DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5647
FAX (510) 286-5639

R0126

Flex your power!
Be energy efficient!

September 17, 2003

Alameda County
SEP 2 2003
Environmental Health

Mr. Don Hwang, Hazardous Materials Specialist
Environmental Health Services
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Dear Mr. Hwang:

Enclosed is the report for the third quarter 2003 groundwater sampling event at the former Thomas A. Short Company site (3430 Wood Street, Oakland, CA 94508). The monitoring well sampling took place on June 16, 2003.

The next sampling event is tentatively scheduled for October 15, 2003. The report for the fourth quarter of 2003 will be forwarded to you. In the meanwhile, if you have any questions please call me at (510) 286-5647.

Sincerely,

Christopher R. Wilson

Christopher R. Wilson
Senior Engineer
Office of Environmental Engineering

Enclosure

R0126

Shaw™ Shaw Environmental, Inc.

THIRD QUARTER 2003 GROUNDWATER MONITORING REPORT
FORMER THOMAS A. SHORT COMPANY PROPERTY
OAKLAND, ALAMEDA COUNTY, CALIFORNIA

September 04, 2003

Prepared for:

California Department of Transportation
Office of Environmental Engineering
P.O. Box 23660
Oakland, California 94623-0660

Prepared By:

Shaw Environmental, Inc.
1326 North Market Boulevard
Sacramento, California 95834

Project No.: 830714.01010000

THIRD QUARTER 2003 GROUNDWATER MONITORING REPORT
FORMER THOMAS A. SHORT COMPANY PROPERTY
OAKLAND, ALAMEDA COUNTY, CALIFORNIA

September 04, 2003

Prepared for:

California Department of Transportation
Office of Environmental Engineering
P.O. Box 23660
Oakland, California 94623-0660

Prepared By:

Shaw Environmental, Inc.
1326 North Market Boulevard
Sacramento, California 95834

Project No.: 830714.01010000

Table of Contents

List of Tables

List of Figures

List of Appendices

THIRD QUARTER 2003 GROUNDWATER MONITORING REPORT
FORMER THOMAS A. SHORT COMPANY PROPERTY
OAKLAND, ALAMEDA COUNTY, CALIFORNIA

Shaw Environmental, Inc. (Shaw), is pleased to submit this report for the third quarter 2003 groundwater monitoring event conducted at the former Thomas A. Short Company property, Oakland, Alameda County, California. This report is submitted in accordance with Contract No. 43A0078, Task Order No. 04-911052-WB.

The material and data in this report were prepared under the supervision and direction of the undersigned and performed consistent with generally accepted professional consulting principles and practices.

Shaw Environmental, Inc.

Martha Adams, P.E.
Project Manager

Distribution: Chris Wilson, Caltrans
Project File 830714

1.0 Project History

The Thomas A. Short Company property (Figure 1) was purchased by Caltrans in 1994. According to a previous report on this site (Geocon, 2001), one 4,000-gallon gasoline underground storage tank (UST) and one 1,000-gallon diesel UST were located at the site. The USTs were removed in January 1993. Groundwater samples collected from monitoring well MW-1 in February and October 1993, following UST removal, were reported to contain 4.6 and 3.7 milligrams per liter (mg/l) total petroleum hydrocarbons as gasoline (TPHg), respectively (Geocon, 2001).

Three additional monitoring wells were installed in November 1996. The monitoring wells were buried during construction activities before groundwater samples could be collected. The wells have subsequently not been located.

Three more monitoring wells were installed in May 2000. Based on the results from quarterly groundwater monitoring since June 2000, groundwater has been encountered at depths ranging from approximately 2.45 to 5.03 meters (8.03 to 16.5 feet) from top of casing. Groundwater gradient directions have varied from east, southeast, southwest, and west. The most common groundwater gradient direction is southwest. TPHg concentrations have ranged from below the detection limit to 11 mg/l and total petroleum hydrocarbons as diesel (TPHd) concentrations have ranged from below the detection limit to 3.7 mg/l. Benzene concentrations have ranged from below the detection limit to 191 µg/l. Toluene and ethyl benzene have been detected at levels that do not exceed their respective risk-based screening levels. Xylene concentrations have ranged from below the detection limit to 121 micrograms per liter (µg/l). Various other volatile organic compounds common to gasoline have been reported. Methyl tertiary butyl ether (MTBE) concentrations have ranged from below the detection limit to 7 µg/l, well below its risk-based screening level of 1,800 µg/l.

2.0 Groundwater Sampling Event

2.1 Groundwater Sampling and Analytical Program

Groundwater sampling for the third quarter 2003 was conducted on June 16, 2003, by Shaw Environmental, Inc. (Shaw) personnel. This monitoring event included the collection and analysis of groundwater samples from three on-site monitoring wells. Monitoring procedures are included in Appendix A. Groundwater sample field data sheets are included in Appendix B.

Groundwater samples were analyzed by Sparger Technology, Inc. (Sparger), of Sacramento, California, a California-certified analytical laboratory. Samples were collected, retained, and transported to the laboratory using chain-of-custody procedures. The analyses were conducted on a normal turn-around basis in general accordance with holding times specified by the U.S. Environmental Protection Agency (EPA). The analyses were performed in general accordance with the following EPA methods listed.

Matrix	Analyses
Water	TPHg, EPA Method 8015 modified
Water	TPHd, EPA Method 8015 modified
Water	Volatile Organic Compounds (VOCs), EPA Method 8260B
Water	California Assessment Manual (CAM) 17 Metals, EPA 6010/7470

Samples collected for CAM 17 Metals analysis were transferred into unpreserved containers in the field. The samples were filtered and preserved at the laboratory prior to analysis.

2.2 Quality Assurance Program

The quality assurance (QA) program included the collection and analysis of travel blanks. These additional samples were submitted for analysis to assess potential errors introduced during transport of the groundwater samples. A trip blank was carried in the insulated chest with the groundwater samples. The trip blank consisted of two volatile organic analysis (VOA) vials filled at the laboratory with water that had been purged of VOCs. The trip blank was analyzed for total petroleum hydrocarbons as gasoline and VOCs in accordance with the methods listed in Section 2.1. A brief assessment of the QA data is presented in this report.

The purpose of the travel blanks was to assess potential "cross contamination" of samples during storage and transport to the laboratory. During this program, one set of travel blanks was analyzed. TPHg and VOCs were not reported present in the travel blank set at concentrations exceeding reporting limits of the analytical methods used by the laboratory.

Based on the results of the travel blank analysis, the groundwater samples are judged to be free of interferences, which may have occurred during storage and transport to the laboratory.

3.0 Monitoring Results

The monitoring results from the groundwater samples collected during the third quarter 2003 sampling event are summarized below. Monitoring well locations are shown on Figure 2. Current and historical groundwater elevation data are presented on Tables 1 and 2. The current groundwater gradient is depicted on Figure 3. Current analytical results are summarized on Tables 3, 4, and 5. Selected compounds are plotted on Figure 4. Historical analytical data are presented on Tables 6, 7, and 8.

3.1 Summary

Site Location:	Former Thomas A. Short Company 3430 Wood Street, Oakland, California, Figure 1
Current Phase of Project:	Monitoring
Frequency of Monitoring:	Quarterly
Separate-Phase Hydrocarbons Present:	None present
Water Purged from Wells This Quarter:	7.5 gallons (from 3 monitoring wells)
Range of Depth to Groundwater:	10.47 to 14.08 (feet from top of casing), Table 1 3.2 to 4.3 (meters from top of casing)
Groundwater Elevation Change Relative to Previous Quarter:	Groundwater elevations decreased in all wells. Decreases ranged from 0.27 to 0.65 feet (0.08 to 0.20 meters)
Groundwater Gradient:	0.008, Figure 3
Groundwater Flow Direction:	Southwest, Figure 3

3.2 Analytical Results

TPHd was reported by the laboratory in groundwater samples from wells MW-4 and MW-5 at concentrations of 0.88 and 1.7 mg/l, respectively. TPHg was reported by the laboratory in groundwater samples from wells MW-4 and MW-5 at concentrations of 3.5 and 2.1 mg/l, respectively. TPHd and TPHg were not reported present at concentrations exceeding reporting limits of the analytical methods in the groundwater sample collected from well MW-6 (Table 3).

Benzene, toluene, ethylbenzene, m- and p-xylenes, and o-xylene were reported in groundwater samples collected from well MW-4. The reported concentrations were 0.024 mg/l, 0.0075 mg/l,

0.036 mg/l, 0.0085 mg/l, and 0.0024 mg/l, respectively. Benzene, toluene, and ethylbenzene were reported in groundwater samples collected from well MW-5. The reported concentrations were 0.094 mg/l, 0.0025 mg/l, and 0.0036 mg/l, respectively. Benzene, toluene, ethylbenzene, and xylenes (BTEX) were not reported present at concentrations exceeding reporting limits of the analytical methods in the groundwater sample collected from well MW-6 (Table 3).

Additional VOCs were reported in groundwater samples collected from wells MW-4 and MW-5 (Table 4). The following VOCs and concentration ranges were reported (in mg/l).

1,3,5-trimethylbenzene	0.003 to 0.024	n-propylbenzene	0.0074 to 0.20
4-isopropyltoluene	0.0088 (MW-4)	sec-butylbenzene	0.0024 to 0.014
isopropylbenzene	0.0063 to 0.13	tert-butylbenzene	0.019 to 0.023

The only metals that groundwater samples were reported to contain were barium and zinc (Table 5). Barium was reported in groundwater samples collected from wells MW-4, MW-5, and MW-6 at concentrations ranging from 0.18 to 0.41 mg/l. Zinc was reported in groundwater samples collected from wells MW-4, MW-5, and MW-6 at concentrations ranging from 0.044 to 0.058 mg/l.

Laboratory analytical reports and chain-of-custody documentation are included in Appendix C.

3.3 Discussion of Analytical Results

Groundwater analytical results from the third quarter 2003 sampling event are generally consistent with historical data. Compared to second quarter 2003 data, the TPHg concentrations increased in wells MW-4 and MW-5 from not detected to 3.5 mg/l and 2.1 mg/l, respectively, and remained the same, not detected, in well MW-6 (Table 6). TPHd concentrations decreased in both well MW-4 (from 1.4 to 0.88 mg/l) and well MW-5 (from 2.3 to 1.7 mg/l), and remained the same, not detected, in well MW-6 (Table 6). The benzene concentration increased from the previous quarter in well MW-4 to 0.024 mg/l, and toluene, ethylbenzene, and xylenes increased from the previous quarter to 0.0075 mg/l, 0.036 mg/l, and 0.0109 mg/l, respectively (Table 6). Benzene decreased in well MW-5 to 0.094 mg/l; toluene, ethylbenzene, and xylenes decreased from the previous quarter to 0.0025 mg/l, 0.0036 mg/l and less than 0.004 mg/l, respectively. BTEX results are generally consistent with historical results and trends for wells MW-4, MW-5 and MW-6 (Table 6).

Remaining VOC results are generally comparable to historical compounds and concentrations (Table 7). For MW-4, the compounds 1,3,5-trimethylbenzene, 4-isopropyltoluene, isopropylbenzene, n-propylbenzene, sec-butylbenzene, and tert-butylbenzene were reported at concentrations of 24; 8.8; 130; 200; 14; and 23 µg/l, respectively. These concentrations are equal to or greater than the previous quarter results. For MW-5, the compounds 1,3,5-trimethylbenzene, isopropylbenzene, n-propylbenzene, sec-butylbenzene, and tert-butylbenzene were reported at concentrations of 3.0; 6.3; 7.4; 2.4; and 19 µg/l, respectively. With the exception of 1,3,5-trimethylbenzene, these concentrations are less than those reported in the previous quarter. For MW-6, the compounds were reported below the analytical method detection limit.

Historically, groundwater samples from the site were reported to contain arsenic, barium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, vanadium and zinc. Current results reported barium and zinc in the three monitoring wells (Table 8).

3.4 Comparison to Risk-Based Screening Levels

The analytical results will be compared to risk-based screening levels (RBSLs). The RBSLs (RWQCB, 2001) were developed by the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), to address environmental protection goals as set forth in the Water Quality Control Plan for the San Francisco Bay Basin (RWQCB, 1995). The RBSLs developed for groundwater that is not a current or potential drinking water resource are used for comparison to the current quarter's groundwater data. RBSLs are presented below and in Tables 6, 7, and 8.

Constituent	RBSL (mg/l)	Wells with Groundwater Results Exceeding RBSL
TPHg	0.500	MW-4, MW-5
TPHd	0.640	MW-4, MW-5
Benzene	0.046	MW-5
Barium	0.0039	MW-4, MW-5, MW-6
Zinc	0.023	MW-4, MW-5, MW-6

4.0 Recommendations

Shaw recommends continued groundwater monitoring to evaluate temporal changes in groundwater quality and benzene concentrations in MW-5.

5.0 References

Caltrans (California Department of Transportation), 2001a, District 4, Office of Environmental Engineering, Task Order No. 04-911052-WB: dated August 2001.

IT (IT Corporation), 2001b, Work plan, groundwater monitoring, former Thomas A. Short Company property, Oakland, Alameda County, California: dated December 19, 2001.

IT, 2001c, Health and Safety plan, groundwater monitoring, former Thomas A. Short Company property, Oakland, Alameda County, California: dated December 19, 2001.

Geocon (Geotechnical & Environmental Consultants), 2001, Monitoring Well Installation and Groundwater Sampling Report: Former Thomas A. Short Co., Oakland, Alameda County, California, Task Order No. 04-190270-RM, Geocon Project No. S8225-06-103: dated June 2001.

RWQCB (Regional Water Quality Control Board, San Francisco Bay Region), 1995, San Francisco Bay basin (region 2), water quality control plan: dated June 21, 1995.

RWQCB, 2001, Application of risk-based screening levels and decision making to sites with impacted soil and groundwater; volume 1: summary tier 1 lookup tables: interim final dated December 2001.

