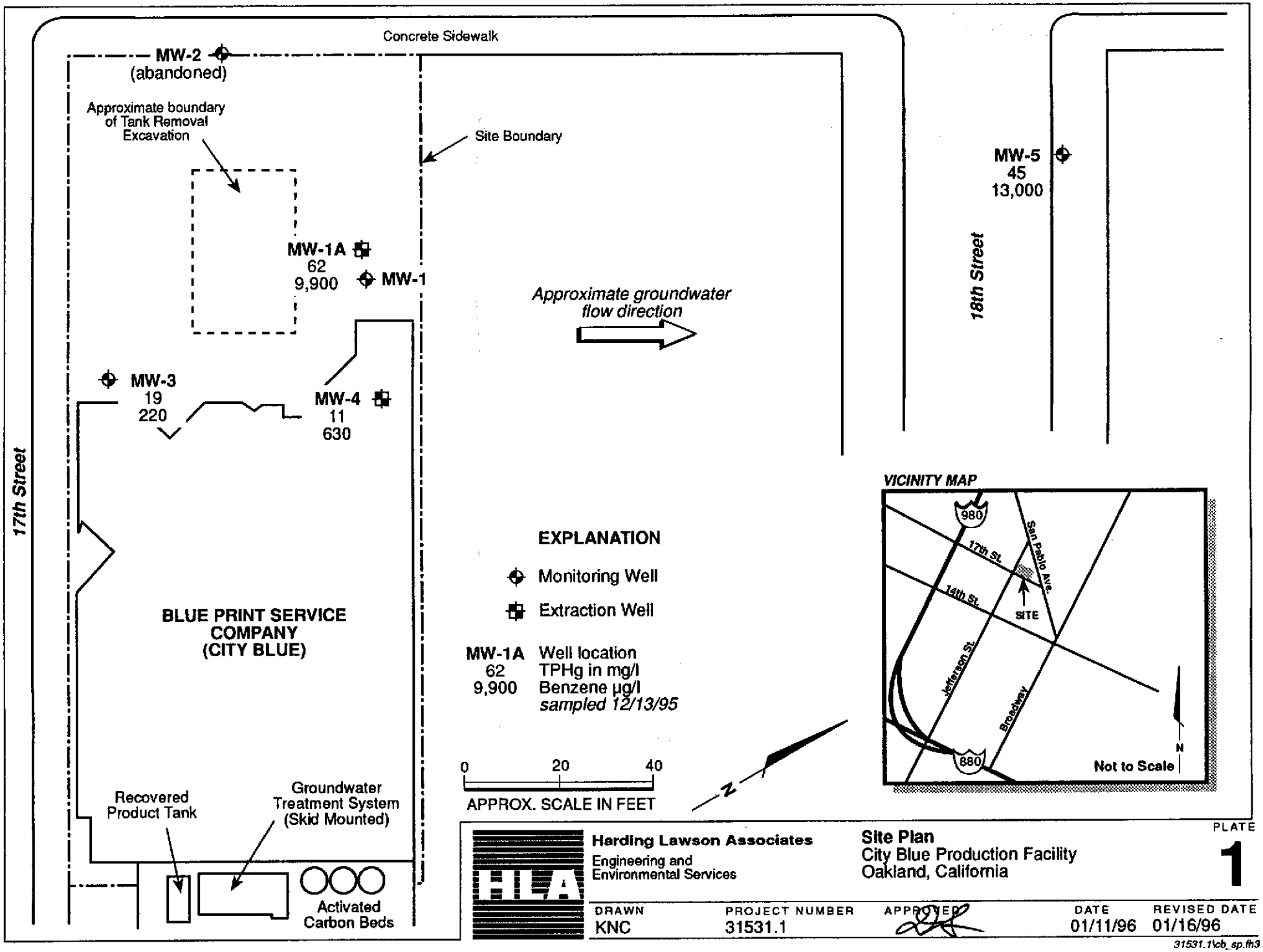
TPHg concentrations presented in milligrams per liter (mg/l)
Benzene, Toluene, Ethylbenzene, and Xylenes concentrations presented in micrograms per liter (µg/l)
* = This sample contained a visible amount of separate-phase gasoline.
TPHg = Total petroleum hydrocarbons as gasoline
NA = Not analyzed

