Harding Lawson Associates

90 SEP 19 AM 10: 56

September 18, 1990

18106,001.04

Alameda County Environmental Health Services
Hazardous Materials Department
80 Swan Way, Room 200
Oakland, California 94621

Attention: Mr. Paul Smith

Gentlemen:

Groundwater Remediation
City Blue Production Facility
1700 Jefferson Street
Oakland, California

Harding Lawson Associates (HLA) has performed site characterization activities at the above-referenced site for Blue Print Services Company, the current owner of this site. Groundwater beneath the site contains dissolved gasoline constituents. **Floating product is also present at the groundwater table.** Enclosed are three reports, two of which were not previously forwarded to you. The reports are titled "Off-Site Hydrogeologic Investigation, City Blue Production Facility Site, 17th and Jefferson Streets, Oakland, California," dated November 28, 1988 (previously submitted); "Aquifer Testing and Groundwater Treatment Cost Feasibility Study, City Blue Production Facility, 1700 Jefferson Street, Oakland, California," dated February 2, 1990; and "Summary Report, Bioremediation Treatability Study, City Blue Production Facility," dated June 18, 1990.

On basis of these investigations, HLA prepared the enclosed detailed groundwater treatment system plans and specifications. **The groundwater treatment system utilizes biological degradation technology to treat the groundwater prior to discharge into the sanitary sewer.**

As discussed in our telephone conversation on September 17, 1990, I will call you in one week to obtain the name of your department representative who will review the project. I hope to arrange a meeting with your representative to be held in approximately 2 weeks. The purpose of the meeting will be to answer any questions you may have regarding our system. Upon receiving approval from you, the Bay Area Air Quality Management District, and the East Bay Municipal Utilities District, we plan to proceed with construction of the system.

If you have any questions, please call.

Yours very truly,

HARDING LAWSON ASSOCIATES

Richard F. McCartney
Hydrogeologist

RFM/msj/A8944-CT39

Enclosures

cc: Blue Print Services Company
149 Second Street
San Francisco, California 94105
Attention: Mr. Paul Koze

Table 1. Groundwater Analytical Results
Groundwater Monitoring Wells
1700 Jefferson Street
Oakland, California

Date/ Analytes	MW-1A	MW-3	MW-4	MW-5
August 1, 1991				
TPHG	350,000 (1,700,000)	74,000	86,000	120,000
Benzene	17,000 (22,000)	1,600	1,500	20,000
Toluene	31,000 (80,000)	4,600	6,200	14,000
Ethylbenzene	3,000 (19,000)	670	1,000	1,900
Xylenes	22,000 (120,000)	4,300	7,300	4,900
June 29, 1994				
TPHg	95,000	39,000	16,000	64,000
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

All concentrations presented in micrograms per liter ($\mu g/l$)
MW-1A concentrations in parentheses are from a duplicate sample

Table 2. Results of Air and Groundwater Chemical Analysis
Groundwater Treatment System
1700 Jefferson Street
Oakland, California

Date/ Analytes	Bioreactor Influent (1)	Bioreactor Effluent (2)	First Carbon Bed Effluent (3)	Sanitary Sewer Influent (4)	Vapor Phase Carbon Effluent (Air) (5)	MW-5
August 1, 1991						
TPHg	NA	NA	NA	NA	NA	120,000
Benzene	NA	NA	NA	NA	NA	20,000
Toluene	NA	NA	NA	NA	NA	14,000
Ethylbenzene	NA	NA	NA	NA	NA	1,900
Xylene	NA	NA	NA	NA	NA	4,900
June 16, 1992						
TPHg	NA	3,300	ND <50	NA	ND <30,000	NA
Benzene	NA	220	ND <0.3	NA	ND <85	NA
Toluene	NA	460	ND <0.3	NA	ND <250	NA
Ethylbenzene	NA	35	ND <0.3	NA	ND <65	NA
Xylene	NA	290	ND <0.3	NA	ND <250	NA
June 17, 1992						
TPHg	NA	43,000	ND <50	NA	ND <30,000	NA
Benzene	NA	4,900	ND <0.3	NA	ND <85	NA
Toluene	NA	7,600	ND <0.3	NA	ND <250	NA
Ethylbenzene	NA	500	ND <0.3	NA	ND <65	NA
Xylene	NA	4,100	ND <0.3	NA	ND <250	NA
June 18, 1992						
TPHg	NA	4,300	ND <50	NA	ND <30,000	NA
Benzene	NA	20	ND <0.3	NA	160	NA
Toluene	NA	48	ND <0.3	NA	710	NA
Ethylbenzene	NA	3.6	ND <0.3	NA	89	NA
Xylene	NA	970	ND <0.3	NA	670	NA