Table 1
Third Quarter 2003 Groundwater Elevations
Former Thomas A. Short Company
Oakland, California

Well Number	Well TOC Elevation (feet-MSL)	Screened Interval (feet bgs)	Date Measured	Depth to Groundwater (feet bTOC)	Free Product Thickness (feet)	Groundwater Elevation (feet-MSL)
MW-4	8.33	5 to 15	06/16/03	10.47	0	-2.14
MW-5	12.35	5 to 15	06/16/03	14.08	0	-1.73
MW-6	12.01	5 to 15	06/16/03	13.95	0	-1.94

Notes:

1. *MSL = Mean Sea Level*
2. *TOC = Top of Casing*
3. *bgs = below ground surface*
4. *bTOC = below top of casing*

Table 2
Historical Groundwater Elevations
Former Thomas A. Short Company
Oakland, California

Well Number	Well TOC Elevation (feet-MSL)	Screened Interval (feet bgs)	Date Measured	Depth to Groundwater (feet bTOC)	Free Product Thickness (feet)	Groundwater Elevation (feet-MSL)
MW-4	8.33	5 to 15	06/19/00	12.71	0	-4.38
			11/27/00	11.51	0	-3.18
			03/29/01	9.58	0	-1.25
			01/15/02	8.03	0	0.30
			04/19/02	10.42	0	-2.09
	8.33		07/11/02	10.72	0	-2.39
			10/17/02	11.73	0	-3.40
			01/27/03	8.54	0	-0.21
			04/14/03	9.82	0	-1.49
			06/16/03	10.47	0	-2.14
MW-5	12.33	5 to 15	06/19/00	16.5	0	-4.17
			11/27/00	14.72	0	-2.39
			03/29/01	13.30	0	-0.97
			01/15/02	11.92	0	0.41
			04/19/02	14.13	0	-1.80
	12.35		07/11/02	15.02	0	-2.67
			10/17/02	15.33	0	-2.98
			01/27/03	12.34	0	0.01
			04/14/03	13.81	0	-1.46
			06/16/03	14.08	0	-1.73
MW-6	11.49	5 to 15	06/19/00	15.31	0	-3.82
			11/27/00	14.09	0	-2.60
			03/29/01	12.71	0	-1.22
			01/15/02	11.58	0	-0.09
			04/19/02	13.48	0	-1.99
	12.01		07/11/02	14.24	0	-2.23
			10/17/02	15.18	0	-3.17
			01/27/03	12.42	0	-0.41
			04/14/03	13.42	0	-1.41
			06/16/03	13.95	0	-1.94

Notes:
1. *MSL = Mean Sea Level*
2. *TOC = Top of Casing*
3. *bgs = below ground surface*
4. *bTOC = below top of casing*

Table 3
Third Quarter 2003 Groundwater Analytical Results
Petroleum Hydrocarbons

Former Thomas A. Short Company
Oakland, California

Sample Designation Sampling Date	MW-4 06/16/03	MW-5 06/16/03	MW-6 06/16/03	Trip Blank 06/16/03
Petroleum Hydrocarbons, mg/l				
TPH as Gasoline	3.5	2.1	<0.050	<0.050
TPH as Diesel	0.88	1.7	<0.050	—
Selected Volatile Organic Compounds, ug/l				
Benzene	24	94	<2.0	<2.0
Toulene	7.5	2.5	<2.0	<2.0
Ethylbenzene	36	3.6	<2.0	<2.0
M+P Xylene	8.5	<2.0	<2.0	<2.0
o-Xylene	2.4	<2.0	<2.0	<2.0

Notes:

1. *TPH = Total Petroleum Hydrocarbons*
2. *mg/l = milligrams per liter*
3. *ug/l = micrograms per liter*
4. *"<" = not detected at concentrations above the indicated amount.*

Table 4
Third Quarter 2003 Groundwater Analytical Results
Volatile Organic Compounds
Former Thomas A. Short Company
Oakland, California

Sample Designation Sampling Date	MW-4 06/16/03	MW-5 06/16/03	MW-6 06/16/03	Trip Blank 06/16/03
1,3,5-trimethylbenzene	24	3.0	<2.0	<2.0
4-isopropyltoluene	8.8	<2.0	<2.0	<2.0
isopropylbenzene (cumene)	130	6.3	<2.0	<2.0
n-propylbenzene	200	7.4	<2.0	<2.0
sec-butylbenzene	14	2.4	<2.0	<2.0
tert-butylbenzene	23	19	<2.0	<2.0

Notes:

1. *Concentrations reported in micrograms per liter.*
2. *"<" = not detected at concentrations above the indicated amount.*

Table 5
Third Quarter 2003 Groundwater Analytical Results
Heavy Metals
Former Thomas A. Short Company
Oakland, California

Sample Designation Sampling Date	MW-4 06/16/03	MW-5 06/16/03	MW-6 06/16/03
Antimony	<0.0050	<0.0050	<0.0050
Arsenic	<0.0050	<0.0050	<0.0050
Barium	0.24	0.41	0.18
Beryllium	<0.0010	<0.0010	<0.0010
Cadmium	<0.0030	<0.0030	<0.0030
Chromium	<0.0030	<0.0030	<0.0030
Cobalt	<0.0030	<0.0030	<0.0030
Copper	<0.0030	<0.0030	<0.0030
Lead	<0.0050	<0.0050	<0.0050
Mercury	<0.00020	<0.00020	<0.00020
Molybdenum	<0.0050	<0.0050	<0.0050
Nickel	<0.0030	<0.0030	<0.0030
Selenium	<0.0050	<0.0050	<0.0050
Silver	<0.0016	<0.0016	<0.0016
Thallium	<0.0050	<0.0050	<0.0050
Vanadium	<0.0030	<0.0030	<0.0030
Zinc	0.054	0.058	0.044

Notes:

1. *Metals analyses conducted in general accordance with U.S. Environmental Protection Agency (EPA) Methods 6010 and 7470.*
2. *Concentrations reported in milligrams per liter.*
3. *"<" = not detected at concentrations above the indicated amount.*

Table 6
Historical Groundwater Analytical Results
Petroleum Hydrocarbons
Former Thomas A. Short Company
Oakland, California

Sample Designation	MW-4										Risk-Based
Sampling Date	5/26/00	11/27/00	3/29/01	1/15/02	4/19/02	7/11/02	10/17/02	1/27/03	4/14/03	6/16/03	Screening Levels
Petroluem Hydrocarbons, mg/l											
Total Petroleum Hydrocarbons	---	---	---	<5	<5	<5	<5	---	---	---	
TPH as Gasoline	**4.8**	**4.2**	**8.1**	<0.050	**11**	**2.9**	**2.1**	**3.8**	<0.050	**3.5**	0.500
TPH as Diesel	0.5	0.47	0.61	<0.050	**1.17**	**1.26**	**1.1**	**1.4**	**1.4**	**0.88**	0.640
Selected Volatile Organic Compounds, ug/l											
Benzene	**122**	**55**	**51**	**47**	35	9.7	23	24	18	24	46
Toulene	39	18	23	18	13	<2.0	5.6	10	4	7.5	130
Ethylbenzene	126	65	160	130	140	<2.0	20	84	<4.0	36	290
Total Xylenes	**24.7**	**26.3**	**44.5**	**32.5**	**23**	<4.0	**15.4**	**24.6**	<11.9	10.9	13
Fuel Oxygenates, ug/l											
MTBE	<0.5	1.2	<5.0	<2.0	<2.0	<2.0	<2.0	---	---	---	1800
Total Dissolved Solids, mg/l	---	---	---	---	2240	2280	2830	---	---	---	---

Notes:
1. *TPH = Total Petroleum Hydrocarbons*
2. *mg/l = milligrams per liter*
3. *ug/l = micrograms per liter*
4. *"<" = not detected at concentrations above the indicated amount.*
5. *Risk-based screening levels (RBSLs) for groundwater that is not a current or potential drinking water source.*
6. *Bold results exceed RBSLs.*

Table 6
Historical Groundwater Analytical Results
Petroleum Hydrocarbons
Former Thomas A. Short Company
Oakland, California

Sample Designation	MW-5										Risk-Based
Sampling Date	5/26/00	11/27/00	3/29/01	1/15/02	4/19/02	7/11/02	10/17/02	1/27/03	4/14/03	6/16/03	Screening Levels
Petroleum Hydrocarbons, mg/l											
Total Petroleum Hydrocarbons	---	---	---	<5	<5	<5	<5	---	---	---	
TPH as Gasoline	**4.6**	**1.7**	**2.7**	**7.8**	**1.2**	**4.1**	**1.7**	**4.6**	<0.050	**2.1**	0.500
TPH as Diesel	0.6	0.45	**0.96**	<0.050	**0.942**	**2.45**	**1.5**	**3.7**	**2.3**	**1.7**	0.640
Selected Volatile Organic Compounds, ug/l											
Benzene	**98**	39	35	**63**	**53**	**99**	**62**	**150**	**150**	**94**	46
Toulene	7	2	1.1	3.1	2.5	4.6	2	6.3	5.2	2.5	130
Ethylbenzene	35	3.8	3.5	18	18	43	6.9	84	42	3.6	290
Total Xylenes	**44**	6.1	3.2	<4.0	<4.0	5.6	<4.7	<4.3	<8.0	<4.0	13
Fuel Oxygenates, ug/l											
MTBE	7	1.5	<5.0	<2.0	<2.0	<2.0	<2.0	---	---	---	1800
Total Dissolved Solids, mg/l	---	---	---	---	1410	1440	1820	---	---	---	---

Notes:
1. *TPH = Total Petroleum Hydrocarbons*
2. *mg/l = milligrams per liter*
3. *ug/l = micrograms per liter*
4. *"<" = not detected at concentrations above the indicated amount.*
5. *Risk-based screening levels (RBSLs) for groundwater that is not a current or potential drinking water source.*
6. *Bold results exceed RBSLs.*

Table 6
Historical Groundwater Analytical Results
Petroleum Hydrocarbons
Former Thomas A. Short Company
Oakland, California

Sample Designation / Sampling Date	MW-6 5/26/00	11/27/00	3/29/01	1/15/02	4/19/02	7/11/02	10/17/02	1/27/03	4/14/03	6/16/03	Risk-Based Screening Levels
Petroluem Hydrocarbons, mg/l											
Total Petroleum Hydrocarbons	---	---	---	<5	<5	<5	<5	---	---	---	
TPH as Gasoline	**4.4**	0.32	0.26	**3.5**	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.500
TPH as Diesel	0.4	0.18	0.42	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.640
Selected Volatile Organic Compounds, ug/l											
Benzene	**191**	16	**52**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	46
Toulene	14	0.51	0.62	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	130
Ethylbenzene	110	1.1	1.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	290
Total Xylenes	**121**	0.88	<0.50	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	13
Fuel Oxygenates, ug/l											
MTBE	7	1.8	<5.0	<2.0	<2.0	<2.0	<2.0	---	---	---	1800
Total Dissolved Solids, mg/l	---	---	---	---	2820	3060	4360	---	---	---	---

Notes:
1. *TPH = Total Petroleum Hydrocarbons*
2. *mg/l = milligrams per liter*
3. *ug/l = micrograms per liter*
4. *"<" = not detected at concentrations above the indicated amount.*
5. *Risk-based screening levels (RBSLs) for groundwater that is not a current or potential drinking water source.*
6. *Bold results exceed RBSLs.*

Table 7
Historical Groundwater Analytical Results
Volatile Organic Compounds
Former Thomas A. Short Company
Oakland, California

Well Number / Date Sampled	MW-4 5/26/00	11/27/00	3/29/01	1/15/02	4/19/02	7/11/02	10/17/02	1/27/03	4/14/03	6/16/03	Risk-Based Screening Levels
1,1,2-trichloroethane	<5.0	<5.0	<5.0	3.6	<10	<2.0	<2.0	<2.0	<4.0	<2.0	930
1,2,4-trimethylbenzene	<5.0	<5.0	<5.0	<2.0	<10	<2.0	<2.0	<2.0	<4.0	<2.0	
1,2-dichloroethane	<5.0	<5.0	<5.0	3.9	<10	<2.0	<2.0	<2.0	<4.0	<2.0	500
1,2-dichloropropane	<5.0	<5.0	<5.0	4.1	<10	<2.0	<2.0	<2.0	<4.0	<2.0	100
1,3,5-trimethylbenzene	12	<5.0	8	<2.0	190	<2.0	14	52	24	24	
2-butanone	<5.0	<5.0	<5.0	<2.0	<10	7.8	<2.0	<2.0	<4.0	<2.0	14000
2-chloroethylvinyl ether	<5.0	<5.0	<5.0	<2.0	<10	30	<2.0	<2.0	<4.0	<2.0	
2-hexanone	<5.0	<5.0	<5.0	<2.0	<10	<2.0	<2.0	<2.0	<4.0	<2.0	
4-chlorotoluene	<5.0	<5.0	<5.0	<2.0	<10	<2.0	<2.0	<2.0	<4.0	<2.0	
4-isopropyltoluene	5	<5.0	8	3.6	<10	<2.0	3.7	9.6	6.8	8.8	
acetone	<5.0	<5.0	<5.0	<2.0	<10	13	<2.0	<2.0	<4.0	<2.0	1500
acrolein	<5.0	<5.0	<5.0	<2.0	<10	100	<2.0	<2.0	<4.0	<2.0	
bromodichloromethane	<5.0	<5.0	<5.0	6.8	<10	<2.0	<2.0	<2.0	<4.0	<2.0	420
chloroform	<5.0	<5.0	<5.0	23	<10	<2.0	<2.0	<2.0	<4.0	<2.0	28
isopropylbenzene (cumene)	141	70	180	180	190	<2.0	52	160	5.0	130.0	
napthalene	**101**	<5.0	**45**	12	<10	<2.0	<2.0	<2.0	<4.0	<2.0	24
n-butylbenzene	18	7.3	26	17	22	<2.0	<2.0	<2.0	<4.0	<2.0	
n-propylbenzene	170	63	260	<2.0	300	<2.0	68	230	<4.0	200	
sec-butylbenzene	0.6	<5.0	12	11	13	<2.0	4.4	12	<4.0	14	
tert-butylbenzene	14	9.9	21	20	25	4.0	11	23	16	23	
trichloroethene	<5.0	<5.0	<5.0	6.7	<10	5.0	<2.0	<2.0	<4.0	<2.0	360