Table 3. Flow Totalizer Readings

Date	Flow Total to Sanitary Sewer (gallons)
06/16/92	1,000
06/17/92	2,957
07/02/92	13,040
07/10/92	14,470
07/24/92	19,450
09/15/92	51,190
10/15/92	70,370
10/23/92	75,470
03/04/94	77,866
03/15/94	89,800
03/30/94	104,690
04/13/94	118,760
05/11/94	123,180
05/23/94	133,280
06/07/94	149,640
06/29/94	166,670
07/11/94	178,500
07/27/94	187,940
08/24/94	196,180
09/23/94	196,698
10/13/94	217,782
10/30/94	227,996
11/15/94	236,789
12/08/94	260,048
12/27/94	267,350
01/03/95	274,770
01/16/95	277,003
02/11/95	291,743
04/05/95	295,710
04/28/95	327,941

Table 3. (continued)

Date	Flow Total to Sanitary Sewer (gallons)
05/08/95	341,575
05/25/95	363,638
06/21/95	386,700
07/02/95	401,378
07/28/95	413,898
08/16/95	443,508
09/07/95	469,528
09/26/95	488,090
10/02/95	496,110
10/19/95	517,220
11/01/95	533,054
11/15/95	549,641
12/01/95	566,523
12/22/95	581,899
12/29/95	587,740



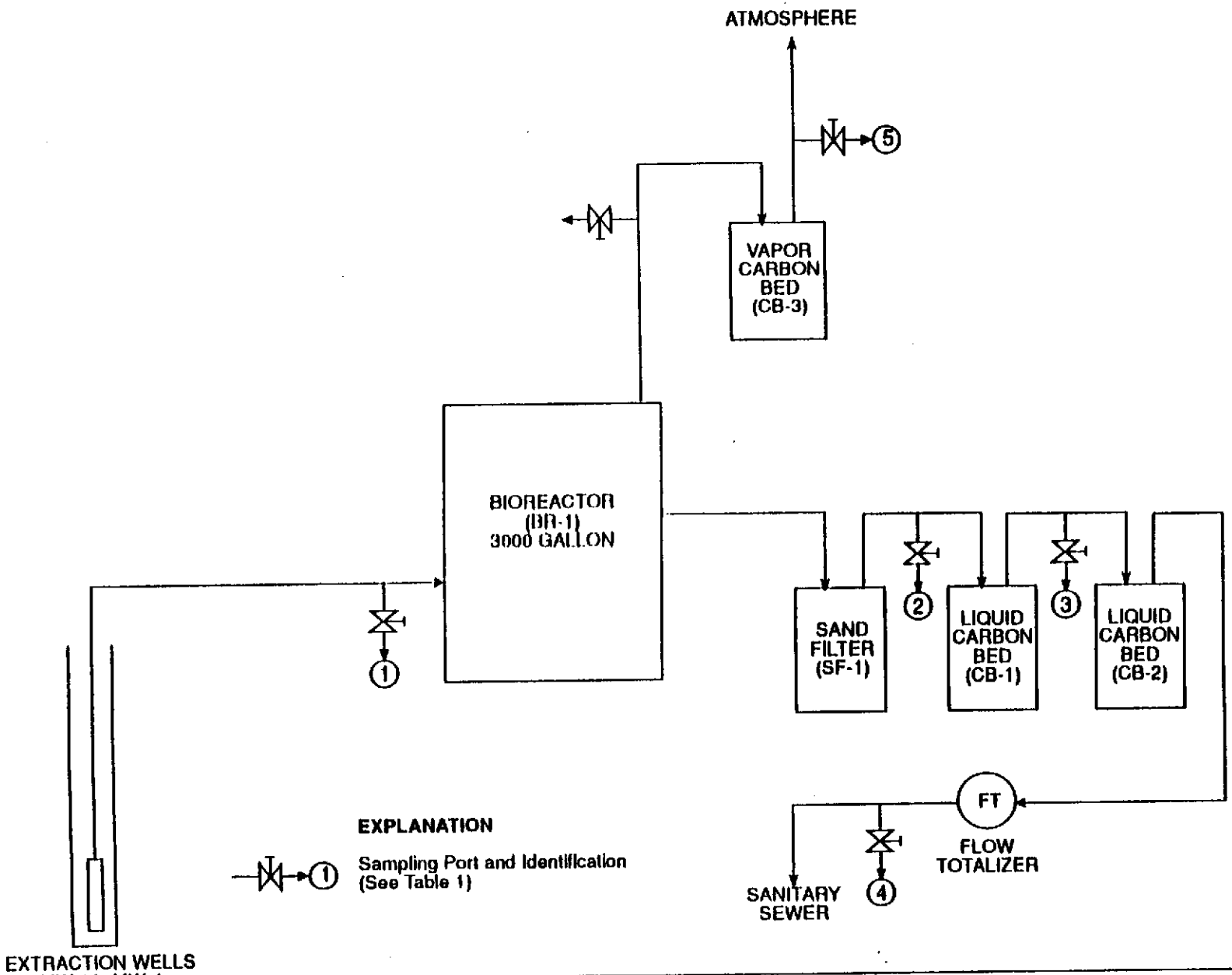
Harding Lawson Associates
Engineering and Environmental Services

