

September 16, 1996

LF 3018.95-021

Mr. Dale Klettke  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway  
Alameda, California 94501

**Subject:** Quarterly Groundwater Monitoring Report for the Period from April 1 to June 30, 1996, 5050 Coliseum Way and 750-50th Avenue, Oakland, California

Dear Mr. Klettke:

This quarterly report is submitted by Levine-Fricke on behalf of Volvo GM Heavy Truck Corporation for the subject site. During this quarterly period, depth-to-water measurements were collected in 21 monitoring wells and groundwater samples were collected from 9 wells.

If you have any questions regarding this report, please call me (510-652-4500) or Mr. Robert Whelen of Volvo GM (910-279-2544).

Sincerely,



Kathleen A. Isaacson, R.G.  
Principal Hydrogeologist

Enclosure

cc: Sumadhu Arigala, Regional Water Quality Control Board  
Bob Whelen, Volvo GM Heavy Truck Corp.  
Martha Boyd, Volvo GM Heavy Truck Corp.

**Quarterly Groundwater Monitoring Report for the  
Period from April 1 to June 30, 1996  
5050 Coliseum Way and 750-50th Avenue  
Oakland, California**

**September 16, 1996  
3018.95-021**

Prepared for  
Volvo GM Heavy Truck Corporation  
7900 National Service Road  
P.O. Box 26115  
Greensboro, North Carolina 27402-6115

 **LEVINE • FRICKE**  
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

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**CERTIFICATION**

All hydrogeologic and geologic information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by a Levine-Fricke California Registered Geologist.

  
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Kathleen A. Isaacson  
Principal Hydrogeologist  
California Registered Geologist (5106)

9/16/96

\_\_\_\_\_  
Date

## 1.0 INTRODUCTION

This report presents results of quarterly groundwater monitoring activities conducted during the period from April 1 through June 30, 1996, for the properties located at 5050 Coliseum Way and 750-50th Avenue, Oakland, California (collectively referenced as "the Site"; Figure 1). This report was prepared on behalf of Volvo GM Heavy Truck Corporation ("Volvo GM") in accordance with our work plan dated January 6, 1993, and submitted to the Alameda County Health Care Services Agency (ACHCSA). This report includes graphic illustrations of potentiometric head (water-level) data and presents historical summaries of groundwater elevation and groundwater quality data collected at the Site.

## 2.0 WATER-LEVEL MEASUREMENTS AND GROUNDWATER FLOW DIRECTION

The top of each well casing at the Site has been surveyed relative to mean sea level by a state-licensed land surveyor. Water-level measurements were collected from 21 wells at the Site on May 2, 1996. A historical summary of depth-to-water measurements and groundwater elevations for the Site is presented in Table 1. Groundwater elevation contours for May 2, 1996, are presented in Figure 2.

Groundwater elevations calculated from depth-to-water measurements collected in May 1996 were similar to the previous quarter, with slight increases or decreases measured for some wells.

Groundwater elevation data for May 2, 1996, indicate that the groundwater flow direction was generally toward the west, which is consistent with historical groundwater flow data. Groundwater elevation data indicate an approximate horizontal hydraulic gradient of 0.008 foot per foot (ft/ft; as calculated between wells LF-5 and LF-7).

Approximately 0.10 foot of free product was measured in well LF-13 using a product-thickness bailer. This measurement is consistent with previous measurements for the Site (Table 1).

## 3.0 GROUNDWATER QUALITY

Groundwater samples were collected from nine monitoring wells (LF-1, LF-2, LF-3, LF-5, LF-8, LF-11, LF-12, LF-16, and MW-3) on May 2 and 3, 1996, as shown in Figure 3. Well LF-13, located on the southeastern property boundary, contained free product and therefore was not sampled.

Well LF-14 was not accessible due to Site facility operations and was not sampled.

Groundwater samples were submitted to the laboratory for metals analysis using EPA Method 200 series. Samples collected from LF-1, LF-3, and LF-8, were also submitted for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8020, for analysis of total petroleum hydrocarbons as gasoline (TPHg) by EPA Method 3550, and for TPH as diesel (TPHd) and as oil (TPHo) by EPA Method 3510.

Analytical results for groundwater samples collected during this recent round of sampling were generally consistent with results reported historically for the Site. Groundwater quality results are discussed in Section 3.2. Analytical results for metals analysis are presented in Table 2 and Figure 3. Analytical results for TPHg, BTEX, TPHd, and TPHo are presented on Tables 3 and 4. Laboratory certificates and a chain-of-custody form are included in Appendix A.

### **3.1 Sampling Procedures**

Before groundwater samples were collected, approximately 3 to 5 well casing volumes of water were removed from each well using a Teflon bailer. Specific conductance, pH, and temperature of the purged water were measured during this purging process to aid in evaluating overall groundwater quality. These parameters were recorded in the field on water-quality sampling forms. Copies of these forms are included in Appendix B. Groundwater samples were collected after these parameters stabilized to within 15 percent of the previous measurement.

Groundwater samples were collected using the same Teflon bailer used to purge the well. Groundwater samples for metals analysis were filtered in the field and preserved with nitric acid. Samples were placed in an ice-chilled cooler immediately after collection and transported to American Environmental Network, Inc. (AEN), of Pleasant Hill, California, a state-certified laboratory, for analysis.

For quality assurance/quality control measures, a duplicate sample was collected for well LF-2 (LF-102) and submitted to AEN for metals analysis.

The pH values for groundwater samples collected from each monitoring well were measured and recorded in the field during sampling activities.

### **3.2 Groundwater Quality Results**

#### **3.2.1 Metals**

Analytical results for Title 22 metals in groundwater samples collected during this recent round of sampling were generally consistent with results reported historically for those wells. These results, shown on Figure 3, are as follows.

Silver, barium, molybdenum, selenium, thallium, and vanadium were generally reported below detection limits, or at concentrations below 1.0 parts per million (ppm).

Zinc was detected in all nine wells at concentrations ranging from 0.02 ppm in LF-8 to 34,000 ppm in LF-11. Zinc was detected in downgradient well LF-12 at a concentration of 2,800 ppm. The highest concentration of lead (0.95 ppm) was detected in the sample from LF-1. Lead was detected in downgradient well LF-12 at a concentration of 0.008 ppm.