Notes:

1. *Concentrations reported in micrograms per liter.*
2. *"<" = not detected at concentrations above the indicated amount.*
3. *Risk-based screening levels (RBSLs) for groundwater that is not a current or potential drinking water source.*
4. *Bold results exceed RBSLs.*

Table 7
Historical Groundwater Analytical Results
Volatile Organic Compounds
Former Thomas A. Short Company
Oakland, California

Well Number / Date Sampled	MW-5 5/26/00	11/27/00	3/29/01	1/15/02	4/19/02	7/11/02	10/17/02	1/27/03	4/14/03	6/16/03	Risk-Based Screening Levels
1,1,2-trichloroethane	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	930
1,2,4-trimethylbenzene	96	<5.0	<5.0	<2.0	<2.0	5.4	2.6	<2.0	<4.0	<2.0	
1,2-dichloroethane	<5.0	<5.0	<5.0	3.9	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	500
1,2-dichloropropane	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	100
1,3,5-trimethylbenzene	51	<5.0	<5.0	<2.0	16	8.4	2.7	10	<4.0	3.0	
2-butanone	<5.0	<5.0	<5.0	<2.0	<2.0	8.8	<2.0	<2.0	<4.0	<2.0	14000
2-chloroethylvinyl ether	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	
2-hexanone	<5.0	<5.0	<5.0	<2.0	<2.0	10	<2.0	<2.0	<4.0	<2.0	
4-chlorotoluene	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	
4-isopropyltoluene	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	
acetone	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	1500
acrolein	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	
bromodichloromethane	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	420
chloroform	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.0	<2.0	28
isopropylbenzene (cumene)	29	<5.0	7.1	25	16	49	18	80	27	6.3	
napthalene	14	<5.0	15	**38**	<2.0	<2.0	<2.0	**130**	<4.0	<2.0	24
n-butylbenzene	21	<5.0	<5.0	21	9.8	64	<2.0	<2.0	<4.0	<2.0	
n-propylbenzene	31	<5.0	11	45	26	97	39	190	44	7.4	
sec-butylbenzene	8.2	<5.0	<5.0	5.1	4.2	12	5.6	24	9.1	2.4	
tert-butylbenzene	11	<5.0	14	16	16	21	9.8	30	27	19	
trichloroethene	<5.0	<5.0	<5.0	<2.0	<2.0	2.2	<2.0	<2.0	<4.0	<2.0	360

Notes:
1. *Concentrations reported in micrograms per liter.*
2. *"<" = not detected at concentrations above the indicated amount.*
3. *Risk-based screening levels (RBSLs) for groundwater that is not a current or potential drinking water source.*
4. *Bold results exceed RBSLs.*

Table 7
Historical Groundwater Analytical Results
Volatile Organic Compounds
Former Thomas A. Short Company
Oakland, California

Well Number	MW-6										Risk-Based
Date Sampled	5/26/00	11/27/00	3/29/01	1/15/02	4/19/02	7/11/02	10/17/02	1/27/03	4/14/03	6/16/03	Screening Levels
1,1,2-trichloroethane	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	930
1,2,4-trimethylbenzene	149	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
1,2-dichloroethane	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	500
1,2-dichloropropane	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	100
1,3,5-trimethylbenzene	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
2-butanone	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	14000
2-chloroethylvinyl ether	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
2-hexanone	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
4-chlorotoluene	7.4	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
4-isopropyltoluene	6.6	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
acetone	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	1500
acrolein	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
bromodichloromethane	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	420
chloroform	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	28
isopropylbenzene (cumene)	25	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
napthalene	**44**	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	19	<2.0	<2.0	24
n-butylbenzene	17	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
n-propylbenzene	36	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	2.9	<2.0	<2.0	
sec-butylbenzene	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
tert-butylbenzene	5.4	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
trichloroethene	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	360

Notes:

1. *Concentrations reported in micrograms per liter.*
2. *"<" = not detected at concentrations above the indicated amount.*
3. *Risk-based screening levels (RBSLs) for groundwater that is not a current or potential drinking water source.*
4. *Bold results exceed RBSLs.*

Table 8
Historical Groundwater Analytical Results
Heavy Metals
Former Thomas A. Short Company
Oakland, California

Sample Designation / Sampling Date	MW-4 5/26/00	11/27/00	3/29/01	1/15/02	4/19/02	7/11/02	10/17/02	1/27/03	4/14/03	6/16/03	Risk-Based Screening Levels
Antimony	--	<0.0050	<0.0050	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.0050	0.030
Arsenic	--	0.01	0.009	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.0050	0.036
Barium	--	**0.47**	**0.33**	**0.34**	**0.30**	**0.31**	<0.020	**0.24**	**0.35**	**0.24**	0.0039
Beryllium	--	<0.0010	<0.0010	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0010	0.0051
Cadmium	--	<0.0030	<0.0030	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0030	0.0011
Chromium	--	0.0032	<0.003	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0030	0.180
Cobalt	--	<0.003	<0.003	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0030	0.0030
Copper	--	**0.01**	**0.010**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0030	0.0031
Lead	**0.20**	**0.0077**	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	0.0032
Mercury	--	<0.004	<0.004	<0.00020	<0.00020	<0.00020	**0.00063**	<0.00020	<0.00020	<0.0030	0.000012
Molybdenum	--	0.0064	0.0060	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0050	0.240
Nickel	--	**0.030**	0.0056	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.0030	0.0082
Selenium	--	<0.0050	**0.0058**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.0050	0.0050
Silver	--	**0.020**	**0.010**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0016	0.00012
Thallium	--	<0.0050	<0.0050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.0050	0.040
Vanadium	--	0.0034	0.003	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0030	0.019
Zinc	--	**0.070**	0.020	<0.015	0.015	0.02	<0.0150	<0.0150	**0.040**	**0.054**	0.023

Notes:

1. *Metals analyses conducted in general accordance with U.S. Environmental Protection Agency (EPA) Methods 6010 and 7470.*
2. *Concentrations reported in milligrams per liter.*
3. *"<" = not detected at concentrations above the indicated amount.*
4. *Risk-based screening levels (RBSLs) for groundwater that is not a current or potential drinking water source.*
5. *Bold results exceed RBSLs.*

Table 8
Historical Groundwater Analytical Results
Heavy Metals
Former Thomas A. Short Company
Oakland, California

Sample Designation	MW-5										Risk-Based
Sampling Date	5/26/00	11/27/00	3/29/01	1/15/02	4/19/02	7/11/02	10/17/02	1/27/03	4/14/03	6/16/03	Screening Levels
Antimony	--	<0.0050	<0.0050	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.0050	0.030
Arsenic	--	0.030	0.010	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.0050	0.036
Barium	--	**1.2**	**0.20**	**0.19**	**0.32**	**0.42**	<0.020	**0.28**	**0.51**	**0.41**	0.0039
Beryllium	--	<0.0010	<0.0010	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0010	0.0051
Cadmium	--	<0.0030	<0.0030	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0030	0.0011
Chromium	--	0.05	<0.003	<0.010	**0.22**	<0.010	<0.010	<0.010	<0.010	<0.0030	0.180
Cobalt	--	**0.01**	<0.003	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0030	0.0030
Copper	--	**0.05**	**0.010**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0030	0.0031
Lead	**0.33**	**0.020**	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	0.0032
Mercury	--	<0.004	<0.004	<0.00020	<0.00020	<0.00020	**0.00055**	<0.00020	<0.00020	<0.0030	0.000012
Molybdenum	--	0.010	<0.005	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0050	0.240
Nickel	--	**0.010**	0.0062	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.0030	0.0082
Selenium	--	<0.0050	<0.0050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.0050	0.0050
Silver	--	**0.010**	**0.0013**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0016	0.00012
Thallium	--	<0.0050	<0.0050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.0050	0.040
Vanadium	--	**0.050**	<0.003	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0030	0.019
Zinc	--	0.010	**0.030**	0.020	**0.16**	**0.041**	<0.0150	<0.0150	<0.0150	**0.058**	0.023

Notes:

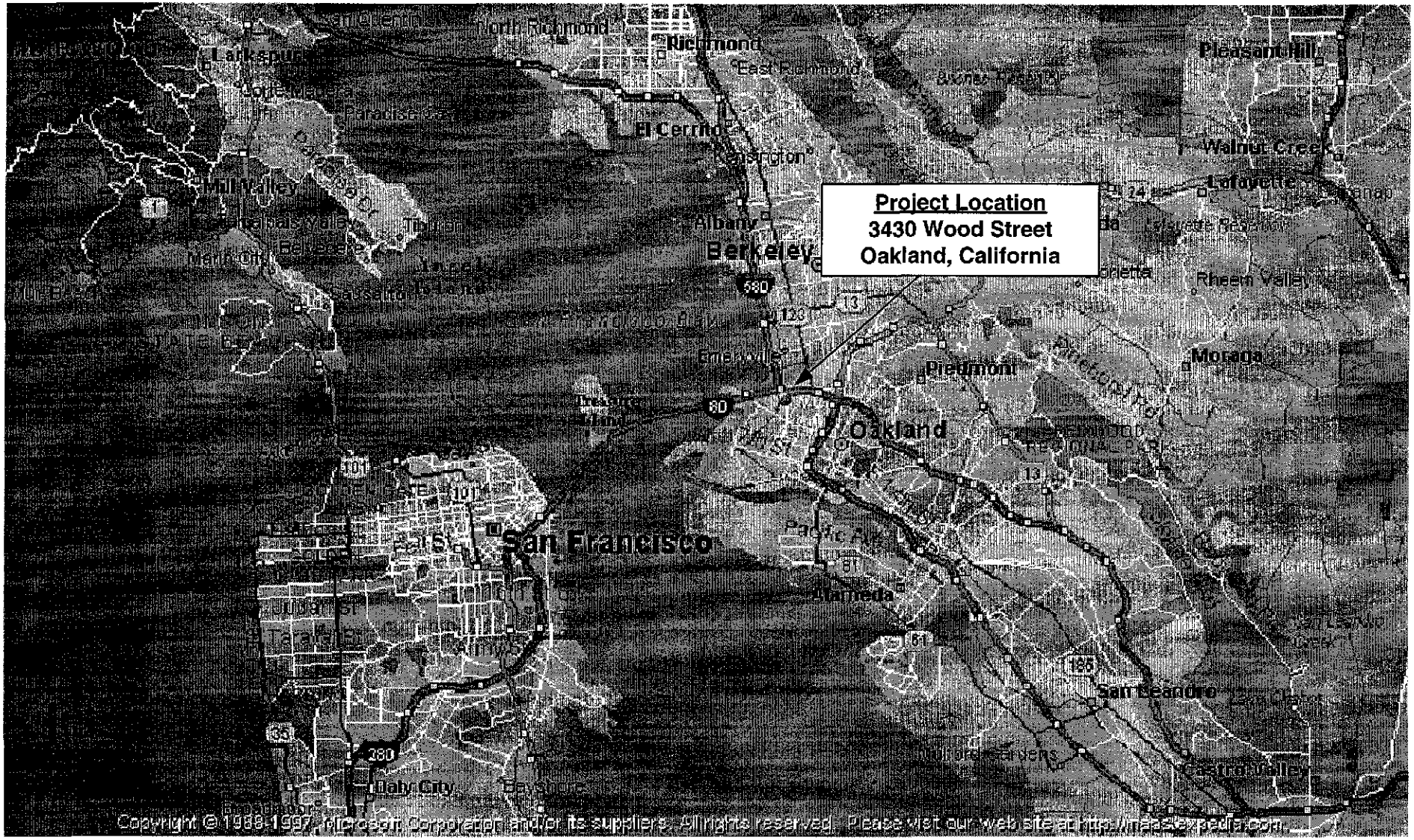
1. *Metals analyses conducted in general accordance with U.S. Environmental Protection Agency (EPA) Methods 6010 and 7470.*
2. *Concentrations reported in milligrams per liter.*
3. *"<" = not detected at concentrations above the indicated amount.*
4. *Risk-based screening levels (RBSLs) for groundwater that is not a current or potential drinking water source.*
5. *Bold results exceed RBSLs.*

Table 8
Historical Groundwater Analytical Results
Heavy Metals
Former Thomas A. Short Company
Oakland, California

Sample Designation / Sampling Date	MW-6 5/26/00	11/27/00	3/29/01	1/15/02	4/19/02	7/11/02	10/17/02	1/27/03	4/14/03	6/16/03	Risk-Based Screening Levels
Antimony	--	<0.0050	<0.0050	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.0050	0.030
Arsenic	--	0.0091	0.0091	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.0050	0.036
Barium	--	**0.20**	**0.11**	**0.092**	**0.12**	**0.21**	<0.020	0.16	**0.21**	**0.18**	0.0039
Beryllium	--	<0.0010	<0.0010	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0010	0.0051
Cadmium	--	<0.0030	<0.0030	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0030	0.0011
Chromium	--	<0.003	<0.003	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0030	0.180
Cobalt	--	**0.0049**	**0.0040**	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0030	0.0030
Copper	--	**0.010**	**0.020**	<0.020	**0.23**	<0.020	<0.020	<0.020	<0.020	<0.0030	0.0031
Lead	**0.40**	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	0.0032
Mercury	--	<0.004	<0.004	<0.00020	<0.00020	<0.00020	**0.00041**	**0.00023**	<0.00020	<0.0030	0.000012
Molybdenum	--	0.010	0.0054	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0050	0.240
Nickel	--	**0.040**	**0.010**	<0.040	**0.10**	<0.040	<0.040	<0.040	<0.040	<0.0030	0.0082
Selenium	--	<0.0050	<0.0050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.0050	0.0050
Silver	--	**0.010**	**0.001**	**<0.010**	<0.010	**<0.010**	<0.010	<0.010	<0.010	<0.0016	0.00012
Thallium	--	<0.0050	<0.0050	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.0050	0.040
Vanadium	--	0.0036	0.003	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0030	0.019
Zinc	--	**0.050**	**0.37**	**0.031**	0.02	**0.043**	<0.0150	**0.027**	<0.0150	**0.044**	0.023

Notes:

1. *Metals analyses conducted in general accordance with U.S. Environmental Protection Agency (EPA) Methods 6010 and 7471.*
2. *Concentrations reported in milligrams per liter.*
3. *"<" = not detected at concentrations above the indicated amount.*
4. *Risk-based screening levels (RBSLs) for groundwater that is not a current or potential drinking water source.*
5. *Bold results exceed RBSLs.*



Reference:
Microsoft Expedia, Streets 98

Scale

0 5km 10km

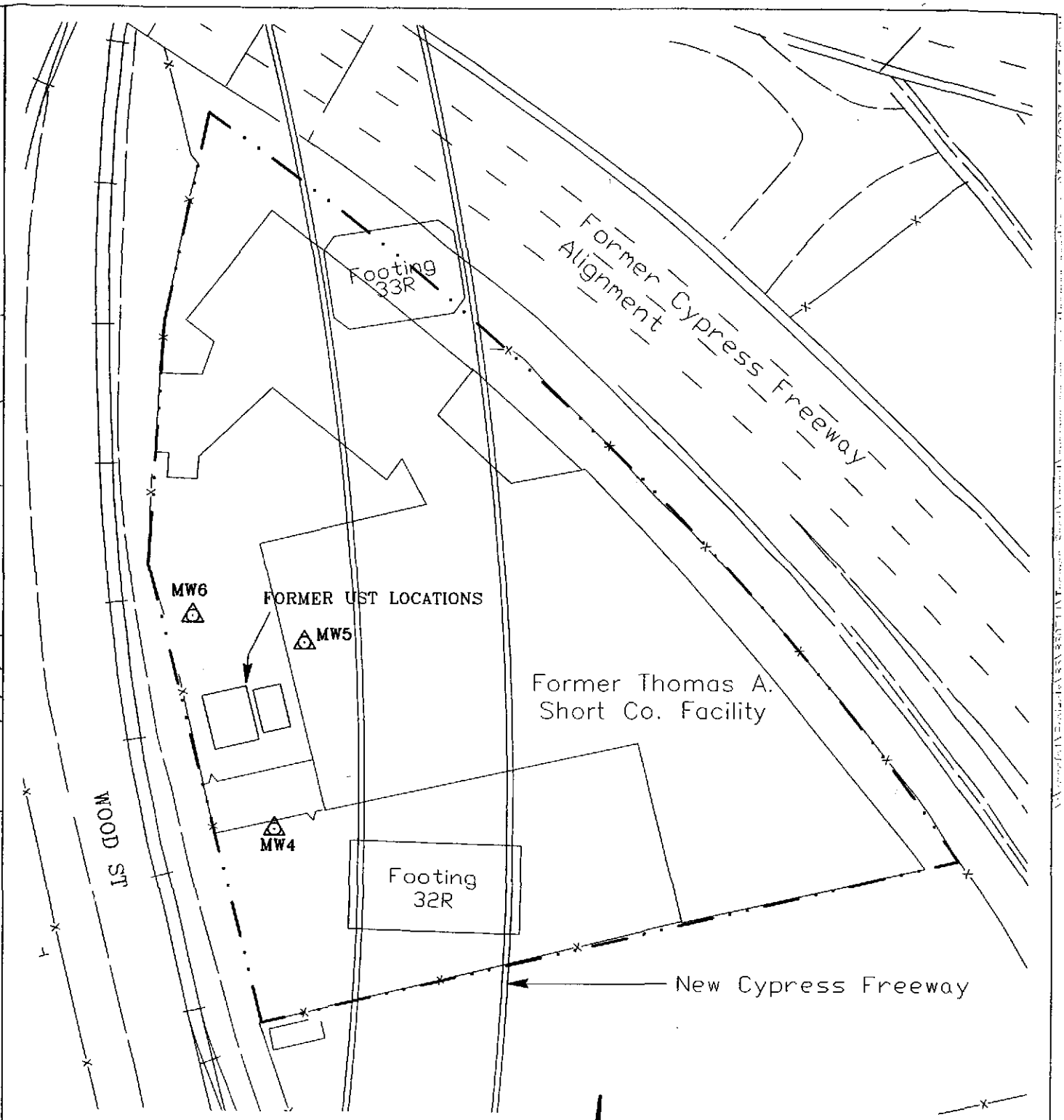
Figure 1

SITE LOCATION MAP

Caltrans-Cypress GW (Thomas Short Co.)
Quarterly GW Monitoring
Task Order No.04-911052-WB

Shaw™ Shaw Environmental, Inc.

PROJECT NUMBER	830714
CHECKED BY	
APPROVED BY	
DRAWN BY	DPB
	3/26/02



LEGEND

MW4 WELL LOCATION AND DESIGNATION

Notes:
1. Base map compliled from maps provided by Caltrans.
2. All locations and dimensions are approximate.

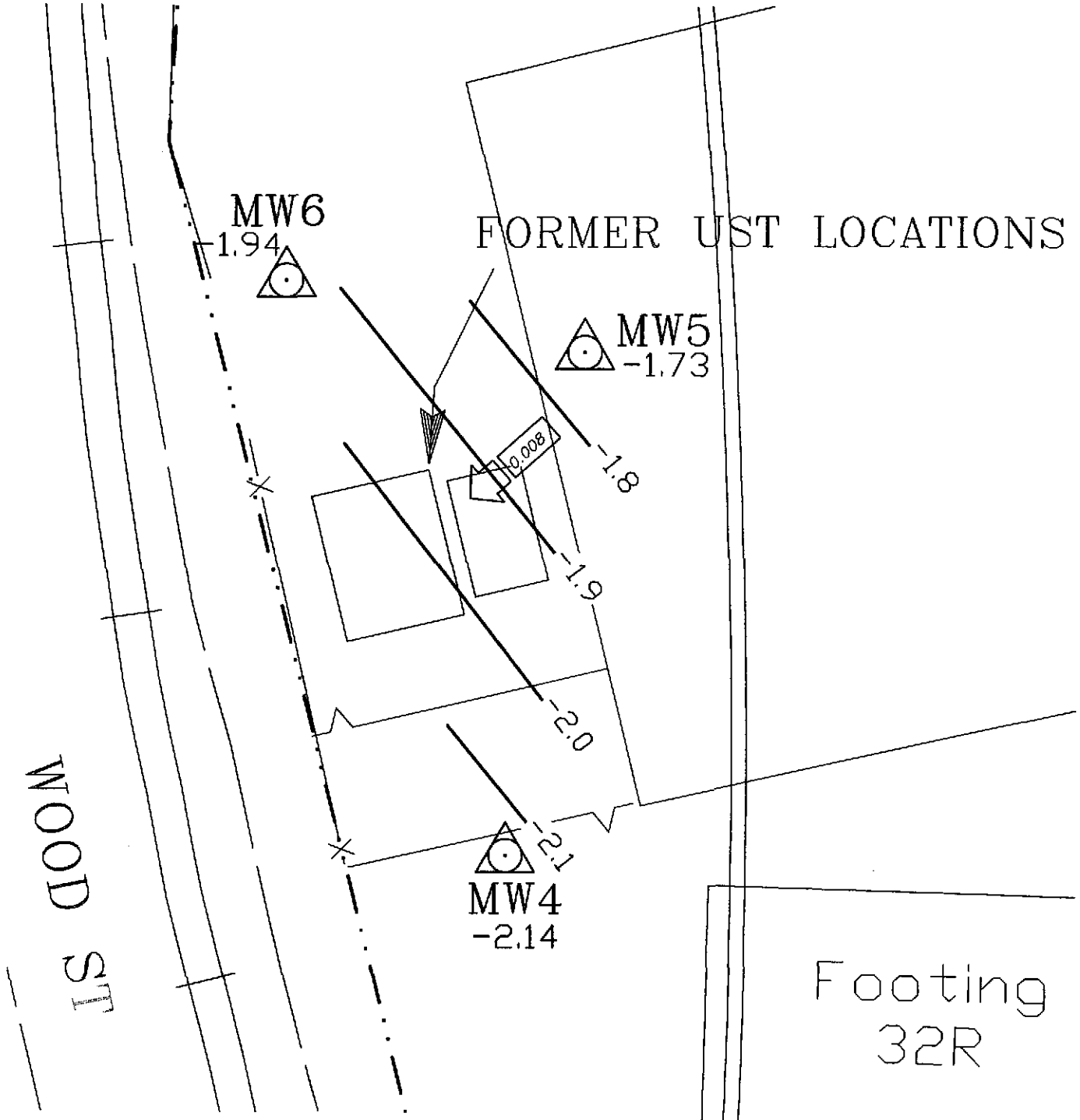
SCALE

0 50 100 Feet
0 15 30 Meters

Shaw™
Shaw E & I, Inc.

FIGURE 2

MONITORING WELL LOCATIONS
Caltrans – Former Thomas A. Short Co. Property
Oakland, California



DRAWN BY	CBD	CHECKED BY		PROJECT NUMBER
	3/17/03	APPROVED BY		830714

LEGEND

MW4 -2.14 — WELL LOCATION, DESIGNATION, AND GROUNDWATER ELEVATION IN FEET

0.008 ⇨ APPROXIMATE DIRECTION OF GROUNDWATER FLOW AND GRADIENT

Notes:
1. Base map compliled from maps provided by Caltrans.
2. All locations and dimensions are approximate.
3. Groundwater elevations reported in feet above mean sea level.

SCALE

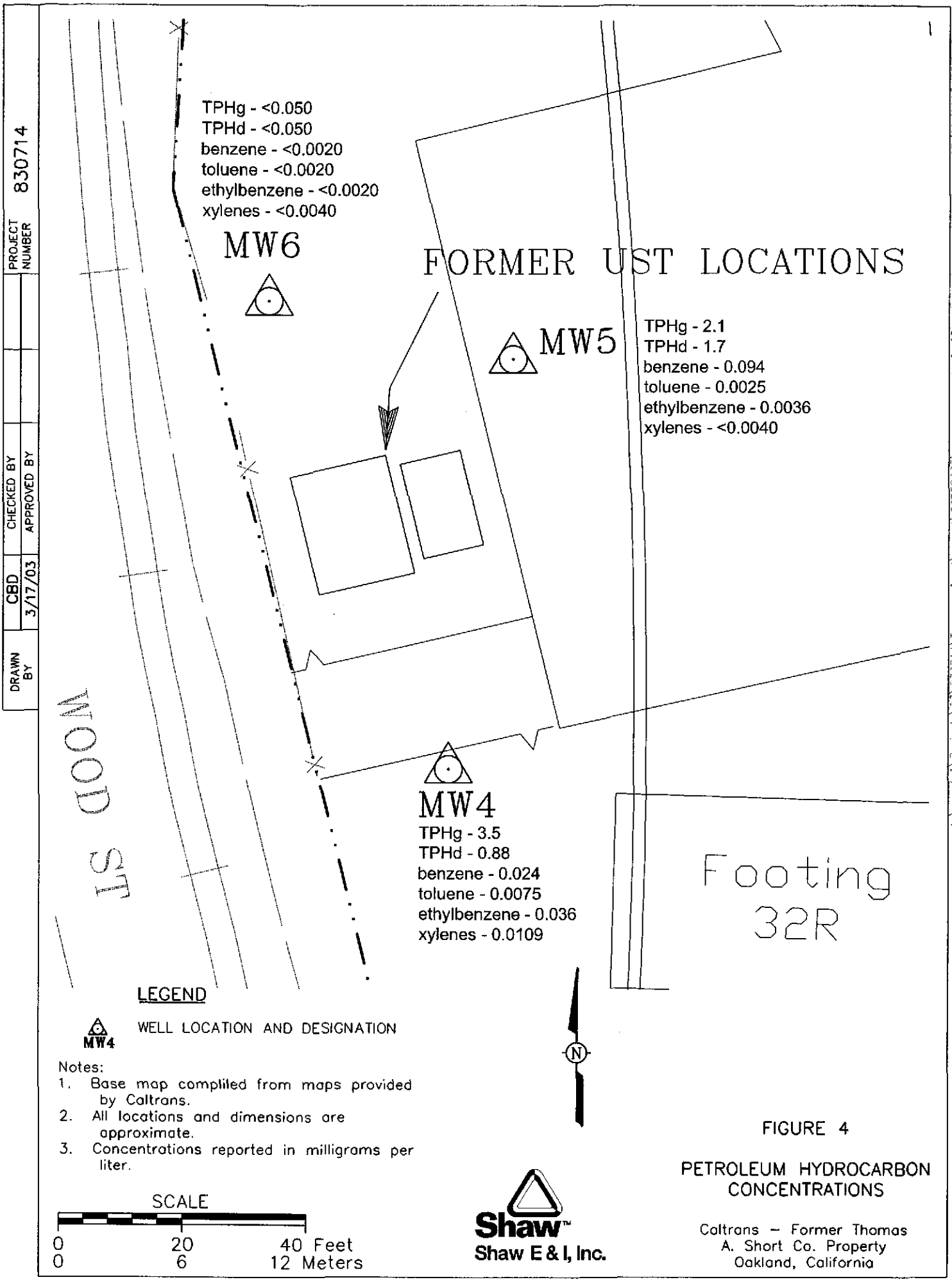
0 20 40 Feet
0 6 12 Meters

Shaw™
Shaw E & I, Inc.

FIGURE 3

PIEZOMETRIC ELEVATION CONTOUR MAP

Caltrans – Former Thomas A. Short Co. Property
Oakland, California


PROJECT NUMBER 830714
DRAWN BY CBD 3/17/03
CHECKED BY
APPROVED BY
TPHg - <0.050
TPHd - <0.050
benzene - <0.0020
toluene - <0.0020
ethylbenzene - <0.0020
xylenes - <0.0040
MW6
FORMER UST LOCATIONS
MW5
TPHg - 2.1
TPHd - 1.7
benzene - 0.094
toluene - 0.0025
ethylbenzene - 0.0036
xylenes - <0.0040
MW4
TPHg - 3.5
TPHd - 0.88
benzene - 0.024
toluene - 0.0075
ethylbenzene - 0.036
xylenes - 0.0109
Footing
32R
Wood St
LEGEND
MW4
WELL LOCATION AND DESIGNATION
N
Notes:
1. Base map compliled from maps provided by Caltrans.
2. All locations and dimensions are approximate.
3. Concentrations reported in milligrams per liter.
SCALE
0 20 40 Feet
0 6 12 Meters
Shaw™
Shaw E & I, Inc.
FIGURE 4
PETROLEUM HYDROCARBON CONCENTRATIONS
Caltrans – Former Thomas A. Short Co. Property
Oakland, California

Appendix A
Groundwater Monitoring Procedures

The procedures that were used for collecting the groundwater samples are presented below.