Site Plan
City Blue Production Facility
Oakland, California

PLATE **1**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
KNC	31531.1		01/11/96	01/16/96

31531.1\cb_sp.fh3



Harding Lawson Associates
Engineering and Environmental Services

Process Flow and Sampling Locations
City Blue Groundwater Treatment System
1700 Jefferson Street
Oakland, California

PLATE **2**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
RK	31531.1		10/5/95	

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARDING ASSOC
DEC 04 1995

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

ATTN: DAVE SCRIVNER
CLIENT PROJ. ID: 11295-012
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 0681

REPORT DATE: 11/30/95

DATE(S) SAMPLED: 11/16/95

DATE RECEIVED: 11/16/95

AEN WORK ORDER: 9511278

PROJECT SUMMARY:

On November 16, 1995, this laboratory received 3 water sample(s).

Client requested sample(s) be analyzed for organic 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-IN
AEN LAB NO: 9511278-01
AEN WORK ORDER: 9511278
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 11/16/95
DATE RECEIVED: 11/16/95
REPORT DATE: 11/30/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	18 *	0.5	ug/L	11/24/95
Toluene	108-88-3	11 *	0.5	ug/L	11/24/95
Ethylbenzene	100-41-4	7 *	0.5	ug/L	11/24/95
Xylenes, Total	1330-20-7	90 *	2	ug/L	11/24/95
Purgeable HCs as Gasoline	5030/GCFID	3.4 *	0.05	mg/L	11/24/95

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

HARDING LAWSON ASSOCIATES

SAMPLE ID: CD#1-OUT
AEN LAB NO: 9511278-02
AEN WORK ORDER: 9511278
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 11/16/95
DATE RECEIVED: 11/16/95
REPORT DATE: 11/30/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	17 *	0.5	ug/L	11/24/95
Toluene	108-88-3	18 *	0.5	ug/L	11/24/95
Ethylbenzene	100-41-4	6 *	0.5	ug/L	11/24/95
Xylenes, Total	1330-20-7	74 *	2	ug/L	11/24/95
Purgeable HCs as Gasoline	5030/GCFID	2.8 *	0.05	mg/L	11/24/95

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

HARDING LAWSON ASSOCIATES

SAMPLE ID: CD#2-OUT
AEN LAB NO: 9511278-03
AEN WORK ORDER: 9511278
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 11/16/95
DATE RECEIVED: 11/16/95
REPORT DATE: 11/30/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	3 *	0.5	ug/L	11/24/95
Toluene	108-88-3	2 *	0.5	ug/L	11/24/95
Ethylbenzene	100-41-4	0.9 *	0.5	ug/L	11/24/95
Xylenes, Total	1330-20-7	10 *	2	ug/L	11/24/95
Purgeable HCs as Gasoline	5030/GCFID	0.8 *	0.05	mg/L	11/24/95