Table 2. (Continued)

Date/ Analytes	Bioreactor Influent (1)	Bioreactor Effluent (2)	First Carbon Bed Effluent (3)	Sanitary Sewer Influent (4)	Vapor Phase Carbon Effluent (Air) (5)	MW-5
June 19, 1992						
TPHg	180,000	1,600	ND <50	NA	ND	NA
Benzene	18,000	1.6	ND <0.3	NA	ND	NA
Toluene	31,000	5.0	ND <0.3	NA	ND	NA
Ethylbenzene	2,200	ND <0.3	ND <0.3	NA	ND	NA
Xylene	16,000	150	ND <0.3	NA	ND	NA
June 24, 1992						
TPHg	NA	980	ND <50	NA	ND <30,000	NA
Benzene	NA	11	ND <0.3	NA	ND <85	NA
Toluene	NA	13	ND <0.3	NA	ND <250	NA
Ethylbenzene	NA	1.8	ND <0.3	NA	ND <65	NA
Xylene	NA	140	ND <0.3	NA	ND <250	NA
July 2, 1992						
TPHg	160,000	210	ND <50	NA	ND <30,000	NA
Benzene	14,000	1.4	ND <0.3	NA	ND <85	NA
Toluene	27,000	ND <0.3	ND <0.3	NA	ND <250	NA
Ethylbenzene	1,700	ND <0.3	ND <0.3	NA	ND <65	NA
Xylene	1,300	1.0	ND <0.3	NA	ND <250	NA
July 10, 1992						
TPHg	150,000	2,800	ND <50	NA	ND <30,000	NA
Benzene	14,000	41	ND <0.3	NA	ND <85	NA
Toluene	26,000	36	ND <0.3	NA	ND <250	NA
Ethylbenzene	1,700	2.2	ND <0.3	NA	ND <65	NA
Xylene	12,000	360	ND <0.3	NA	ND <250	NA

Table 2. (Continued)

Date/ Analytes	Bioreactor Influent (1)	Bioreactor Effluent (2)	First Carbon Bed Effluent (3)	Sanitary Sewer Influent (4)	Vapor Phase Carbon Effluent (Air) (5)	MW-5
July 17, 1992						
TPHg	190,000	400	NA	NA	NA	NA
Benzene	22,000	21	NA	NA	NA	NA
Toluene	34,000	25	NA	NA	NA	NA
Ethylbenzene	2,100	0.8	NA	NA	NA	NA
Xylene	17,000	27	NA	NA	NA	NA
July 24, 1992						
TPHg	140,000	1,100	NA	NA	NA	NA
Benzene	13,000	15	NA	NA	NA	NA
Toluene	23,000	2.4	NA	NA	NA	NA
Ethylbenzene	1,700	ND <0.3	NA	NA	NA	NA
Xylene	12,000	200	NA	NA	NA	NA
August 20, 1992						
TPHg	190,000	6,400	73	NA	ND <30,000	NA
Benzene	14,000	31	ND <0.3	NA	ND <85	NA
Toluene	24,000	14	ND <0.3	NA	ND <250	NA
Ethylbenzene	2,000	ND <6	ND <0.3	NA	ND <65	NA
Xylene	13,000	150	ND <0.3	NA	ND <250	NA
September 15, 1992						
TPHg	230,000	23,000	54	NA	ND <30,000	NA
Benzene	17,000	1,100	0.4	NA	ND <85	NA
Toluene	29,000	3,600	0.8	NA	ND <250	NA
Ethylbenzene	2,200	59	ND <0.3	NA	ND <65	NA
Xylene	15,000	1,100	0.6	NA	ND <250	NA

Table 2. (Continued)