- General safety procedures were reviewed with the field investigation staff prior to commencement of field activities.

Groundwater Sampling Procedures

- Field activities and equipment utilization were recorded on field report forms.
- Water levels within each well casing were measured to the nearest 0.01-foot and the presence of free-phase petroleum product evaluated. The water level meter was rinsed with deionized water between wells.
- Purging was conducted using dedicated, disposable, polyethylene bailers. A minimum of three well casing volumes of water was removed from each well during purging. Wells that purge dry were purged dry twice, if at least three casing volumes of water could not be removed. Well purging activities were recorded on groundwater sample collection forms.
- The temperature, conductivity, and pH of the groundwater removed during purging of the wells was monitored.
- Water removed from the wells was contained in 208-liter (55-gallon) drums. Labels were placed on the drums with the contents, date, well number, and job number recorded on the label. The drums were stored at the site pending disposal/recycling.
- All wells were purged before any of the samples were collected. Groundwater sample collection followed in the order that the wells were purged.
- Groundwater samples were collected following recovery of water levels within the wells to at least 90 percent (%) of the pre-purge levels. A water level measurement was made prior to sample collection to confirm the recovery of water levels within the wells.
- A dedicated, disposable, polyethylene bottom valve bailer was used for collection of each groundwater sample. Polyethylene bailers were discarded after each sample was collected. New nylon rope was used to lower the bailers into the wells. The nylon rope was discarded after each well.
- Groundwater samples were placed into laboratory-supplied containers containing preservatives, except samples retained for heavy metal analyses.
- Groundwater was discharged from the bailer via a bottom-emptying device. Discharge to the containers was conducted in a manner to minimize bubbling and agitation of the

liquid. The volatile organic analysis vials were filled to the top forming a meniscus to minimize the headspace.

- Groundwater samples were collected in the following order for the indicated analyses: volatile organic compounds and fuel oxygenate compounds, total petroleum hydrocarbons as gasoline, total petroleum hydrocarbons as diesel, total recoverable petroleum hydrocarbons, and heavy metals. Groundwater grab samples collected for heavy metals analyses were not filtered in the field, but were filtered at the laboratory prior to analysis.

Sample Retention and Analysis Procedures

- Chain of custody procedures, including the use of chain of custody forms, were used to document sample handling and transport from collection to delivery to the laboratory for analysis.

- The samples were placed on ice in insulated chests overnight in the custody of an IT Corporation (IT) employee. The samples were picked up within approximately 24 hours of collection of the last sample by a courier supplied by the laboratory, or were delivered to the laboratory by IT personnel within approximately 24 hours of collection of the last sample. The samples were transported to the laboratory in a motor vehicle.

- Groundwater samples were labeled with the well number followed by the date.

- Laboratory quality assurance/quality control procedures are summarized below:

  - Method Blank Frequency = one per 20 samples
  - Matrix Spike/Matrix Spike Duplicate = one per 20 samples
  - Laboratory Control Sample/Laboratory Control Sample Duplicate = one per 20 samples

FIELD REPORT
WATER LEVEL / FLOATING PRODUCT SURVEY

SHAW Environmental & Infrastructure, Inc.
1326 North Market Boulevard
Sacramento, California 95834

PROJECT NO : 830714 / 01010000 **LOCATION : 3430 Wood Street, Oakland**

DATE: 6-16-03

CLIENT : Caltrans
Former Thomas Short Co. Property

SAMPLER : Paul Weinhardt

WELL ID	TIME	TOTAL DEPTH (Feet)	DEPTH TO WATER (Feet)	DEPTH TO FLOATING PRODUCT (Feet)	FLOATING PRODUCT THICKNESS (Feet)	COMMENTS
MW-4	901	15.00	10.47			
MW-5	857	19.20	14.08			
MW-6	854	18.70	13.95	—	—	

Comments :

Paul Weinhardt
Signature

Rev. 1/97

WATER SAMPLE FIELD DATA SHEET

PROJECT NO : 830714 / 01010000 — SAMPLE ID : MW4

PURGED BY : Paul Weinhardt — CLIENT NAME : Caltrans - Former Thomas Short Co.

SAMPLED BY : Paul Weinhardt — LOCATION : 3430 Wood Street, Oakland, CA

TYPE: Groundwater X — Surface Water ____ — Leachate ____ — Other ____

CASING DIAMETER (inches): 2 X (.163) — 3 ____ (.367) — 4 ____ (.652) — 4.5 ____ (.826) — 6 ____ (1.47) — Other ____ (1"-.041 / 8"-2.61)

CASING ELEVATION (feet/MSL) : ____ — VOLUME IN CASING (gal.) : .77

DEPTH OF WELL (feet) : 15.00 — CALCULATED PURGE (gal.) : 2.31

DEPTH TO WATER (feet) : 10.47 — ACTUAL PURGE VOL. (gal.) : 2.25

DATE PURGED : 6.16.03 — END PURGE : 940

DATE SAMPLED : 6.16.03 — SAMPLING TIME : 1012

DTW AT SAMPLE TIME: 1021

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°c)	TEMPERATURE (°C)	COLOR (visual)	TURBIDITY (visual)
937	.75	843	3518	18.3°	cloudy	MOD
940	1.5	796	3757	18.4°	cloudy	mod
943	2.25	781	4036	18.5°	cloudy	MOD

OTHER: ____ — ODOR: ____ — (COBALT 0-100) — (NTU 0-200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1) : ____

PURGING EQUIPMENT

____ 2" Bladder Pump — ____ Bailer (Teflon)
____ Centrifugal Pump — ____ Bailer (PVC)
____ Submersible Pump — ____ Bailer (Stainless Steel)
X Dispo Bailer — ____ Dedicated
Other: ____

SAMPLING EQUIPMENT

____ 2" Bladder Pump — ____ Bailer (Teflon)
____ Bomb Sampler — ____ Bailer (Stainless Steel)
____ Dipper — ____ Submersible Pump
X Dispo Bailer — ____ Dedicated
Other: ____

WELL INTEGRITY: Good — LOCK: NO

REMARKS: ____

pH, E.C., Temp. Meter Calibration: Date: ____ Time: ____ Meter Serial No.: ____

E.C. 1000 ____ / ____ — pH 7 ____ / ____ — pH 10 ____ / ____ — pH 4 ____ / ____

Temperature °C ____

SIGNATURE: Paul Weinhardt — REVIEWED BY: ____ — PAGE 1 OF 3

Rev. 1/97

WATER SAMPLE FIELD DATA SHEET

PROJECT NO : 830714 / 01010000 — SAMPLE ID : MW5

PURGED BY : Paul Weinhardt — CLIENT NAME : Caltrans - Former Thomas Short Co.

SAMPLED BY : Paul Weinhardt — LOCATION : 3430 Wood Street, Oakland, CA

TYPE: Groundwater X — Surface Water ____ — Leachate ____ — Other ____

CASING DIAMETER (inches): 2 X (.163) — 3 ____ (.367) — 4 ____ (.652) — 4.5 ____ (.826) — 6 ____ (1.47) — Other ____ (1"-.041 / 8"-2.61)

CASING ELEVATION (feet/MSL) : ____ — VOLUME IN CASING (gal.) : .87

DEPTH OF WELL (feet) : 19.20 — CALCULATED PURGE (gal.) : 2.61

DEPTH TO WATER (feet) : 14.08 — ACTUAL PURGE VOL. (gal.) : 3.00

DATE PURGED : 6.16.03 — END PURGE : 927

DATE SAMPLED : 6.16.03 — SAMPLING TIME : 1001

DTW AT SAMPLE TIME: 14.39

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°c)	TEMPERATURE (°C)	COLOR (visual)	TURBIDITY (visual)
924	1.0	789	3307	19.10	cloudy	MOD
926	2.0	746	2801	18.70	cloudy	MOD
927	3.0	727	2748	18.5	cloudy	MOD

OTHER: ____ — ODOR: ____ — (COBALT 0-100) — (NTU 0-200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1) : ____

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon)	____ 2" Bladder Pump	____ Bailer (Teflon)
____ Centrifugal Pump	____ Bailer (PVC)	____ Bomb Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
X Dispo Bailer	____ Dedicated	X Dispo Bailer	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: Good — LOCK: NO

REMARKS: ____

pH, E.C., Temp. Meter Calibration: Date: ____ Time: ____ Meter Serial No.: ____

E.C. 1000 ____ / ____ pH 7 ____ / ____ pH 10 ____ / ____ pH 4 ____ / ____

Temperature °C ____

SIGNATURE: Paul Weinhardt — REVIEWED BY: ____ — PAGE 2 OF 3

Rev. 1/97

WATER SAMPLE FIELD DATA SHEET

PROJECT NO : 830714 / 01010000 — SAMPLE ID : MW6

PURGED BY : Paul Weinhardt — CLIENT NAME : Caltrans - Former Thomas Short Co.

SAMPLED BY : Paul Weinhardt — LOCATION : 3430 Wood Street, Oakland, CA

TYPE: Groundwater X — Surface Water ____ — Leachate ____ — Other ____

CASING DIAMETER (inches): 2 X (.163) — 3 ____ (.367) — 4 ____ (.652) — 4.5 ____ (.826) — 6 ____ (1.47) — Other ____ (1"-.041 / 8"-2.61)

CASING ELEVATION (feet/MSL) : ____ — VOLUME IN CASING (gal.) : 1.80

DEPTH OF WELL (feet) : 18.70 — CALCULATED PURGE (gal.) : 2.42

DEPTH TO WATER (feet) : 13.95 — ACTUAL PURGE VOL. (gal.) : 2.25

DATE PURGED : 6.16.03 — END PURGE : 916

DATE SAMPLED : 6.16.03 — SAMPLING TIME : 954

DTW AT SAMPLE TIME: 14.65

TIME (2400 HR)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm@25°c)	TEMPERATURE (°C)	COLOR (visual)	TURBIDITY (visual)
910	1.75	7.56	3516	21.10	cloudy	MOD
913	1.5	7.46	5117	19.4°	cloudy	MOD
916	2.25	7.43	5326	19.1°	cloudy	MOD

OTHER: ____ — ODOR: ____ — (COBALT 0-100) — (NTU 0-200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1) : ____

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon)	____ 2" Bladder Pump	____ Bailer (Teflon)
____ Centrifugal Pump	____ Bailer (PVC)	____ Bomb Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
X Dispo Bailer	____ Dedicated	X Dispo Bailer	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: Good — LOCK: NO

REMARKS: ____

pH, E.C., Temp. Meter Calibration: Date: ____ Time: ____ Meter Serial No.: ____

E.C. 1000 ____ / ____ pH 7 ____ / ____ pH 10 ____ / ____ pH 4 ____ / ____

Temperature °C ____

SIGNATURE: Paul Weinhardt — REVIEWED BY: [signature] — PAGE 3 OF 3

Sparger Technology, Inc.
Environmental Laboratories

Martha Adams
Shaw Environmental & Infrastructure
1326 N. Market Blvd.
Sacramento, CA 95834

Client	Shaw Environmental & Infrastructure
Workorder	15639 Caltrans, Thomas Short 830714
Received	06/17/03

The samples were received in EPA specified containers. The samples were transported and received under documented chain of custody and stored at four (4) degrees C until analysis was performed.

Sparger Technology, Inc. ID Suffix Keys - These descriptors will follow the Sparger Technology, Inc. ID numbers and help identify the specific sample and clarify the report.

DUP - Matrix Duplicate
MS - Matrix Spike
MSD - Matrix Spike Duplicate
LCS - Lab Control Sample
LCSD - Lab Control Sample Duplicate
RPD - Relative Percent Difference
QC - Additional Quality Control
DIL - Results from a diluted sample
ND - None Detected
RL - Reporting Limit

Note: In an effort to conserve paper, the results are printed on both sides of the paper.

Ray James
Laboratory Director

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639001	**Received**	06/16/03
Sample ID	MW-4	**Reported**	06/27/03
Matrix	Water		

8015M DHS TPH LUFT - 8015M DHS

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHdiesel[1]	06/17/03	06/18/03	880	50	ug/L	1:1

1 - Non-typical TPH pattern in gas range.