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

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9511278

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: 9511278
INSTRUMENT: F
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
11/24/95	CD#1-IN	01	96
11/24/95	CD#1-OUT	02	92
11/24/95	CD#2-OUT	03	92
QC Limits:			92-109

DATE ANALYZED: 11/24/95
SAMPLE SPIKED: LCS
INSTRUMENT: F

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	19.2	92	5	60-120	20
Toluene	56.5	106	8	60-120	20
Hydrocarbons as Gasoline	500	120	10	60-120	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 • FAX (510) 687-9673

YC-3,5-2

CHAIN OF CUSTODY FORM 9511278

Lab: AEN

Samplers: Ron Reindl

Job Number: 11295-012

Name/Location: City Blue

Project Manager: Dave Scrivner

Recorder: _____ (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 624/6240	EPA 625/8270	METALS	EPA 8015M/TPHg/BTEX	EPA 8020/BTEX	EPA 8015M/TPHd.o
01A-C	X								X	CD	91	1-in	95	11	16	1700						X	X	
02A-C	X								X	CD	91	1-out	95	11	16	1700						X	X	
03A-C	X								X	CD	92	2-out	95	11	16	1700						X	X	

STANDARD TAT

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

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
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 11/16 1808

METHOD OF SHIPMENT

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

JAN 02 '96

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

ATTN: DAVE SCRIVNER
CLIENT PROJ. ID: 11295-012
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 0845

REPORT DATE: 12/28/95

DATE(S) SAMPLED: 12/22/95

DATE RECEIVED: 12/26/95

AEN WORK ORDER: 9512353

PROJECT SUMMARY:

On December 26, 1995, this laboratory received 2 water sample(s).

Client requested sample(s) be analyzed for organic 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-IN
AEN LAB NO: 9512353-01
AEN WORK ORDER: 9512353
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 12/22/95
DATE RECEIVED: 12/26/95
REPORT DATE: 12/28/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	95 *	3	ug/L	12/27/95
Toluene	108-88-3	38 *	3	ug/L	12/27/95
Ethylbenzene	100-41-4	6 *	3	ug/L	12/27/95
Xylenes, Total	1330-20-7	1,300 *	10	ug/L	12/27/95
Purgeable HCs as Gasoline	5030/GCFID	10 *	0.3	mg/L	12/27/95

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 #1-OUT
AEN LAB NO: 9512353-02
AEN WORK ORDER: 9512353
CLIENT PROJ. ID: 11295-012

DATE SAMPLED: 12/22/95
DATE RECEIVED: 12/26/95
REPORT DATE: 12/28/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	1 *	0.5	ug/L	12/27/95
Toluene	108-88-3	0.6 *	0.5	ug/L	12/27/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/27/95
Xylenes, Total	1330-20-7	13 *	2	ug/L	12/27/95
Purgeable HCs as Gasoline	5030/GCFID	0.54 *	0.05	mg/L	12/27/95

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

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9512353

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: 9512353
INSTRUMENT: F
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/27/95	CD #1-IN	01	88
12/27/95	CD #1-OUT	02	86
QC Limits:			70-130

DATE ANALYZED: 12/26/95
SAMPLE SPIKED: LCS
INSTRUMENT: F

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	17.9	80	13	60-120	20
Toluene	53.9	87	10	60-120	20
Hydrocarbons as Gasoline	500	98	5	60-120	20

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

*** END OF REPORT ***

0845

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

CHAIN OF CUSTODY FORM

R-3, S-1 Lab: AEN 9512353

Samplers: Ron Reindl

Job Number: 11295-012

Name/Location: City Blue

Project Manager: Dave Scrivner

Recorder: _____ (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							X			CD#1	-IN	95	12	22	1445	3-VOAs D1A-C
	X							X			CD#1	-OUT	95	12	22	1445	" " D2A-C