The highest concentration of cadmium (96 ppm) was detected in the sample collected from LF-11, and the highest concentration of copper (16 ppm) was detected in the sample collected from LF-16. The highest concentrations of cobalt (6.0 ppm) and nickel (21 ppm) were detected in the sample collected from LF-11. Of the downgradient wells that were sampled, LF-12 contained the highest concentrations of the metals cadmium (3.0 ppm), cobalt (2.0 ppm), and copper (1.2 ppm). LF-5 contained the highest level of nickel (12 ppm) among the downgradient wells.

Arsenic was detected in samples collected from three wells, with the highest concentration, 3.3 ppm, reported for LF-3.

### **3.2.2 Petroleum Hydrocarbons**

Analytical results for petroleum hydrocarbons in the samples collected from LF-1, LF-3, and LF-8 were similar to previous sampling events (Tables 3 and 4). TPHg was reported in LF-8 at a concentration of 0.18 ppm. Benzene was reported in LF-8 at a concentration of 0.0008 ppm. TPHg and benzene were not detected above the detection limits in samples LF-1 and LF-3. TPHd was detected in LF-1, LF-3, and LF-8, at concentrations of 0.30 ppm, 0.61 ppm, and 2.3 ppm, respectively. TPHo was not detected in the samples analyzed for TPHo above the detection limit.

### **3.2.3 Former Waste-Oil Tank**

The absence of TPHg and BTEX compounds, and the relatively low concentration of TPHd detected in LF-1, located approximately 50 feet downgradient from the former waste-oil underground storage tank (UST), indicate that shallow groundwater quality has not been significantly impacted by a possible release of petroleum hydrocarbons from the former UST. Well LF-1 as well as downgradient well LF-5 will be sampled one additional time to confirm these results. If future analytical results are consistent with those for LF-1, then closure for the waste-oil UST will be requested.

### **3.2.4 Volatile Organic Compounds**

No samples were analyzed for volatile organic compounds (VOCs) this quarter.

### **3.2.5 Semivolatile Organic Compounds**

No samples were analyzed for semivolatile organic compounds (SVOCs) this quarter.

### 3.2.6 Measurements of pH

Measurements of groundwater pH are shown in Figure 3. Recent monitoring results indicate that pH values for shallow groundwater beneath the Site were generally consistent with historical values and indicate that pH is variable across the Site. The lowest pH (3.56) was measured in the sample from well LF-11. A pH value above 6.0 was measured for samples in four of the nine wells sampled.

### 3.2.7 Quality Assurance/Quality Control

Analytical results for the duplicate sample collected from well LF-2 (LF-102) generally showed similar metals concentrations when compared to the primary sample collected from that well, as shown on Figure 3.



**Table 1**  
**Historical Summary of Groundwater Elevation Data**  
**5050 Coliseum Way and 750-50th Avenue**  
**Oakland, California**

Well Number	Top of PVC Casing Elevation (feet msl)	Date Measured	Depth to Water (feet msl)	Depth to Product (feet msl)	Product Thickness (ft)	Groundwater Elevation (feet msl)
LF-1	7.56	07-Nov-91	6.79			0.77
		26-Oct-92	4.69			2.87
		04-Mar-93	3.94			3.62
		14-Apr-93	3.41			4.15
		24-May-93	3.07			4.49
		14-Jun-93	3.41			4.15
		30-Jul-93	3.46			4.10
		31-Aug-93	3.67			3.89
		27-Sep-93	3.76			3.80
		25-Oct-93	3.74			3.82
		02-Nov-93	4.26			3.30
		08-Dec-93	4.42			3.14
		28-Jan-94	4.06			3.50
		15-Feb-94	3.94			3.62
		24-May-94	3.81			3.75
		21-Sep-94	3.75			3.81
		19-Dec-94	3.51			4.05
		13-Mar-95	2.33			5.23
		07-Jun-95	2.49			5.07
		05-Sep-95	2.78			4.78
		18-Dec-95	3.21			4.35
28-Feb-96	2.51			5.05		
02-May-96	2.35			5.21		
LF-2	9.84	07-Nov-91	7.26			2.58
		26-Oct-92	6.28			3.56
		04-Mar-93	5.14			4.70
		14-Apr-93	4.95			4.89
		24-May-93	5.09			4.75
		14-Jun-93	5.21			4.63
		30-Jul-93	5.38			4.46
		31-Aug-93	5.57			4.27
		27-Sep-93	5.70			4.14
		25-Oct-93	5.80			4.04
		02-Nov-93	5.86			3.98
		08-Dec-93	6.21			3.63
		28-Jan-94	6.12			3.72
		15-Feb-94	6.07			3.77
		24-May-94	5.65			4.19
		21-Sep-94	6.00			3.84
		19-Dec-94	5.91			3.93
		13-Mar-95	4.30			5.54
		07-Jun-95	4.36			5.48
		05-Sep-95	5.12			4.72
		18-Dec-95	5.56			4.28
28-Feb-96	4.51			5.33		
02-May-96	4.41			5.43		
LF-3	10.98	07-Nov-91	7.55			3.43
		26-Oct-92	7.05			3.93
		04-Mar-93	5.83			5.15