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639001	**Received**	06/16/03
Sample ID	MW-4	**Reported**	06/27/03
Matrix	Water		

8015M DHS TPH LUFT - 8015M DHS

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	06/18/03	06/18/03	3500	50	ug/L	1:1

Surrogates	Result	Recovery	Limits
Trifluorotoluene	22.4 ug/L	112 %	(65 - 135)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639001	**Received**	06/16/03
Sample ID	MW-4	**Reported**	06/27/03
Matrix	Water		

EPA Method 7470A Mercury - EPA 7470A

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Mercury	06/18/03	06/27/03	ND	0.00020	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639001	**Received**	06/16/03
Sample ID	MW-4	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Dichlorodifluoromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Vinyl chloride	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromomethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Trichlorofluoromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acrolein	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acetone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Methyl iodide	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Carbon disulfide	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dichloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acrylonitrile	06/17/03	06/17/03	ND	2.0	ug/L	1:1
trans-1,2-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-Dichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Vinyl acetate	06/17/03	06/17/03	ND	2.0	ug/L	1:1
cis-1,2-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Butanone (MEK)	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromochloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloroform	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2,2-dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,1-Trichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Carbon tetrachloride	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Benzene	**06/17/03**	**06/17/03**	**24**	**2.0**	**ug/L**	**1:1**
1,2-Dichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dibromomethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromodichloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Trichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Chloroethylvinyl ether	06/17/03	06/17/03	ND	2.0	ug/L	1:1
cis-1,3-Dichloropropene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639001	**Received**	06/16/03
Sample ID	MW-4	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B (continued)

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
4-Methyl-2-pentanone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
trans-1,3Dichloropropene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,2-Trichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Toluene	**06/17/03**	**06/17/03**	**7.5**	**2.0**	**ug/L**	**1:1**
1,2-Dibromoethane (EDB)	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3-Dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Hexanone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dibromochloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Tetrachloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,1,2Tetrachloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Ethylbenzene	**06/17/03**	**06/17/03**	**36**	**2.0**	**ug/L**	**1:1**
M+P-Xylene	**06/17/03**	**06/17/03**	**8.5**	**2.0**	**ug/L**	**1:1**
Bromoform	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Styrene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
o-Xylene	**06/17/03**	**06/17/03**	**2.4**	**2.0**	**ug/L**	**1:1**
1,1,2,2Tetrachloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,3-Trichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Isopropylbenzene (Cumene)	**06/17/03**	**06/17/03**	**130**	**2.0**	**ug/L**	**1:1**
Bromobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
n-Propylbenzene	**06/17/03**	**06/17/03**	**200**	**2.0**	**ug/L**	**1:1**
2-Chlorotoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Chlorotoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3,5-Trimethylbenzene	**06/17/03**	**06/17/03**	**24**	**2.0**	**ug/L**	**1:1**
tert-Butylbenzene	**06/17/03**	**06/17/03**	**23**	**2.0**	**ug/L**	**1:1**
1,2,4-Trimethylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
sec-Butylbenzene	**06/17/03**	**06/17/03**	**14**	**2.0**	**ug/L**	**1:1**
1,3-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,4-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Isopropyltoluene	**06/17/03**	**06/17/03**	**8.8**	**2.0**	**ug/L**	**1:1**
1,2-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
n-Butylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639001	**Received**	06/16/03
Sample ID	MW-4	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B (continued)

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
1,2Dibromo3chloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,4-Trichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Naphthalene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Hexachlorobutadiene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,3-Trichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	53.5 ug/L	107 %	(65 - 135)
Toluene d8	52.7 ug/L	105 %	(65 - 118)
4-Bromofluorobenzene	55.8 ug/L	112 %	(65 - 121)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639001	**Received**	06/16/03
Sample ID	MW-4	**Reported**	06/27/03
Matrix	Water		

Metals, CAM17 - 6010B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Antimony	06/18/03	06/19/03	ND	0.060	mg/L	1:1
Arsenic	06/18/03	06/19/03	ND	0.080	mg/L	1:1
Barium	**06/18/03**	**06/19/03**	**0.24**	**0.020**	**mg/L**	**1:1**
Beryllium	06/18/03	06/19/03	ND	0.0030	mg/L	1:1
Cadmium	06/18/03	06/19/03	ND	0.0050	mg/L	1:1
Chromium	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Cobalt	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Copper	06/18/03	06/19/03	ND	0.020	mg/L	1:1
Lead	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Molybdenum	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Nickel	06/18/03	06/19/03	ND	0.040	mg/L	1:1
Selenium	06/18/03	06/19/03	ND	0.10	mg/L	1:1
Silver	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Thallium	06/18/03	06/19/03	ND	0.10	mg/L	1:1
Vanadium	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Zinc	**06/18/03**	**06/19/03**	**0.054**	**0.015**	**mg/L**	**1:1**

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639002	**Received**	06/16/03
Sample ID	MW-5	**Reported**	06/27/03
Matrix	Water		

8015M DHS TPH LUFT - 8015M DHS

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHdiesel[1]	06/17/03	06/18/03	1700	50	ug/L	1:1

1 - Non-typical TPH pattern in gas range.

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639002	**Received**	06/16/03
Sample ID	MW-5	**Reported**	06/27/03
Matrix	Water		

8015M DHS TPH LUFT - 8015M DHS

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	06/18/03	06/18/03	2100	50	ug/L	1:1

Surrogates	Result	Recovery	Limits
Trifluorotoluene	18.7 ug/L	94 %	(65 - 135)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639002	**Received**	06/16/03
Sample ID	MW-5	**Reported**	06/27/03
Matrix	Water		

EPA Method 7470A Mercury - EPA 7470A

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Mercury	06/18/03	06/27/03	ND	0.00020	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639002	**Received**	06/16/03
Sample ID	MW-5	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Dichlorodifluoromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Vinyl chloride	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromomethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Trichlorofluoromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acrolein	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acetone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Methyl iodide	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Carbon disulfide	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dichloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acrylonitrile	06/17/03	06/17/03	ND	2.0	ug/L	1:1
trans-1,2-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-Dichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Vinyl acetate	06/17/03	06/17/03	ND	2.0	ug/L	1:1
cis-1,2-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Butanone (MEK)	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromochloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloroform	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2,2-dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,1-Trichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Carbon tetrachloride	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Benzene	**06/17/03**	**06/17/03**	**94**	**2.0**	**ug/L**	**1:1**
1,2-Dichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dibromomethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromodichloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Trichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Chloroethylvinyl ether	06/17/03	06/17/03	ND	2.0	ug/L	1:1
cis-1,3-Dichloropropene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639002	**Received**	06/16/03
Sample ID	MW-5	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B (continued)

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
4-Methyl-2-pentanone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
trans-1,3Dichloropropene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,2-Trichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Toluene	**06/17/03**	**06/17/03**	**2.5**	**2.0**	**ug/L**	**1:1**
1,2-Dibromoethane (EDB)	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3-Dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Hexanone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dibromochloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Tetrachloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,1,2Tetrachloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Ethylbenzene	**06/17/03**	**06/17/03**	**3.6**	**2.0**	**ug/L**	**1:1**
M+P-Xylene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromoform	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Styrene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
o-Xylene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,2,2Tetrachloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,3-Trichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Isopropylbenzene (Cumene)	**06/17/03**	**06/17/03**	**6.3**	**2.0**	**ug/L**	**1:1**
Bromobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
n-Propylbenzene	**06/17/03**	**06/17/03**	**7.4**	**2.0**	**ug/L**	**1:1**
2-Chlorotoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Chlorotoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3,5-Trimethylbenzene	**06/17/03**	**06/17/03**	**3.0**	**2.0**	**ug/L**	**1:1**
tert-Butylbenzene	**06/17/03**	**06/17/03**	**19**	**2.0**	**ug/L**	**1:1**
1,2,4-Trimethylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
sec-Butylbenzene	**06/17/03**	**06/17/03**	**2.4**	**2.0**	**ug/L**	**1:1**
1,3-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,4-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Isopropyltoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
n-Butylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639002	**Received**	06/16/03
Sample ID	MW-5	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B (continued)

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
1,2Dibromo3chloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,4-Trichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Naphthalene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Hexachlorobutadiene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,3-Trichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	49.7 ug/L	99 %	(65 - 135)
Toluene d8	51.8 ug/L	104 %	(65 - 118)
4-Bromofluorobenzene	56.6 ug/L	113 %	(65 - 121)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639002	**Received**	06/16/03
Sample ID	MW-5	**Reported**	06/27/03
Matrix	Water		

Metals, CAM17 - 6010B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Antimony	06/18/03	06/19/03	ND	0.060	mg/L	1:1
Arsenic	06/18/03	06/19/03	ND	0.080	mg/L	1:1
Barium	**06/18/03**	**06/19/03**	**0.41**	**0.020**	**mg/L**	**1:1**
Beryllium	06/18/03	06/19/03	ND	0.0030	mg/L	1:1
Cadmium	06/18/03	06/19/03	ND	0.0050	mg/L	1:1
Chromium	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Cobalt	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Copper	06/18/03	06/19/03	ND	0.020	mg/L	1:1
Lead	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Molybdenum	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Nickel	06/18/03	06/19/03	ND	0.040	mg/L	1:1
Selenium	06/18/03	06/19/03	ND	0.10	mg/L	1:1
Silver	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Thallium	06/18/03	06/19/03	ND	0.10	mg/L	1:1
Vanadium	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Zinc	**06/18/03**	**06/19/03**	**0.058**	**0.015**	**mg/L**	**1:1**

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639003	**Received**	06/16/03
Sample ID	MW-6	**Reported**	06/27/03
Matrix	Water		

8015M DHS TPH LUFT - 8015M DHS

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHdiesel	06/17/03	06/18/03	ND	50	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639003	**Received**	06/16/03
Sample ID	MW-6	**Reported**	06/27/03
Matrix	Water		

8015M DHS TPH LUFT - 8015M DHS

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	06/18/03	06/18/03	ND	50	ug/L	1:1

Surrogates	Result	Recovery	Limits
Trifluorotoluene	21.3 ug/L	106 %	(65 - 135)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639003	**Received**	06/16/03
Sample ID	MW-6	**Reported**	06/27/03
Matrix	Water		

EPA Method 7470A Mercury - EPA 7470A

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Mercury	06/18/03	06/27/03	ND	0.00020	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639003	**Received**	06/16/03
Sample ID	MW-6	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Dichlorodifluoromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Vinyl chloride	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromomethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Trichlorofluoromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acrolein	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acetone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Methyl iodide	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Carbon disulfide	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dichloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acrylonitrile	06/17/03	06/17/03	ND	2.0	ug/L	1:1
trans-1,2-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-Dichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Vinyl acetate	06/17/03	06/17/03	ND	2.0	ug/L	1:1
cis-1,2-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Butanone (MEK)	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromochloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloroform	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2,2-dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,1-Trichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Carbon tetrachloride	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Benzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dibromomethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromodichloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Trichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Chloroethylvinyl ether	06/17/03	06/17/03	ND	2.0	ug/L	1:1
cis-1,3-Dichloropropene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639003	**Received**	06/16/03
Sample ID	MW-6	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B (continued)

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
4-Methyl-2-pentanone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
trans-1,3Dichloropropene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,2-Trichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Toluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dibromoethane (EDB)	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3-Dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Hexanone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dibromochloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Tetrachloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,1,2Tetrachloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Ethylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
M+P-Xylene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromoform	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Styrene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
o-Xylene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,2,2Tetrachloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,3-Trichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Isopropylbenzene (Cumene)	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
n-Propylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Chlorotoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Chlorotoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3,5-Trimethylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
tert-Butylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,4-Trimethylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
sec-Butylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,4-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Isopropyltoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
n-Butylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639003	**Received**	06/16/03
Sample ID	MW-6	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B (continued)

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
1,2Dibromo3chloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,4-Trichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Naphthalene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Hexachlorobutadiene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,3-Trichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	46.5 ug/L	93 %	(65 - 135)
Toluene d8	50.9 ug/L	102 %	(65 - 118)
4-Bromofluorobenzene	55.5 ug/L	111 %	(65 - 121)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639003	**Received**	06/16/03
Sample ID	MW-6	**Reported**	06/27/03
Matrix	Water		

Metals, CAM17 - 6010B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Antimony	06/18/03	06/19/03	ND	0.060	mg/L	1:1
Arsenic	06/18/03	06/19/03	ND	0.080	mg/L	1:1
Barium	**06/18/03**	**06/19/03**	**0.18**	**0.020**	**mg/L**	**1:1**
Beryllium	06/18/03	06/19/03	ND	0.0030	mg/L	1:1
Cadmium	06/18/03	06/19/03	ND	0.0050	mg/L	1:1
Chromium	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Cobalt	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Copper	06/18/03	06/19/03	ND	0.020	mg/L	1:1
Lead	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Molybdenum	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Nickel	06/18/03	06/19/03	ND	0.040	mg/L	1:1
Selenium	06/18/03	06/19/03	ND	0.10	mg/L	1:1
Silver	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Thallium	06/18/03	06/19/03	ND	0.10	mg/L	1:1
Vanadium	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Zinc	**06/18/03**	**06/19/03**	**0.044**	**0.015**	**mg/L**	**1:1**

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639004	**Received**	06/16/03
Sample ID	Trip Blank	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
Dichlorodifluoromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Vinyl chloride	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromomethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Trichlorofluoromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acrolein	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acetone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Methyl iodide	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Carbon disulfide	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dichloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acrylonitrile	06/17/03	06/17/03	ND	2.0	ug/L	1:1
trans-1,2-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-Dichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Vinyl acetate	06/17/03	06/17/03	ND	2.0	ug/L	1:1
cis-1,2-Dichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Butanone (MEK)	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromochloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloroform	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2,2-dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,1-Trichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Carbon tetrachloride	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Benzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dibromomethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromodichloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Trichloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Chloroethylvinyl ether	06/17/03	06/17/03	ND	2.0	ug/L	1:1
cis-1,3-Dichloropropene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639004	**Received**	06/16/03
Sample ID	Trip Blank	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B (continued)

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
4-Methyl-2-pentanone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
trans-1,3Dichloropropene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,2-Trichloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Toluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dibromoethane (EDB)	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3-Dichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Hexanone	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dibromochloromethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Tetrachloroethene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,1,2Tetrachloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Ethylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
M+P-Xylene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromoform	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Styrene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
o-Xylene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,2,2Tetrachloroethane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,3-Trichloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Isopropylbenzene (Cumene)	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
n-Propylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Chlorotoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Chlorotoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3,5-Trimethylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
tert-Butylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,4-Trimethylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
sec-Butylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,4-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Isopropyltoluene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
n-Butylbenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Test Certificate of Analysis

Client ID	Shaw Environmental & Infrastructure	**Workorder ID**	Caltrans, Thomas Short 830714
Workorder #	15639	**Sampled**	06/16/03
Laboratory ID	15639004	**Received**	06/16/03
Sample ID	Trip Blank	**Reported**	06/27/03
Matrix	Water		

8260B GC/MS Volatiles - 8260B (continued)

Parameter	Prep Date	Analyzed	Result	RL	Units	Dilution
1,2Dibromo3chloropropane	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,4-Trichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Naphthalene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Hexachlorobutadiene	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,3-Trichlorobenzene	06/17/03	06/17/03	ND	2.0	ug/L	1:1

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	45.9 ug/L	92 %	(65 - 135)
Toluene d8	49.9 ug/L	100 %	(65 - 118)
4-Bromofluorobenzene	53.6 ug/L	107 %	(65 - 121)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Test Certificate of Analysis

Client ID Shaw Environmental & Infrastructure
Workorder # 15639 **Workorder ID** Caltrans, Thomas Short 830714