Need results by Thursday, 12-28-95 4pm ish

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

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

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME 12-26-95 9:20
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME 12-26-95 11:30
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) Dina Mueller	DATE/TIME

METHOD OF SHIPMENT

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

JAN 1 5 1996

HARDING LAWSON

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

REPORT DATE: 01/12/96

DATE(S) SAMPLED: 12/29/95

DATE RECEIVED: 12/29/95

AEN WORK ORDER: 9512388

ATTN: DAVE SCRIVNER
CLIENT PROJ. ID: 11295.012
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 0651

PROJECT SUMMARY:

On December 29, 1995, this laboratory received 2 water sample(s).

Client requested sample(s) be analyzed for organic 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-INF
AEN LAB NO: 9512388-01
AEN WORK ORDER: 9512388
CLIENT PROJ. ID: 11295.012

DATE SAMPLED: 12/29/95
DATE RECEIVED: 12/29/95
REPORT DATE: 01/12/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	5 *	0.5	ug/L	01/05/96
Toluene	108-88-3	3 *	0.5	ug/L	01/05/96
Ethylbenzene	100-41-4	1 *	0.5	ug/L	01/05/96
Xylenes, Total	1330-20-7	19 *	2	ug/L	01/05/96
Purgeable HCs as Gasoline	5030/GCFID	0.7 *	0.05	mg/L	01/05/96

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

HARDING LAWSON ASSOCIATES

SAMPLE ID: CD#2-EFF
AEN LAB NO: 9512388-02
AEN WORK ORDER: 9512388
CLIENT PROJ. ID: 11295.012

DATE SAMPLED: 12/29/95
DATE RECEIVED: 12/29/95
REPORT DATE: 01/12/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	ND	0.5	ug/L	01/05/96
Toluene	108-88-3	ND	0.5	ug/L	01/05/96
Ethylbenzene	100-41-4	ND	0.5	ug/L	01/05/96
Xylenes, Total	1330-20-7	ND	2	ug/L	01/05/96
Purgeable HCs as Gasoline	5030/GCFID	0.1 *	0.05	mg/L	01/05/96

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

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9512388

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: 9512388
INSTRUMENT: F
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
01/05/96	CD#2-INF	01	92
01/05/96	CD#2-EFF	02	94
QC Limits:			70-130

DATE ANALYZED: 01/05/96
SAMPLE SPIKED: LCS
INSTRUMENT: F

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	16.9	107	4	60-120	20
Toluene	51.9	113	3	60-120	20
Hydrocarbons as Gasoline	500	117	3	60-120	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 • FAX (510) 687-9673

CHAIN OF CUSTODY FORM

Lab: AEN 9512388

Samplers: James M'Cart

Job Number: 11295.012

Name/Location: City Blue

Project Manager: Dave Scrivner

Recorder: James M'Cart (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		CD	#2-	INF	95	12	29	0915	D1ABC
	X							3		CD	#2-	EFF	95	12	29	0915	D2ABC

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
						X	X	
						X	X	

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						5d TAT

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) James M'Cart	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
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) Lynn Gillespie	DATE/TIME 12/29/95 1130
METHOD OF SHIPMENT		
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

HARDING ASSOC.
DEC 29 1995

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

ATTN: DAVE SCRIVNER
CLIENT PROJ. ID: 31531-1
CLIENT PROJ. NAME: CITY BLUE
C.O.C. NUMBER: 0844

REPORT DATE: 12/28/95

DATE(S) SAMPLED: 12/13/95

DATE RECEIVED: 12/14/95

AEN WORK ORDER: 9512174

PROJECT SUMMARY:

On December 14, 1995, this laboratory received 4 water sample(s).