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Well Number	Top of PVC Casing Elevation (feet msl)	Date Measured	Depth to Water (feet msl)	Depth to Product (feet msl)	Product Thickness (ft)	Groundwater Elevation (feet msl)
		14-Apr-93	5.48			5.50
		24-May-93	5.61			5.37
		14-Jun-93	5.75			5.23
		30-Jul-93	5.96			5.02
		31-Aug-93	6.18			4.80
		27-Sep-93	6.33			4.65
		25-Oct-93	6.46			4.52
		02-Nov-93	6.62			4.36
		08-Dec-93	6.71			4.27
		28-Jan-94	6.72			4.26
		15-Feb-94	6.50			4.48
		24-May-94	6.15			4.83
		21-Sep-94	6.56			4.42
		19-Dec-94	6.06			4.92
		13-Mar-95	4.85			6.13
		07-Jun-95	4.58			6.40
		05-Sep-95	5.38			5.60
		18-Dec-95	5.75			5.23
		28-Feb-96	4.80			6.18
		02-May-96	4.64			6.34
LF-4	10.36	07-Nov-91	11.63			-1.27
		26-Oct-92	7.31			3.05
		04-Mar-93	5.58			4.78
		14-Apr-93	5.21			5.15
		24-May-93	5.48			4.88
		14-Jun-93	5.63			4.73
		30-Jul-93	5.92			4.44
		31-Aug-93	6.16			4.20
		27-Sep-93	6.36			4.00
		25-Oct-93	6.54			3.82
		02-Nov-93	7.00			3.36
		08-Dec-93	6.96			3.40
		28-Jan-94	7.04			3.32
		15-Feb-94	6.84			3.52
		24-May-94	5.99			4.37
		21-Sep-94	6.62			3.74
		19-Dec-94	6.75			3.61
		13-Mar-95	5.67			4.69
		07-Jun-95	4.48			5.88
		05-Sep-95	5.38			4.98
		18-Dec-95	5.96			4.40
		28-Feb-96	4.31			6.05
		02-May-96	4.40			5.96
LF-5	8.03	07-Nov-91	7.34			0.69
		26-Oct-92	7.05			0.98
		04-Mar-93	6.05			1.98
		14-Apr-93	6.25			1.78
		24-May-93	6.61			1.42
		14-Jun-93	6.97			1.06

**Table 1**  
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**5050 Coliseum Way and 750-50th Avenue**  
**Oakland, California**

Well Number	Top of PVC Casing Elevation (feet msl)	Date Measured	Depth to Water (feet msl)	Depth to Product (feet msl)	Product Thickness (ft)	Groundwater Elevation (feet msl)
		30-Jul-93	6.72			1.31
		31-Aug-93	6.84			1.19
		27-Sep-93	7.10			0.93
		25-Oct-93	7.11			0.92
		02-Nov-93	7.04			0.99
		08-Dec-93	7.27			0.76
		28-Jan-94	6.82			1.21
		15-Feb-94	6.85			1.18
		24-May-94	6.76			1.27
		21-Sep-94	7.05			0.98
		19-Dec-94	6.48			1.55
		13-Mar-95	5.25			2.78
		07-Jun-95	5.98			2.05
		05-Sep-95	6.42			1.61
		18-Dec-95	5.87			2.16
		28-Feb-96	4.58			3.45
		02-May-96	5.72			2.31
LF-6	11.59	07-Nov-91	8.59			3.00
		26-Oct-92	8.82			2.77
		04-Mar-93	5.79			5.80
		14-Apr-93	5.41			6.18
		24-May-93	6.05			5.54
		14-Jun-93	6.29			5.30
		30-Jul-93	6.83			4.76
		31-Aug-93	7.27			4.32
		27-Sep-93	7.61			3.98
		25-Oct-93	7.79			3.80
		02-Nov-93	8.07			3.52
		08-Dec-93	7.34			4.25
		28-Jan-94	6.37			5.22
		15-Feb-94	5.98			5.61
		24-May-94	6.14			5.45
		21-Sep-94	7.39			4.20
		19-Dec-94	6.12			5.47
		13-Mar-95	4.98			6.61
		07-Jun-95	5.03			6.56
		05-Sep-95	6.23			5.36
		18-Dec-95	5.71			5.88
		28-Feb-96	4.75			6.84
		02-May-96	5.08			6.51
LF-7	10.65	07-Nov-91	8.54			2.11
		26-Oct-92	7.98			2.67
		04-Mar-93	4.92			5.73
		14-Apr-93	4.80			5.85
		24-May-93	5.03			5.62
		14-Jun-93	5.18			5.47
		30-Jul-93	5.51			5.14
		31-Aug-93	5.82			4.83
		27-Sep-93	6.14			4.51

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Well Number	Top of PVC Casing Elevation (feet msl)	Date Measured	Depth to Water (feet msl)	Depth to Product (feet msl)	Product Thickness (ft)	Groundwater Elevation (feet msl)
		25-Oct-93	6.39			4.26
		02-Nov-93	6.60			4.05
		08-Dec-93	6.74			3.91
		28-Jan-94	6.03			4.62
		15-Feb-94	5.59			5.06
		24-May-94	5.46			5.19
		21-Sep-94	6.40			4.25
		19-Dec-94	5.59			5.06
		13-Mar-95	4.16			6.49
		07-Jun-95	4.07			6.58
		05-Sep-95	4.81			5.84
		18-Dec-95	4.99			5.66
		28-Feb-96	4.22			6.43
		02-May-96	4.09			6.56
LF-8	10.91	02-Nov-93	6.18			4.73
		08-Dec-93	6.29			4.62
		28-Jan-94	6.38			4.53
		15-Feb-94	6.37			4.54
		24-May-94	6.15			4.76
		21-Sep-94	6.33			4.58
		19-Dec-94	6.31			4.60
		13-Mar-95	4.48			6.43
		07-Jun-95	4.46			6.45
		05-Sep-95	5.08			5.83
		18-Dec-95	5.63			5.28
		28-Feb-96	4.57			6.34
		02-May-96	4.41			6.50
LF-9	11.70	02-Nov-93	6.76			4.94
		08-Dec-93	6.91			4.79
		28-Jan-94	6.88			4.82
		15-Feb-94	6.80			4.90
		24-May-94	6.80			4.90
		21-Sep-94	6.98			4.72
		19-Dec-94	6.34			5.36
		13-Mar-95	5.12			6.58
		07-Jun-95	5.31			6.39
		05-Sep-95	5.90			5.80
		18-Dec-95	6.80			4.90
		28-Feb-96	5.23			6.47
		02-May-96	5.16			6.54
LF-10	9.43	02-Nov-93	8.14			1.29
		08-Dec-93	7.82			1.61
		28-Jan-94	NM			NM
		15-Feb-94	7.47			1.96
		24-May-94	7.11			2.32
		21-Sep-94	7.90			1.53
		19-Dec-94	7.21			2.22
		13-Mar-95	5.68			3.75