Date/ Analytes	Bioreactor Influent (1)	Bioreactor Effluent (2)	First Carbon Bed Effluent (3)	Sanitary Sewer Influent (4)	Vapor Phase Carbon Effluent (Air) (5)	MW-5
September 30, 1992						
TPHg	NA	NA	NA	NA	NA	51,000
Benzene	NA	NA	NA	NA	NA	13,000
Toluene	NA	NA	NA	NA	NA	5,900
Ethylbenzene	NA	NA	NA	NA	NA	1,400
Xylene	NA	NA	NA	NA	NA	2,600
March 30, 1993						
TPHg	NA	NA	NA	NA	NA	74,000
Benzene	NA	NA	NA	NA	NA	16,000
Toluene	NA	NA	NA	NA	NA	5,000
Ethylbenzene	NA	NA	NA	NA	NA	1,800
Xylene	NA	NA	NA	NA	NA	2,700
January 13, 1994						
TPHg	NA	NA	NA	NA	NA	80,000
Benzene	NA	NA	NA	NA	NA	19,000
Toluene	NA	NA	NA	NA	NA	8,200
Ethylbenzene	NA	NA	NA	NA	NA	1,400
Xylene	NA	NA	NA	NA	NA	2,700
March 3, 1994						
TPHg	80,000	3900	NA	ND <50	NA	NA
Benzene	1,500	270	NA	ND <0.5	NA	NA
Toluene	9,200	370	NA	ND <0.5	NA	NA
Ethylbenzene	1,000	32	NA	ND <0.5	NA	NA
Xylene	14,000	840	NA	ND <0.5	NA	NA

Table 2. (Continued)

Date/ Analytes	Bioreactor Influent (1)	Bioreactor Effluent (2)	First Carbon Bed Effluent (3)	Sanitary Sewer Influent (4)	Vapor Phase Carbon Effluent (Air) (5)	MW-5
March 4, 1994						
TPHg	58,000	5,600	NA	ND <50	NA	NA
Benzene	1,900	350	NA	ND <0.5	NA	NA
Toluene	8,700	210	NA	ND <0.5	NA	NA
Ethylbenzene	870	60	NA	ND <0.5	NA	NA
Xylene	11,000	970	NA	ND <0.5	NA	NA
April 7, 1994						
TPHg	79,000	280	ND <50	NA	NA	NA
Benzene	8,300	16	3.7	NA	NA	NA
Toluene	19,000	4.2	ND <0.5	NA	NA	NA
Ethylbenzene	990	ND <0.5	ND <0.5	NA	NA	NA
Xylene	9,300	1.9	ND <0.5	NA	NA	NA
April 13, 1994						
TPHg	114,000*	NA	NA	NA	NA	63,000
Benzene	9,250*	NA	NA	NA	NA	14,000
Toluene	16,750*	NA	NA	NA	NA	3,500
Ethylbenzene	1,310*	NA	NA	NA	NA	1,500
Xylene	8,600*	NA	NA	NA	NA	2,100
May 13, 1994						
TPHg	220,000	610	ND <50	NA	NA	NA
Benzene	12,000	45	ND <0.5	NA	NA	NA
Toluene	23,000	7.1	ND <0.5	NA	NA	NA
Ethylbenzene	1,700	0.8	ND <0.5	NA	NA	NA
Xylene	17,000	11	ND <0.5	NA	NA	NA

(1) = Sample Location Identification Number (see Plate 2)
All concentrations in parts per billion (ppb)
ND = Not detected above the reporting limit
NA = Not analyzed
* = Average concentration from two extraction wells

Table 3. Monitoring Well Product Thickness Measurements
1700 Jefferson Street
Oakland, California

Date	MW-1	MW-1A	MW-3	MW-4	MW-5
07/08/87	30	NA	0	NA	NA
09/12/88	25	28.2	0	5.9	0.5
07/12/89	21.6	18.6	0	25.2	0.4
08/01/91	12	12	4	18	0
06/18/92	34	NM	NM	NM	NM
07/02/92	18	NM	NM	NM	NM
07/23/92	10	NM	NM	NM	NM
08/18/92	10	NM	NM	NM	NM
09/30/92	NM	NM	4.1	NM	0
11/11/92	13	NM	2	NM	NM
01/29/93	25.2	NM	1.7	NM	NM
02/12/93	10.2	13	1.3	8.8	0
03/30/93	NM	NM	NM	NM	0.06
01/06/94	14.8	16.2	2.2	6.2	0
03/17/94	23.4	NM	2.4	NM	NM
04/07/94	14.2	NM	1.8	NM	0
04/13/94	12.0	NM	1.0	NM	0
05/13/94	1.7	NM	1.2	NM	0
06/17/94	0	NM	0	NM	0
06/29/94	NM	NM	0.5	NM	0

All measurements in inches
NA = Not applicable, these wells not yet installed
NM = Not measured

Table 4. Flow Totalizer Readings
Discharge to Sanitary Sewer
1700 Jefferson Street
Oakland, California

Date	Flow Total to Sanitary Sewer (gallons)
06/16/92	1,000
06/17/92	2,957
06/18/92	4,011
06/19/92	5,650
06/24/92	6,830
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
07/05/94	172,080