Parameter TPHgas
Method 8015M DHS

Lab ID	Sample ID	Result	RL	Units	Collected	Analyzed	Matrix	Dilution
15639004	Trip Blank	ND	50	ug/L	06/16/03	06/18/03	Water	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Method Blank Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55577
Sample ID	MB for HBN 187783 [VGXV/2488]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	8015M DHS	06/18/03	06/18/03	ND	50	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Lab Control Sample Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55578
Sample ID	LCS for HBN 187783 [VGXV/2488]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	8015M DHS	06/18/03	06/18/03	910	50	ug/L	1:

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Lab Control Sample Duplicate Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55579
Sample ID	LCSD for HBN 187783 [VGXV/2488
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	8015M DHS	06/18/03	06/18/03	890	50	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Matrix Spike Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55580
Sample ID	MS for HBN 187783 [VGXV/2488]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	8015M DHS	06/18/03	06/18/03	830	50	ug/L	1:

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Matrix Spike Duplicate Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55581
Sample ID	MSD for HBN 187783 [VGXV/2488]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHgas	8015M DHS	06/18/03	06/18/03	770	50	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Method Blank Report

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
Laboratory ID 55582
Sample ID MB for HBN 187790 [ICPV/4428]
Matrix Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Antimony	6010B	06/18/03	06/19/03	ND	0.060	mg/L	1:1
Arsenic	6010B	06/18/03	06/19/03	ND	0.080	mg/L	1:1
Barium	6010B	06/18/03	06/19/03	ND	0.020	mg/L	1:1
Beryllium	6010B	06/18/03	06/19/03	ND	0.0030	mg/L	1:1
Cadmium	6010B	06/18/03	06/19/03	ND	0.0050	mg/L	1:1
Chromium	6010B	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Cobalt	6010B	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Copper	6010B	06/18/03	06/19/03	ND	0.020	mg/L	1:1
Lead	6010B	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Molybdenum	6010B	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Nickel	6010B	06/18/03	06/19/03	ND	0.040	mg/L	1:1
Selenium	6010B	06/18/03	06/19/03	ND	0.10	mg/L	1:1
Silver	6010B	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Thallium	6010B	06/18/03	06/19/03	ND	0.10	mg/L	1:1
Vanadium	6010B	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Zinc	6010B	06/18/03	06/19/03	ND	0.015	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Lab Control Sample Report

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
Laboratory ID 55583
Sample ID LCS for HBN 187790 [ICPV/4428]
Matrix Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Antimony	6010B	06/18/03	06/19/03	0.55	0.060	mg/L	1:1
Arsenic	6010B	06/18/03	06/19/03	0.50	0.080	mg/L	1:1
Barium	6010B	06/18/03	06/19/03	0.57	0.020	mg/L	1:1
Beryllium	6010B	06/18/03	06/19/03	0.11	0.0030	mg/L	1:1
Cadmium	6010B	06/18/03	06/19/03	0.20	0.0050	mg/L	1:1
Chromium	6010B	06/18/03	06/19/03	0.46	0.010	mg/L	1:1
Cobalt	6010B	06/18/03	06/19/03	0.22	0.050	mg/L	1:1
Copper	6010B	06/18/03	06/19/03	0.56	0.020	mg/L	1:1
Lead	6010B	06/18/03	06/19/03	0.55	0.010	mg/L	1:1
Molybdenum	6010B	06/18/03	06/19/03	0.54	0.050	mg/L	1:1
Nickel	6010B	06/18/03	06/19/03	0.93	0.040	mg/L	1:1
Selenium	6010B	06/18/03	06/19/03	0.41	0.10	mg/L	1:1
Thallium	6010B	06/18/03	06/19/03	0.49	0.10	mg/L	1:1
Vanadium	6010B	06/18/03	06/19/03	0.21	0.050	mg/L	1:1
Zinc	6010B	06/18/03	06/19/03	0.43	0.015	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Lab Control Sample Duplicate Report

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
Laboratory ID 55584
Sample ID LCSD for HBN 187790 [ICPV/4428
Matrix Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Antimony	6010B	06/18/03	06/19/03	0.53	0.060	mg/L	1:1
Arsenic	6010B	06/18/03	06/19/03	0.49	0.080	mg/L	1:1
Barium	6010B	06/18/03	06/19/03	0.56	0.020	mg/L	1:1
Beryllium	6010B	06/18/03	06/19/03	0.11	0.0030	mg/L	1:1
Cadmium	6010B	06/18/03	06/19/03	0.19	0.0050	mg/L	1:1
Chromium	6010B	06/18/03	06/19/03	0.44	0.010	mg/L	1:1
Cobalt	6010B	06/18/03	06/19/03	0.21	0.050	mg/L	1:1
Copper	6010B	06/18/03	06/19/03	0.53	0.020	mg/L	1:1
Lead	6010B	06/18/03	06/19/03	0.51	0.010	mg/L	1:1
Molybdenum	6010B	06/18/03	06/19/03	0.50	0.050	mg/L	1:1
Nickel	6010B	06/18/03	06/19/03	0.90	0.040	mg/L	1:1
Selenium	6010B	06/18/03	06/19/03	0.38	0.10	mg/L	1:1
Thallium	6010B	06/18/03	06/19/03	0.46	0.10	mg/L	1:1
Vanadium	6010B	06/18/03	06/19/03	0.20	0.050	mg/L	1:1
Zinc	6010B	06/18/03	06/19/03	0.39	0.015	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Duplicate Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55585
Sample ID	DUP for HBN 187790 [ICPV/4428]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Antimony	6010B	06/18/03	06/19/03	ND	0.060	mg/L	1:1
Arsenic	6010B	06/18/03	06/19/03	ND	0.080	mg/L	1:1
Barium	6010B	06/18/03	06/19/03	0.24	0.020	mg/L	1:1
Beryllium	6010B	06/18/03	06/19/03	ND	0.0030	mg/L	1:1
Cadmium	6010B	06/18/03	06/19/03	ND	0.0050	mg/L	1:1
Chromium	6010B	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Cobalt	6010B	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Copper	6010B	06/18/03	06/19/03	ND	0.020	mg/L	1:1
Lead	6010B	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Molybdenum	6010B	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Nickel	6010B	06/18/03	06/19/03	ND	0.040	mg/L	1:1
Selenium	6010B	06/18/03	06/19/03	ND	0.10	mg/L	1:1
Silver	6010B	06/18/03	06/19/03	ND	0.010	mg/L	1:1
Thallium	6010B	06/18/03	06/19/03	ND	0.10	mg/L	1:1
Vanadium	6010B	06/18/03	06/19/03	ND	0.050	mg/L	1:1
Zinc	6010B	06/18/03	06/19/03	0.042	0.015	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Matrix Spike Report

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
Laboratory ID 55586
Sample ID MS for HBN 187790 [ICPV/4428]
Matrix Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Antimony	6010B	06/18/03	06/19/03	0.54	0.060	mg/L	1:1
Arsenic	6010B	06/18/03	06/19/03	0.54	0.080	mg/L	1:1
Barium	6010B	06/18/03	06/19/03	0.78	0.020	mg/L	1:1
Beryllium	6010B	06/18/03	06/19/03	0.12	0.0030	mg/L	1:1
Cadmium	6010B	06/18/03	06/19/03	0.21	0.0050	mg/L	1:1
Chromium	6010B	06/18/03	06/19/03	0.44	0.010	mg/L	1:1
Cobalt	6010B	06/18/03	06/19/03	0.20	0.050	mg/L	1:1
Copper	6010B	06/18/03	06/19/03	0.52	0.020	mg/L	1:1
Lead	6010B	06/18/03	06/19/03	0.50	0.010	mg/L	1:1
Molybdenum	6010B	06/18/03	06/19/03	0.52	0.050	mg/L	1:1
Nickel	6010B	06/18/03	06/19/03	0.86	0.040	mg/L	1:1
Selenium	6010B	06/18/03	06/19/03	0.40	0.10	mg/L	1:1
Silver	6010B	06/18/03	06/19/03	0.044	0.010	mg/L	1:1
Thallium	6010B	06/18/03	06/19/03	0.39	0.10	mg/L	1:1
Vanadium	6010B	06/18/03	06/19/03	0.19	0.050	mg/L	1:1
Zinc	6010B	06/18/03	06/19/03	0.45	0.015	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Matrix Spike Duplicate Report

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
Laboratory ID 55587
Sample ID MSD for HBN 187790 [ICPV/4428]
Matrix Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Antimony	6010B	06/18/03	06/19/03	0.53	0.060	mg/L	1:1
Arsenic	6010B	06/18/03	06/19/03	0.54	0.080	mg/L	1:1
Barium	6010B	06/18/03	06/19/03	0.80	0.020	mg/L	1:1
Beryllium	6010B	06/18/03	06/19/03	0.12	0.0030	mg/L	1:1
Cadmium	6010B	06/18/03	06/19/03	0.22	0.0050	mg/L	1:1
Chromium	6010B	06/18/03	06/19/03	0.45	0.010	mg/L	1:1
Cobalt	6010B	06/18/03	06/19/03	0.20	0.050	mg/L	1:1
Copper	6010B	06/18/03	06/19/03	0.52	0.020	mg/L	1:1
Lead	6010B	06/18/03	06/19/03	0.50	0.010	mg/L	1:1
Molybdenum	6010B	06/18/03	06/19/03	0.52	0.050	mg/L	1:1
Nickel	6010B	06/18/03	06/19/03	0.86	0.040	mg/L	1:1
Selenium	6010B	06/18/03	06/19/03	0.40	0.10	mg/L	1:1
Silver	6010B	06/18/03	06/19/03	0.049	0.010	mg/L	1:1
Thallium	6010B	06/18/03	06/19/03	0.40	0.10	mg/L	1:1
Vanadium	6010B	06/18/03	06/19/03	0.19	0.050	mg/L	1:1
Zinc	6010B	06/18/03	06/19/03	0.45	0.015	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Method Blank Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55658
Sample ID	MB for HBN 187830 [SGXV/1938]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHdiesel	8015M DHS	06/17/03	06/18/03	ND	50	ug/L	1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Lab Control Sample Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55659
Sample ID	LCS for HBN 187830 [SGXV/1938]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHdiesel	8015M DHS	06/17/03	06/18/03	470	50	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Lab Control Sample Duplicate Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55660
Sample ID	LCSD for HBN 187830 [SGXV/1938
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
TPHdiesel	8015M DHS	06/17/03	06/18/03	527	50	ug/L	1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Method Blank Report

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
Laboratory ID 55745
Sample ID MB for HBN 188382 [VMXV/2236]
Matrix Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Dichlorodifluoromethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloromethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Vinyl chloride	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromomethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloroethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Trichlorofluoromethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acrolein	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-Dichloroethene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acetone	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Methyl iodide	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Carbon disulfide	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dichloromethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Acrylonitrile	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
trans-1,2-Dichloroethene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-Dichloroethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Vinyl acetate	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
cis-1,2-Dichloroethene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Butanone (MEK)	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromochloromethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chloroform	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2,2-dichloropropane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,1-Trichloroethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1-dichloropropane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Carbon tetrachloride	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Benzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichloroethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dibromomethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromodichloromethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichloropropane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Trichloroethene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Chloroethylvinyl ether	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
cis-1,3-Dichloropropene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Methyl-2-pentanone	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Method Blank Report

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
Laboratory ID 55745
Sample ID MB for HBN 188382 [VMXV/2236]
Matrix Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
(continued)							
trans-1,3Dichloropropene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,2-Trichloroethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Toluene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dibromoethane (EDB)	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3-Dichloropropane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Hexanone	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Dibromochloromethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Tetrachloroethene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,1,2Tetrachloroethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Chlorobenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Ethylbenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
M+P-Xylene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromoform	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Styrene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
o-Xylene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,1,2,2Tetrachloroethane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,3-Trichloropropane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Isopropylbenzene (Cumene)	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Bromobenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
n-Propylbenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
2-Chlorotoluene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Chlorotoluene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3,5-Trimethylbenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
tert-Butylbenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,4-Trimethylbenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
sec-Butylbenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,3-Dichlorobenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,4-Dichlorobenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
4-Isopropyltoluene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2-Dichlorobenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
n-Butylbenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Method Blank Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55745
Sample ID	MB for HBN 188382 [VMXV/2236]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
(continued)							
1,2Dibromo3chloropropane	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,4-Trichlorobenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Naphthalene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
Hexachlorobutadiene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1
1,2,3-Trichlorobenzene	8260B	06/17/03	06/17/03	ND	2.0	ug/L	1:1

Surrogates	Result	Recovery	Limits
1,2-Dichloroethane-d4	46.6 ug/L	93 %	(65 - 135)
Toluene d8	49.5 ug/L	99 %	(65 - 118)
4-Bromofluorobenzene	53.7 ug/L	107 %	(65 - 121)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Lab Control Sample Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55746
Sample ID	LCS for HBN 188382 [VMXV/2236]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
1,1-Dichloroethene	8260B	06/17/03	06/17/03	49	2.0	ug/L	1:1
Benzene	8260B	06/17/03	06/17/03	48	2.0	ug/L	1:1
Trichloroethene	8260B	06/17/03	06/17/03	47	2.0	ug/L	1:1
Toluene	8260B	06/17/03	06/17/03	46	2.0	ug/L	1:1
Chlorobenzene	8260B	06/17/03	06/17/03	44	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Lab Control Sample Duplicate Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55747
Sample ID	LCSD for HBN 188382 [VMXV/2236
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
1,1-Dichloroethene	8260B	06/17/03	06/17/03	53	2.0	ug/L	1:1
Benzene	8260B	06/17/03	06/17/03	51	2.0	ug/L	1:1
Trichloroethene	8260B	06/17/03	06/17/03	50	2.0	ug/L	1:1
Toluene	8260B	06/17/03	06/17/03	49	2.0	ug/L	1:1
Chlorobenzene	8260B	06/17/03	06/17/03	47	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Matrix Spike Report