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		07-Jun-95	5.92			3.51
		05-Sep-95	6.61			2.82
		18-Dec-95	6.92			2.51
		28-Feb-96	5.62			3.81
		02-May-96	6.00			3.43
LF-11	9.07	02-Nov-93	11.68			-2.61
		08-Dec-93	5.35			3.72
		28-Jan-94	5.27			3.80
		15-Feb-94	5.04			4.03
		24-May-94	4.20			4.87
		21-Sep-94	4.70			4.37
		19-Dec-94	4.72			4.35
		13-Mar-95	3.27			5.80
		07-Jun-95	3.75			5.32
		05-Sep-95	3.70			5.37
		18-Dec-95	4.20			4.87
		28-Feb-96	2.88			6.19
		02-May-96	2.84			6.23
LF-12	8.70	02-Nov-93	7.87			0.83
		08-Dec-93	7.90			0.80
		28-Jan-94	7.46			1.24
		15-Feb-94	7.66			1.04
		21-Sep-94	7.80			0.90
		19-Dec-94	7.32			1.38
		13-Mar-95	6.00			2.70
		07-Jun-95	7.40			1.30
		05-Sep-95	7.45			1.25
		18-Dec-95	6.71			1.99
		28-Feb-96	6.28			2.42
		02-May-96	7.09			1.61
LF-13	9.75	08-Dec-93	5.94			3.81 (1)
		28-Jan-94	4.94			4.81 (1)
		15-Feb-94	4.84	4.83	0.01	4.92 (1)
		24-May-94	4.81	4.75	0.06	4.99 (1)
		21-Sep-94	6.32	5.17	1.15 (2)	4.41 (1)
		19-Dec-94	4.67	4.57	0.10	5.17 (1)
		13-Mar-95	3.22	3.12	0.10	6.62 (1)
		07-Jun-95	3.32	3.22	0.10	6.52 (1)
		05-Sep-95	3.90	3.80	0.10	5.94 (1)
		18-Dec-95	4.13	4.03	0.10	5.71 (1)
		28-Feb-96	3.48	3.38	0.10	6.36 (1)
		02-May-96	3.44	3.34	0.10	6.40 (1)
LF-14	11.72	08-Dec-93	7.96			3.76
		28-Jan-94	8.02			3.70
		15-Feb-94	7.85			3.87
		24-May-94	7.68			4.04
		21-Sep-94	7.69			4.03

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Well Number	Top of PVC Casing Elevation (feet msl)	Date Measured	Depth to Water (feet msl)	Depth to Product (feet msl)	Product Thickness (ft)	Groundwater Elevation (feet msl)
		19-Dec-94	7.71			4.01
		13-Mar-95	6.68			5.04
		07-Jun-95	6.03			5.69
		05-Sep-95	6.51			5.21
		18-Dec-95	7.39			4.33
		28-Feb-96	5.95			5.77
		02-May-96	NM			NM
LF-15	11.62	08-Dec-93	7.91			3.71
		28-Jan-94	7.74			3.88
		15-Feb-94	7.58			4.04
		24-May-94	8.07			3.55
		21-Sep-94	8.58			3.04
		19-Dec-94	NM			NM
		13-Mar-95	6.32			5.30
		07-Jun-95	6.44			5.18
		05-Sep-95	6.08			5.54
		18-Dec-95	11.01			0.61 (3)
		28-Feb-96	5.92			5.70
		02-May-96	8.70			2.92 (3)
LF-16	11.56	08-Dec-93	8.35			3.21
		28-Jan-94	8.40			3.16
		15-Feb-94	8.21			3.35
		24-May-94	8.01			3.55
		21-Sep-94	7.64			3.92
		19-Dec-94	8.60			2.96
		13-Mar-95	6.22			5.34
		07-Jun-95	6.88			4.68
		05-Sep-95	7.37			4.19
		18-Dec-95	9.21			2.35 (3)
		28-Feb-96	6.26			5.30
		02-May-96	6.24			5.32
LF-17	9.71	08-Dec-93	6.72			2.99
		28-Jan-94	5.86			3.85
		15-Feb-94	5.87			3.84
		24-May-94	6.00			3.71
		21-Sep-94	6.88			2.83
		19-Dec-94	5.45			4.26
		13-Mar-95	4.68			5.03
		07-Jun-95	6.52			3.19
		05-Sep-95	7.02			2.69
		18-Dec-95	5.11			4.60
		28-Feb-96	4.63			5.08
		02-May-96	5.90			3.81
LF-F1	8.82	08-Dec-93	4.08			4.74
		28-Jan-94	4.03			4.79
		15-Feb-94	3.90			4.92
		24-May-94	3.60			5.22

**Table 1**  
**Historical Summary of Groundwater Elevation Data**  
**5050 Coliseum Way and 750-50th Avenue**  
**Oakland, California**

Well Number	Top of PVC Casing Elevation (feet msl)	Date Measured	Depth to Water (feet msl)	Depth to Product (feet msl)	Product Thickness (ft)	Groundwater Elevation (feet msl)
		21-Sep-94	4.05			4.77
		19-Dec-94	3.45			5.37
		13-Mar-95	2.22			6.60
		07-Jun-95	2.28			6.54
		05-Sep-95	2.92			5.90
		18-Dec-95	3.18			5.64
		28-Feb-96	2.31			6.51
		02-May-96	2.27			6.55
MW-1	10.21	07-Nov-91	6.29			4.24
		26-Oct-92	6.38			2.63
		04-Mar-93	3.57			6.64
		14-Apr-93	3.57			6.64
		24-May-93	4.59			5.62
		14-Jun-93	4.86			5.35
		30-Jul-93	5.72			4.49
		31-Aug-93	6.38			3.83
		27-Sep-93	6.85			3.36
		25-Oct-93	7.03			3.18
		02-Nov-93	7.30			2.91
		08-Dec-93	6.51			3.70
		28-Jan-94	5.00			5.21
		15-Feb-94	4.46			5.75
		24-May-94	4.65			5.56
		21-Sep-94	6.35			3.86
		19-Dec-94	3.70			6.51
		13-Mar-95	2.71			7.50
		07-Jun-95	4.02			6.19
		05-Sep-95	5.67			4.54
		18-Dec-95	4.47			5.74
		28-Feb-96	2.53			7.68
		02-May-96	3.72			6.49
MW-2	8.86	07-Nov-91	5.93			2.93
		26-Oct-92	5.41			3.45
		04-Mar-93	4.26			4.60
		14-Apr-93	3.83			5.03
		24-May-93	3.78			5.08
		14-Jun-93	3.89			4.97
		30-Jul-93	4.10			4.76
		31-Aug-93	4.37			4.49
		27-Sep-93	4.72			4.14
		25-Oct-93	4.81			4.05
		02-Nov-93	4.96			3.90
		08-Dec-93	5.13			3.73
		28-Jan-94	5.18			3.68
		15-Feb-94	5.02			3.84
		24-May-94	4.43			4.43
		21-Sep-94	5.82			3.04
		12-Dec-94	4.75			4.11
		13-Mar-95	3.28			5.58