Client requested sample(s) be analyzed for organic 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-3
AEN LAB NO: 9512174-01
AEN WORK ORDER: 9512174
CLIENT PROJ. ID: 31531-1

DATE SAMPLED: 12/13/95
DATE RECEIVED: 12/14/95
REPORT DATE: 12/28/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	220 *	5	ug/L	12/22/95
Toluene	108-88-3	480 *	5	ug/L	12/22/95
Ethylbenzene	100-41-4	140 *	5	ug/L	12/22/95
Xylenes, Total	1330-20-7	1,700 *	20	ug/L	12/22/95
Purgeable HCs as Gasoline	5030/GCFID	19 *	0.5	mg/L	12/22/95

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: 9512174-02
AEN WORK ORDER: 9512174
CLIENT PROJ. ID: 31531-1

DATE SAMPLED: 12/13/95
DATE RECEIVED: 12/14/95
REPORT DATE: 12/28/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	13,000 *	10	ug/L	12/27/95
Toluene	108-88-3	2,100 *	10	ug/L	12/22/95
Ethylbenzene	100-41-4	1,600 *	10	ug/L	12/22/95
Xylenes, Total	1330-20-7	1,900 *	40	ug/L	12/22/95
Purgeable HCs as Gasoline	5030/GCFID	45 *	1	mg/L	12/22/95

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-1A
AEN LAB NO: 9512174-03
AEN WORK ORDER: 9512174
CLIENT PROJ. ID: 31531-1

DATE SAMPLED: 12/13/95
DATE RECEIVED: 12/14/95
REPORT DATE: 12/28/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	9,900 *	100	ug/L	12/27/95
Toluene	108-88-3	11,000 *	100	ug/L	12/27/95
Ethylbenzene	100-41-4	790 *	100	ug/L	12/27/95
Xylenes, Total	1330-20-7	5,300 *	400	ug/L	12/27/95
Purgeable HCs as Gasoline	5030/GCFID	62 *	10	mg/L	12/27/95

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: 9512174-04
AEN WORK ORDER: 9512174
CLIENT PROJ. ID: 31531-1

DATE SAMPLED: 12/13/95
DATE RECEIVED: 12/14/95
REPORT DATE: 12/28/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	630 *	5	ug/L	12/22/95
Toluene	108-88-3	470 *	5	ug/L	12/22/95
Ethylbenzene	100-41-4	14 *	5	ug/L	12/22/95
Xylenes, Total	1330-20-7	1,800 *	20	ug/L	12/22/95
Purgeable HCs as Gasoline	5030/GCFID	11 *	0.5	mg/L	12/22/95

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: 9512174

CLIENT PROJECT ID: 31531-1

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: 9512174
INSTRUMENT: E, F
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/22/95	MW-3	01	94
12/22/95	MW-5	02	95
12/27/95	MW-1A	03	107
12/22/95	MW-4	04	97
QC Limits:			70-130

DATE ANALYZED: 12/22/95
SAMPLE SPIKED: 9512194-19
INSTRUMENT: F

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	17.9	91	7	85-109	17
Toluene	53.9	99	7	87-111	16
Hydrocarbons as Gasoline	500	112	10	66-117	19

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

*** END OF REPORT ***

R-3,5-3 0844

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

CHAIN OF CUSTODY FORM

Lab: AEN 9512174

Samplers: Ron Reindl

Job Number: 31531-1 & 11295-012

Name/Location: City Blue

Project Manager: Dave Scrivner

Recorder: (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	Carbon Grains	# CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Day	Time
	X								X		MW	3		95	12	13	1436
	X								X		MW	5		95	12	13	1520
	X								X		MW	1	A	95	12	13	1540
	X								X		MW	4		95	12	13	1545
					X						CS	1		95	12	13	1650

STATION DESCRIPTION/ NOTES

Job # 31531-1

3 VOAs 01A-C
02A-C
03A-C
04A-C

Job # 11295-012

SS Liners 4 into 1 Composite 95/12/13

STANDARD 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	TPH-g/BTEX	EPA 8240-Total	EPA 8240-TCLP
								X		
								X		
								X		
								X		
									X	X

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

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME 12-14-95 11:20
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME 12-14-95 11:20
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) Lai Pruett	DATE/TIME 12/14/95 1120

METHOD OF SHIPMENT

SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY

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