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
Laboratory ID 55748
Sample ID MS for HBN 188382 [VMXV/2236]
Matrix Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
1,1-Dichloroethene	8260B	06/17/03	06/17/03	47	2.0	ug/L	1:
Benzene	8260B	06/17/03	06/17/03	47	2.0	ug/L	1:1
Trichloroethene	8260B	06/17/03	06/17/03	46	2.0	ug/L	1:1
Toluene	8260B	06/17/03	06/17/03	45	2.0	ug/L	1:
Chlorobenzene	8260B	06/17/03	06/17/03	43	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Matrix Spike Duplicate Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55749
Sample ID	MSD for HBN 188382 [VMXV/2236]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
1,1-Dichloroethene	8260B	06/17/03	06/17/03	53	2.0	ug/L	1:1
Benzene	8260B	06/17/03	06/17/03	52	2.0	ug/L	1:1
Trichloroethene	8260B	06/17/03	06/17/03	51	2.0	ug/L	1:1
Toluene	8260B	06/17/03	06/17/03	49	2.0	ug/L	1:1
Chlorobenzene	8260B	06/17/03	06/17/03	48	2.0	ug/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Method Blank Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55929
Sample ID	MB for HBN 189075 [DIGV/1439]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Mercury	EPA 7470A	06/18/03	06/27/03	ND	0.00020	mg/L	1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Lab Control Sample Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55930
Sample ID	LCS for HBN 189075 [DIGV/1439]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Mercury	EPA 7470A	06/18/03	06/27/03	0.00099	0.00020	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Lab Control Sample Duplicate Report

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
Laboratory ID 55931
Sample ID LCSD for HBN 189075 [DIGV/1439
Matrix Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Mercury	EPA 7470A	06/18/03	06/27/03	0.00100	0.00020	mg/L	1:

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Duplicate Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55932
Sample ID	DUP for HBN 189075 [DIGV/1439]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Mercury	EPA 7470A	06/18/03	06/27/03	ND	0.00020	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

Matrix Spike Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55933
Sample ID	MS for HBN 189075 [DIGV/1439]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Mercury	EPA 7470A	06/18/03	06/27/03	0.00090	0.00020	mg/L	1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Matrix Spike Duplicate Report

Client ID	Shaw Environmental & Infrastructure
Workorder ID	Caltrans, Thomas Short 830714
Laboratory ID	55934
Sample ID	MSD for HBN 189075 [DIGV/1439]
Matrix	Water

Parameter	Method	Prep Date	Analyzed	Result	RL	Units	Dilution
Mercury	EPA 7470A	06/18/03	06/27/03	0.00100	0.00020	mg/L	1:1

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

QC SUMMARY

Client ID	Shaw Environmental & Infrastructure		
Workorder ID	Caltrans, Thomas Short 830714		
QC Batch	ICPP 4457	**Original**	15639001
Matrix	Water	**Sample**	Duplicate [55585]

Parameter	RPD	RPD Limits
Antimony	00	(35)
Arsenic	00	(35)
Barium	0.80	(35)
Beryllium	00	(35)
Cadmium	00	(35)
Chromium	00	(35)
Cobalt	00	(35)
Copper	00	(35)
Lead	00	(35)
Molybdenum	00	(35)
Nickel	00	(35)
Selenium	00	(35)
Silver	00	(35)
Thallium	00	(35)
Vanadium	00	(35)
Zinc	25	(35)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

QC SUMMARY

Client ID	Shaw Environmental & Infrastructure		
Workorder ID	Caltrans, Thomas Short 830714		
QC Batch	DIG 1444	**Original**	15635001
Matrix	Water	**Sample**	Duplicate [55932]

Parameter	RPD	RPD Limits
Mercury	0000	(35)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

QC SUMMARY

Client ID	Shaw Environmental & Infrastructure		
Workorder ID	Caltrans, Thomas Short 830714		
QC Batch	VGX 2597	**Original**	15639004
Matrix	Water	**Samples**	Matrix Spike [55580]
			Matrix Spike Duplicate [55581]

Parameter	Spike %Recovery	Spike Dup %Recovery	Recovery Limits	RPD	RPD Limits
TPHgas	83	77	(65-135)	7.5	(20 MAX)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

QC SUMMARY

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
QC Batch ICPP 4457
Matrix Water

Original Samples 15639001
Matrix Spike [55586]
Matrix Spike Duplicate [55587]

Parameter	Spike %Recovery	Spike Dup %Recovery	Recovery Limits	RPD	RPD Limits
Antimony	108	107	(25-125)	0.90	(35 MAX)
Arsenic	109	108	(75-125)	0.90	(35 MAX)
Barium	109	113	(75-125)	3.6	(35 MAX)
Beryllium	116	120	(75-125)	3.4	(35 MAX)
Cadmium	106	108	(75-125)	1.9	(35 MAX)
Chromium	89	90	(75-125)	1.1	(35 MAX)
Cobalt	102	102	(75-125)	00	(35 MAX)
Copper	104	104	(75-125)	00	(35 MAX)
Lead	101	101	(75-125)	00	(35 MAX)
Molybdenum	104	104	(75-125)	00	(35 MAX)
Nickel	86	86	(75-125)	00	(35 MAX)
Selenium	80	80	(75-125)	00	(35 MAX)
Silver	89	97	(25-125)	8.6	(35 MAX)
Thallium	79	81	(50-125)	2.5	(35 MAX)
Vanadium	96	96	(75-125)	00	(35 MAX)
Zinc	78	79	(75-125)	1.3	(35 MAX)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

QC SUMMARY

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
QC Batch VMX 2281
Matrix Water

Original Samples 15639004
Matrix Spike [55748]
Matrix Spike Duplicate [55749]

Parameter	Spike %Recovery	Spike Dup %Recovery	Recovery Limits	RPD	RPD Limits
1,1-Dichloroethene	94	106	(61-145)	12	(20 MAX)
Benzene	94	104	(76-127)	10	(20 MAX)
Trichloroethene	92	102	(71-135)	10	(20 MAX)
Toluene	90	98	(76-130)	8.5	(20 MAX)
Chlorobenzene	86	96	(75-130)	11	(20 MAX)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

QC SUMMARY

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
QC Batch DIG 1444
Matrix Water

Original Samples 15635001
Matrix Spike [55933]
Matrix Spike Duplicate [55934]

Parameter	Spike %Recovery	Spike Dup %Recovery	Recovery Limits	RPD	RPD Limits
Mercury	90.0	100	(75-125)	10.5	(35 MAX)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

QC SUMMARY

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
QC Batch VGX 2597
Matrix Water

Samples Lab Control Sample [55578]
Lab Control Sample Duplicate [55579]

Parameter	Check %Recovery	Check Dup %Recovery	Recovery Limits	RPD	RPD Limits
TPHgas	91	89	(65-135)	2.2	(20 MAX)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

QC SUMMARY

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
QC Batch ICPP 4457
Matrix Water

Samples Lab Control Sample [55583]
Lab Control Sample Duplicate [55584]

Parameter	Check %Recovery	Check Dup %Recovery	Recovery Limits	RPD	RPD Limits
Antimony	111	106	(70-120)	4.6	(20 MAX)
Arsenic	101	99	(80-120)	2.0	(20 MAX)
Barium	113	111	(80-120)	1.8	(20 MAX)
Beryllium	110	107	(80-120)	2.8	(20 MAX)
Cadmium	102	96	(80-120)	6.1	(20 MAX)
Chromium	92	87	(80-120)	5.6	(20 MAX)
Cobalt	111	106	(80-120)	4.6	(20 MAX)
Copper	112	106	(80-120)	5.5	(20 MAX)
Lead	110	102	(80-120)	7.5	(20 MAX)
Molybdenum	108	101	(80-120)	6.7	(20 MAX)
Nickel	93	90	(80-120)	3.3	(20 MAX)
Selenium	81	76	(80-120)	6.4	(20 MAX)
Thallium	98	92	(80-120)	6.3	(20 MAX)
Vanadium	107	101	(80-120)	5.8	(20 MAX)
Zinc	86	78	(80-120)	9.8	(20 MAX)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

QC SUMMARY

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
QC Batch SGX 1974
Matrix Water

Samples Lab Control Sample [55659]
Lab Control Sample Duplicate [55660]

Parameter	Check %Recovery	Check Dup %Recovery	Recovery Limits	RPD	RPD Limits
TPHdiesel	94	105	(65-135)	11	(20 MAX)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

QC SUMMARY

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
QC Batch VMX 2281
Matrix Water

Samples Lab Control Sample [55746]
Lab Control Sample Duplicate [55747]

Parameter	Check %Recovery	Check Dup %Recovery	Recovery Limits	RPD	RPD Limits
1,1-Dichloroethene	98	106	(65-145)	7.8	(20 MAX)
Benzene	96	102	(71-127)	6.1	(20 MAX)
Trichloroethene	94	100	(75-135)	6.2	(20 MAX)
Toluene	92	98	(76-135)	6.3	(20 MAX)
Chlorobenzene	88	94	(76-135)	6.6	(20 MAX)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

Sparger Technology, Inc.
Environmental Laboratories

Analytical Laboratory Division
Mobile Laboratory Division
Scientific Division

QC SUMMARY

Client ID Shaw Environmental & Infrastructure
Workorder ID Caltrans, Thomas Short 830714
QC Batch DIG 1444
Matrix Water

Samples Lab Control Sample [55930]
Lab Control Sample Duplicate [55931]

Parameter	Check %Recovery	Check Dup %Recovery	Recovery Limits	RPD	RPD Limits
Mercury	99.0	104	(80-120)	4.93	(20 MAX)

3050 Fite Circle, Suite 112 • Sacramento, California 95827 • (916) 362-8947 • FAX (916) 362-0947

WORKORDER DATA SHEET
Jul 01, 2003 15:42

ID 15639	WO # 15639	Caltrans, Thomas Short 830714		STATUS CO
DESC A5D/R1-2 JH				
CREATED	06/17/03 08:29	PO 189348	QA	TYPE CM	ACODE REPORT_WO
CLIENT	Shaw Shaw Environmental & Infrastructure			
PROFILE	10213 CaltransStan Caltrans Standard			

WORKORDER SAMPLES

1 **15639001** 15639001 MW-4

RP	TYPE SAMPLE			MATRIX	Water
COLLECTED	06/16/03 00:00	COMPLETED	06/27/03 15:47	DUE	06/30/03 17:00

Analyses		Turndays
8015M_G W	TPH Gas WATR	10
8015M_D W	TPHdiesel Water	10
CAM17WATR	6010B ELEMENTS CAM17 WATER	10
8260 WATR	8260B GCMS VOLATILES WATR	10

2 **15639002** 15639002 MW-5

RP	TYPE SAMPLE			MATRIX	Water
COLLECTED	06/16/03 00:00	COMPLETED	06/27/03 15:48	DUE	06/30/03 17:00

Analyses		Turndays
8015M_G W	TPH Gas WATR	10
8015M_D W	TPHdiesel Water	10
CAM17WATR	6010B ELEMENTS CAM17 WATER	10
8260 WATR	8260B GCMS VOLATILES WATR	10

3 **15639003** 15639003 MW-6

RP	TYPE SAMPLE			MATRIX	Water
COLLECTED	06/16/03 00:00	COMPLETED	06/27/03 15:48	DUE	06/30/03 17:00

Analyses		Turndays
8015M_G W	TPH Gas WATR	10
8015M_D W	TPHdiesel Water	10
CAM17WATR	6010B ELEMENTS CAM17 WATER	10
8260 WATR	8260B GCMS VOLATILES WATR	10

4 **15639004** 15639004 Trip Blank

RP	TYPE SAMPLE			MATRIX	Water
COLLECTED	06/16/03 00:00	COMPLETED	06/23/03 13:48	DUE	06/30/03 17:00

Analyses		Turndays
8015M_G W	TPH Gas WATR	10
8260 WATR	8260B GCMS VOLATILES WATR	10

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

SHAW Environmental & Infrastructure, Inc.
1326 North Market Boulevard, Sacramento, CA 95834

A5D - R1-2

Purchase Order: **# 189348**
Lab: **Sparger Technology, Sacto**

Project Name: **Caltrans, Former Thomas Short Property**
Project Number: **830714 / 01010000**
Project Manager: **Martha Adams**
Company: **SHAW Environmental & Infrastructure, Inc.**
Address: **1326 North Market Boulevard**
Sacramento, CA 95834
Dir. Ph: **(916) 565-4183** FAX: **(916) 565-4356**

Sampler's Signature: Paul Weinhardt

Sample I.D.	Date	Time	LAB I.D.	Sample Matrix	Number of Containers	VOCs by 8260B; TPH as gas by 8015M	TPH as Diesel by 8015M	CAM Metals by 6010/7470 LAB TO FILTER/PRES.	REMARKS
					1	1	6	5	Container Types
						HCl	NP	NP	Preservations
MW-4	6-16	1012		Water	6	4	1	1	
MW-5	↓	1001		Water	6	4	1	1	
MW-6		954		Water	6	4	1	1	
Trip Blank	↓			Water	2	2			

Analysis Requested

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Paul Weinhardt	Signature	Signature	Signature: [illegible]
Printed Name: PAUL WEINHARDT	Printed Name	Printed Name	Printed Name: KIEN PHAN
Firm: SHAW ETI	Firm	Firm	Firm
Date/Time: 6-16-03	Date/Time	Date/Time	Date/Time: 6/16/03 15:30

TURNAROUND REQUIREMENTS
24 hr ____ 48 hr ____ 5 day
X Standard (~10-15 working days)
Provide Verbal Preliminary Results
Provide FAX Preliminary Results
Requested Report Date: ____

REPORT REQUIREMENTS
X I. Routine Report
II. Report (includes DUP, MS MSD, as required, may be charged as samples)
III. Data Validation Report (includes All Raw Data)
RWQCB (MDLs/PQLs/TRACE#)

RELINQUISHED BY	RECEIVED BY
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

Special Instructions/Comments:

CAM 17 Metals to be filtered / preserved in the lab.

Sparger Technology
3050 Fite Circle, St. 112
Sacto, Ca 95827
916-362-8947 / Fx 362-0947
Contact: Will Fleming

Container Types Key:

40 ml VOA:	1
250 ml LPE:	2
500 ml LPE:	3
1 liter HDPE:	4
500 ml glass:	5
1 liter glass:	6
2x6 s/s ring:	7
glass jar:	8