**Table 1**  
**Historical Summary of Groundwater Elevation Data**  
**5050 Coliseum Way and 750-50th Avenue**  
**Oakland, California**

Well Number	Top of PVC Casing Elevation (feet msl)	Date Measured	Depth to Water (feet msl)	Depth to Product (feet msl)	Product Thickness (ft)	Groundwater Elevation (feet msl)
		07-Jun-95	3.12			5.74
		05-Sep-95	3.90			4.96
		18-Dec-95	4.55			4.31
		28-Feb-96	3.12			5.74
		02-May-96	3.03			5.83
MW-3	9.01	07-Nov-91	6.94			2.07
		26-Oct-92	7.29			1.72
		04-Mar-93	5.07			3.94
		14-Apr-93	5.21			3.80
		24-May-93	5.95			3.06
		14-Jun-93	6.23			2.78
		27-Sep-93	6.46			2.55
		25-Oct-93	6.47			2.54
		02-Nov-93	6.62			2.39
		08-Dec-93	6.23			2.78
		28-Jan-94	5.58			3.43
		15-Feb-94	5.70			3.31
		24-May-94	5.59			3.42
		21-Sep-94	6.46			2.55
		19-Dec-94	5.46			3.55
		13-Mar-95	4.37			4.64
		07-Jun-95	5.61			3.40
		05-Sep-95	6.38			2.63
		18-Dec-95	4.91			4.10
		28-Feb-96	4.37			4.64
		02-May-96	5.23			3.78
MW-4	10.75	07-Nov-91	10.26			0.49
		26-Oct-92	9.04			1.71
		04-Mar-93	5.77			4.98
		14-Apr-93	4.71			6.04
		24-May-93	5.60			5.15
		14-Jun-93	5.94			4.81
		30-Jul-93	6.72			4.03
		31-Aug-93	7.25			3.50
		27-Sep-93	7.66			3.09
		25-Oct-93	7.79			2.96
		02-Nov-93	7.97			2.78
		08-Dec-93	7.18			3.57
		28-Jan-94	5.50			5.25
		15-Feb-94	5.17			5.58
		24-May-94	5.46			5.29
		21-Sep-94	7.52			3.23
		19-Dec-94	4.42			6.33
		13-Mar-95	3.48			7.27
		07-Jun-95	4.93			5.82
		05-Sep-95	6.34			4.41
		18-Dec-95	4.61			6.14
		28-Feb-96	3.36			7.39
		02-May-96	4.53			6.22



**Table 1**  
**Historical Summary of Groundwater Elevation Data**  
**5050 Coliseum Way and 750-50th Avenue**  
**Oakland, California**

Well Number	Top of PVC Casing Elevation (feet msl)	Date Measured	Depth to Water (feet msl)	Depth to Product (feet msl)	Product Thickness (ft)	Groundwater Elevation (feet msl)
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Data entered by PCA. Data proofed by JCK

**NOTES**

All elevations are measured relative to the mean-sea-level (msl) datum.

The top of casing elevations were measured from the north side of each PVC casing.

(1) Groundwater elevation for well LF-13 is corrected for the presence of free product as indicated in note (2). Product thickness measurement is approximate due to the viscous nature of the product. Groundwater elevation corrected for the presence of free product using the following equation:  $G = W + [(PT * D) - DW]$  where G is the groundwater elevation, W is the well elevation, PT is the product thickness, D is the product density (g/ml), and DW is the depth-to-water. For purposes of this calculation, D = 0.85 will be used.

(2) In general, product thickness measurements for well LF-13 are approximate due to the viscous nature of the product. Specifically, the measurement reported for September 21, 1994, was measured using an electronic oil/water interface probe only, which likely resulted in an incorrect measurement.

(3) Groundwater elevations appear to be anomalous.







Table 2  
**Metals Detected in Groundwater Samples**  
**5050 Coliseum Way and 750-50th Avenue**  
**Oakland, California**  
*(Concentrations reported in parts per million [ppm])*

Sample ID	Sample Date	Silver	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Chromium	Copper	Mercury	Molybdenum	Nickel	Lead	Antimony	Selenium	Thallium	Vanadium	Zinc
LF-12	6-Sep-95	<0.05	<0.005	<0.1	0.02	3.2	2.2	<0.1	1.3	<0.0002	<0.1	6.4	0.01	<0.2	<0.01	<0.5	<0.05	2900
LF-12	18-Dec-95	<0.05	<0.002	<0.1	<0.03	3.8	2.1	<0.1	1.1	<0.0002	<0.1	6.6	<0.005	<0.2	0.055	<0.5	<0.05	3000
LF-12	29-Feb-96	<0.05	<0.002	<0.1	0.02	3	2	<0.1	1.1	0.0002	<0.1	6.1	0.007	<0.2	0.048	<0.5	<0.05	2700
LF-12	2-May-96	<0.05	<0.002	<0.1	<0.02	3	2	<0.1	1.2	<0.0002	<0.1	5.7	0.008	<0.2	0.039	<0.5	<0.05	2800
LF-13	6-Dec-93	<0.005	3.3	0.24	<0.002	<0.005	0.007	<0.01	<0.01	<0.0003	0.04	0.03	<0.04	<0.02	<0.2	<0.1	0.061	0.03
LF-14	8-Dec-93	<0.005	0.005	<0.05	<0.002	0.12	0.67	<0.01	0.68	0.0016	<0.01	1.6	<0.04	<0.02	<0.02	<0.1	<0.005	230
LF-14	17-Feb-94	<0.005	<0.002	<0.05	0.002	0.16	0.96	<0.01	2.1	<0.0002	<0.01	2.4	<0.04	<0.02	<0.004	<0.1	<0.005	300
LF-14	25-May-94	<0.005	0.004	<0.05	0.002	0.14	1	<0.01	3.5	<0.0002	<0.01	2.4	0.027	<0.03	<0.004	0.1	<0.005	340
LF-14	21-Sep-94	<0.005	<0.002	<0.05	<0.002	0.065	0.59	<0.01	1.1	<0.0002	<0.01	1.4	0.022	<0.02	<0.004	<0.1	<0.005	240
LF-14	19-Dec-94	<0.005	0.004	<0.05	0.004	0.12	0.96	<0.01	2.9	<0.0002	<0.01	2.3	0.03	<0.02	<0.004	<0.1	0.042	370
LF-14	15-Mar-95	<0.005	<0.002	0.01	0.004	0.12	0.86	<0.01	3.4	<0.0002	<0.01	2.3	0.017	<0.02	<0.004	<0.05	<0.005	340
LF-14	8-Jun-95	<0.005	0.005	0.01	0.002	0.14	0.95	<0.01	1.7	<0.0002	<0.01	2.4	0.037	<0.02	<0.004	0.07	0.008	290
LF-14	8-Sep-95	<0.005	<0.002	0.01	0.002	0.086	0.78	<0.01	2.8	<0.0002	<0.01	1.9	0.017	<0.02	<0.004	0.10	0.015	310
LF-14	18-Dec-95	<0.005	0.018	0.01	<0.003	0.13	1.1	<0.01	1.4	<0.0002	<0.01	2.6	0.003	<0.02	<0.004	<0.05	0.011	290
LF-14	1-Mar-96	<0.005	0.008	0.01	0.004	0.12	0.9	<0.01	3.5	<0.0002	<0.01	2.3	0.025	<0.02	<0.004	0.09	0.007	340
LF-15	6-Dec-93	0.032	<0.05	0.28	0.017	1.7	8.1	<0.01	0.14	<0.0003	<0.01	23	1.1	<0.02	<0.1	0.9	<0.005	640
LF-15	18-Feb-94	<0.05	0.006	<0.5	<0.02	1.7	7.4	<0.1	<0.1	<0.0002	<0.1	20	0.6	<0.2	<0.04	<1	<0.05	660
LF-15	21-Sep-94	0.02	<0.01	<0.05	0.027	2	11	<0.01	<0.01	<0.0002	<0.01	29	0.21	<0.02	<0.02	1.1	<0.005	620
LF-15	13-Mar-95	<0.005	<0.002	0.01	0.019	1.5	8.8	<0.01	<0.01	<0.0002	<0.01	24	0.33	<0.02	<0.02	0.66	<0.005	550
LF-15	8-Sep-95	<0.05	<0.01	<0.1	<0.02	2.1	14	<0.1	<0.1	<0.0002	<0.1	37	0.07	<0.2	<0.02	0.9	<0.05	570
LF-15	29-Feb-96	0.014	0.003	0.01	0.031	1.8	12	<0.01	0.03	<0.0002	<0.01	32	0.078	<0.02	<0.02	1.4	<0.005	590
LF-16	7-Dec-93	<0.05	<0.05	<0.5	<0.02	10	5.9	<0.1	0.4	<0.003	<0.1	16	<0.4	<0.2	<0.1	<1	<0.05	3400
LF-16	17-Feb-94	<0.05	<0.002	<0.5	0.04	15	8.3	<0.1	21	<0.0002	<0.1	24	<0.4	<0.2	<0.04	<1	<0.05	5200
LF-16	25-May-94	<0.05	<0.002	<0.5	0.02	12	7	<0.1	25	<0.0002	<0.1	20	<0.01	<0.3	<0.004	<1	<0.05	4100
LF-16	21-Sep-94	<0.05	<0.005	<0.05	0.03	11	6.2	<0.1	22	<0.0002	<0.1	17	<0.05	<0.2	<0.01	<1	<0.05	3700
LF-16	19-Dec-94	<0.05	<0.005	<0.5	0.03	10	6	<0.1	22	<0.0002	<0.1	17	<0.2	<0.2	<0.01	<1	0.08	3300
LF-16	15-Mar-95	<0.05	<0.02	<0.1	0.03	8.2	4.9	<0.1	21	<0.0002	<0.1	16	<0.05	<0.2	<0.04	<0.5	<0.05	3300
LF-16	8-Jun-95	<0.05	0.015	<0.1	0.03	8.2	5.1	<0.1	19	<0.0002	<0.1	15	<0.05	<0.2	<0.01	<0.5	0.06	2900
LF-16	8-Sep-95	<0.05	0.006	0.3	0.02	8.4	5.6	<0.1	18	<0.0002	<0.1	15	<0.02	<0.2	<0.01	0.7	<0.05	2800
LF-16	19-Dec-95	<0.05	<0.005	<0.1	0.02	7.5	4.6	<0.1	18	<0.0002	<0.1	13	<0.005	<0.2	<0.01	<0.5	0.07	2700
LF-16	29-Feb-96	<0.05	0.01	<0.1	0.03	7.8	5.1	<0.1	16	<0.0002	<0.1	14	<0.005	<0.2	0.004	<0.5	0.05	2700
LF-16	2-May-96	<0.05	<0.005	<0.1	<0.02	6.8	4.9	<0.1	16	<0.0002	<0.1	13	<0.005	<0.2	<0.01	<0.5	<0.05	2300
LF-17	8-Dec-93	<0.005	0.004	0.11	<0.002	<0.005	0.011	<0.01	<0.01	<0.0003	<0.01	0.04	<0.04	<0.02	<0.004	<0.1	0.008	0.1
LF-17	15-Feb-94	<0.005	<0.002	0.05	<0.002	<0.005	0.009	<0.01	<0.01	<0.0002	<0.01	0.03	<0.04	<0.02	<0.004	<0.1	0.007	0.05
LF-17	22-Sep-94	<0.001	<0.002	0.06	<0.0005	<0.001	0.005	<0.002	<0.002	<0.0002	0.003	0.015	<0.005	0.005	<0.004	<0.02	0.006	0.035
LF-17	14-Mar-95	<0.001	<0.002	0.065	<0.0005	<0.001	0.006	<0.002	<0.002	<0.0002	<0.002	0.022	<0.002	<0.004	<0.004	0.01	0.003	0.056
LF-17	6-Sep-95	<0.001	<0.002	0.057	<0.0005	<0.001	0.004	<0.002	<0.002	<0.0002	0.002	0.017	<0.002	<0.004	<0.004	0.01	0.004	<0.01
LF-17	28-Feb-96	<0.001	0.002	0.087	<0.0005	0.005	0.007	0.01	<0.002	<0.0002	<0.002	0.023	<0.002	<0.004	<0.004	<0.01	0.003	0.092
LF-F1	8-Dec-93	<0.005	0.012	0.07	<0.002	0.049	0.055	<0.01	<0.01	<0.0003	<0.01	0.07	<0.04	<0.02	<0.04	<0.1	0.008	13
LF-F1	18-Feb-94	<0.005	0.004	<0.05	<0.002	0.065	0.062	<0.01	<0.01	<0.0002	0.02	0.07	<0.04	<0.02	<0.004	<0.1	<0.005	20
LF-F1	23-Sep-94	0.002	0.21	0.02	<0.0005	<0.005	0.2	<0.002	<0.002	<0.0002	0.006	0.13	<0.005	<0.02	<0.004	<0.1	<0.005	39
LF-F1	15-Mar-95	0.001	0.092	0.021	<0.0005	0.02	0.1	<0.002	<0.002	<0.0002	0.009	0.05	<0.002	<0.02	<0.004	<0.05	0.001	14
LF-F1	7-Sep-95	<0.001	0.09	0.020	<0.0005	0.038	0.11	<0.002	<0.002	<0.0002	0.011	0.076	<0.002	<0.004	<0.02	<0.01	<0.001	17
LF-F1	29-Feb-96	<0.001	0.023	0.026	<0.0005	0.26	0.054	<0.002	<0.002	<0.0002	0.01	0.061	<0.005	<0.004	<0.004	<0.01	<0.001	37
MW-1	5-Nov-91	<0.002	0.073	0.085	<0.001	<0.005	0.008	<0.01	<0.005	<0.0003	0.02	0.032	<0.005	<0.02	<0.004	<0.1	<0.005	2.7
MW-1	27-Oct-92	<0.005	0.084	0.09	<0.002	0.031	0.052	<0.01	<0.01	<0.0003	<0.01	0.3	<0.04	<0.02	<0.004	<0.1	0.007	42
MW-1	5-Mar-93	<0.005	0.024	0.05	<0.002	0.008	0.015	<0.01	<0.01	<0.0003	<0.01	0.11	<0.04	<0.02	<0.004	<0.1	0.006	16



Table 2

**Metals Detected in Groundwater Samples**  
**5050 Coliseum Way and 750-50th Avenue**  
**Oakland, California**  
*(Concentrations reported in parts per million [ppm])*

Sample ID	Sample Date	Silver	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Chromium	Copper	Mercury	Molybdenum	Nickel	Lead	Antimony	Selenium	Thallium	Vanadium	Zinc
LF-3-BB	25-May-94	<0.001	<0.002	<0.01	<0.0005	<0.001	<0.001	<0.002	<0.002	<0.0002	<0.002	<0.002	<0.003	<0.005	<0.004	<0.02	<0.001	0.015
LF-15-BB	8-Sep-95	<0.001	<0.002	<0.002	<0.0005	<0.001	<0.001	<0.002	<0.002	<0.0002	<0.002	<0.002	<0.002	0.005	<0.004	<0.01	<0.001	0.02
LF-11FB	2-May-96	<0.001	<0.002	<0.002	<0.0005	<0.001	<0.001	<0.002	<0.002	<0.0002	<0.002	<0.002	<0.002	<0.004	<0.004	<0.01	<0.001	<0.01

Data entered by PCA. Data proofed by JLC. QA/QC by SXS.

**NOTES**

- (1) Labeling errors in the field or laboratory may account for the anomalous data reported for wells MW-2 and MW-3. Analyses performed by American Environmental Network, Pleasant Hill, California.  
 FB/BB - Field Blank

**Table 3**  
**Gasoline Hydrocarbons and BTEX Detected in Groundwater Samples**  
**5050 Coliseum Way and 750-50th Avenue**  
**Oakland, California**  
*(concentrations reported in parts per million [ppm])*

Sample ID	Sample Date	TPHg	Benzene	Ethylbenzene	Toluene	Xylenes
LF-1	04-Nov-91	<0.05	<0.005	<0.005	<0.005	<0.01
LF-1	02-May-96	<0.05	<0.0005	<0.0005	<0.0005	<0.002
LF-2	04-Nov-91	<0.05	<0.005	<0.005	<0.005	<0.01
LF-3	04-Nov-91	<0.05	<0.005	<0.005	<0.005	<0.01
LF-3	25-May-94	<0.05	NA	NA	NA	NA
LF-103 (dup)	25-May-94	<0.05	NA	NA	NA	NA
LF-3	23-Sep-94	<0.05	NA	NA	NA	NA
LF-103 (dup)	23-Sep-94	<0.05	NA	NA	NA	NA
LF-3	20-Dec-94	<0.05	<0.0005	<0.0005	<0.0005	<0.002
LF-103 (dup)	20-Dec-94	<0.05	<0.0005	<0.0005	<0.0005	<0.002
LF-3	15-Mar-95	<0.05	<0.0005	<0.0005	<0.0005	<0.002
LF-3	07-Sep-95	<0.05	<0.0005	<0.0005	<0.0005	<0.002
LF-3	01-Mar-96	<0.05	<0.0005	<0.0005	<0.0005	<0.002
LF-3	02-May-96	<0.05	<0.0005	<0.0005	<0.0005	<0.002
LF-4	04-Nov-91	0.59	<0.005	<0.005	<0.005	<0.01
LF-5	04-Nov-91	NA	<0.005	<0.005	<0.005	<0.01
LF-6	04-Nov-91	NA	<0.005	<0.005	<0.005	<0.01
LF-7	04-Nov-91	NA	<0.005	<0.005	<0.005	<0.01
LF-8	28-Oct-93	<1.0	NA	NA	NA	NA
LF-8	24-May-94	0.7	NA	NA	NA	NA
LF-8	23-Sep-94	0.4	NA	NA	NA	NA
LF-8	20-Dec-94	0.4	0.003	0.0065	0.0009	0.004
LF-8	15-Mar-95	0.3	0.002	0.003	0.0006	0.003
LF-8	09-Jun-95	0.3	0.001	0.003	0.0006	0.003
LF-8	07-Sep-95	0.4	0.001	0.003	0.0006	0.003
LF-8	18-Dec-95	0.3	0.001	0.003	0.0006	0.003
LF-8	29-Feb-96	0.3	0.0026	0.0031	0.0019	0.0032
LF-8	02-May-96	0.18	0.0008	0.0034	<0.0005	<0.002
LF-9	01-Nov-93	<0.1	NA	NA	NA	NA
LF-109 (dup)	01-Nov-93	<0.1	NA	NA	NA	NA
LF-9	23-Sep-94	NA	<0.005	<0.005	<0.005	<0.01
LF-11	28-Oct-93	<0.1	NA	NA	NA	NA
LF-13	06-Dec-93	0.05	<0.0005	<0.0005	<0.0005	<0.002
LF-113 (dup)	06-Dec-93	0.06	<0.0005	<0.0005	<0.0005	<0.002
LF-14	21-Sep-94	1.4	NA	NA	NA	NA
LF-14	19-Dec-94	1	0.001	<0.0005	0.002	0.012
LF-14	15-Mar-95	1.2	0.001	<0.0005	0.0006	0.015
LF-14	08-Sep-95	1.4	0.0009	<0.0005	0.0007	0.002
LF-14	01-Mar-96	0.8	0.0007	<0.0005	<0.0005	0.0084
MW-2	05-Nov-91	NA	<0.0003	<0.0003	<0.0003	<0.001
LF-9-FB	01-Nov-93	<0.1	NA	NA	NA	NA
LF-4-BB	04-Nov-91	<0.05	<0.005	<0.005	<0.005	<0.01
LF-3-BB	25-May-94	<0.05	NA	NA	NA	NA
Trip Blank	26-Sep-94	<0.05	NA	NA	NA	NA
Trip Blank	18-Mar-95	<0.05	<0.0005	<0.0005	<0.0005	<0.002

Data entered by PCA Data proofed by JCK QA/QC by SXS

**NOTES**

Samples analyzed by American Environmental Network, Pleasant Hill, California.

FB/BB - Field Blank

NA - not analyzed

TPHg - Total petroleum hydrocarbons as gasoline (EPA Method 5030)

Benzene, ethylbenzene, toluene, and xylenes (BTEX) analyzed using modified EPA Method 8015 or by EPA Method 8240.



**Table 4**  
**Petroleum Hydrocarbons Detected in Groundwater Samples**  
**5050 Coliseum Way and 750-50th Avenue**  
**Oakland, California**

*(concentrations reported in parts per million [ppm])*

Sample ID	Sample Date	TPHd	TPHo	TOG	Hydrocarbons
LF-1	4-Nov-91	0.09	NA	<0.5	<0.5
LF-1	2-May-96	0.3	<0.2	NA	NA
LF-2	4-Nov-91	0.3	NA	NA	NA
LF-3	4-Nov-91	0.2	NA	NA	NA
LF-3	25-May-94	0.3	0.4	NA	NA
LF-103 (dup)	25-May-94	0.3	0.4	NA	NA
LF-3	23-Sep-94	1.2	<0.2	NA	NA
LF-103 (dup)	23-Sep-94	1	<0.2	NA	NA
LF-3	20-Dec-94	0.89	0.2	NA	NA
LF-103 (dup)	20-Dec-94	0.88	0.2	NA	NA
LF-3	15-Mar-95	0.8	<0.2	NA	NA
LF-3	7-Sep-95	0.62	0.4	NA	NA
LF-3	1-Mar-96	0.65	0.2	NA	NA
LF-3	2-May-96	0.61	<0.2	NA	NA
LF-4	4-Nov-91	0.1	NA	NA	NA
LF-8	28-Oct-93	9.8	NA	2	1
LF-8	24-May-94	4.5	0.6	NA	NA
LF-8	23-Sep-94	6.7	<0.2	NA	NA
LF-8	20-Dec-94	5.6	0.4	NA	NA
LF-8	15-Mar-95	4.1	0.2	NA	NA
LF-8	9-Jun-95	3.8	<0.2	NA	NA
LF-8	7-Sep-95	4.7	0.3	NA	NA
LF-8	18-Dec-95	3.9	0.4	NA	NA
LF-8	29-Feb-96	3.9	0.3	NA	NA
LF-8	2-May-96	2.3	<0.2	NA	NA
LF-9	1-Nov-93	0.2	NA	<0.5	<0.5
LF-109 (dup)	1-Nov-93	0.2	NA	<0.5	<0.5
LF-11	28-Oct-93	<0.05	NA	<0.5	<0.5
LF-13 (*)	6-Dec-93	0.5	0.4	1	<0.5
LF-113 (dup)	6-Dec-93	0.6	0.4	NA	NA
LF-14	21-Sep-94	<0.3	<0.2	NA	NA
LF-14	19-Dec-94	0.65	<0.2	NA	NA
LF-14	15-Mar-95	0.3	<0.2	NA	NA
LF-14	8-Sep-95	<0.05	<0.2	NA	NA
LF-14	1-Mar-96	0.14	<0.2	NA	NA
MW-2	4-Nov-91	<0.05	NA	NA	NA
LF-3-BB	25-May-94	<0.05	<0.2	NA	NA

Data entered by PCA. Data proofed by JCK. QA/QC by SXS.

**NOTES**

Analyses performed by American Environmental Network, Pleasant Hill, CA

BB - Field Blank

NA - not analyzed

TPHd - Total petroleum hydrocarbons as diesel (EPA Method 3510)

TPHo - Total petroleum hydrocarbons as oil (EPA Method 3510)

TOG - Total oil and grease (Standard Method 5520bf)

Hydrocarbons - Total hydrocarbons (Standard Method 5520f)

(\*) - Free product measured in February 1994.

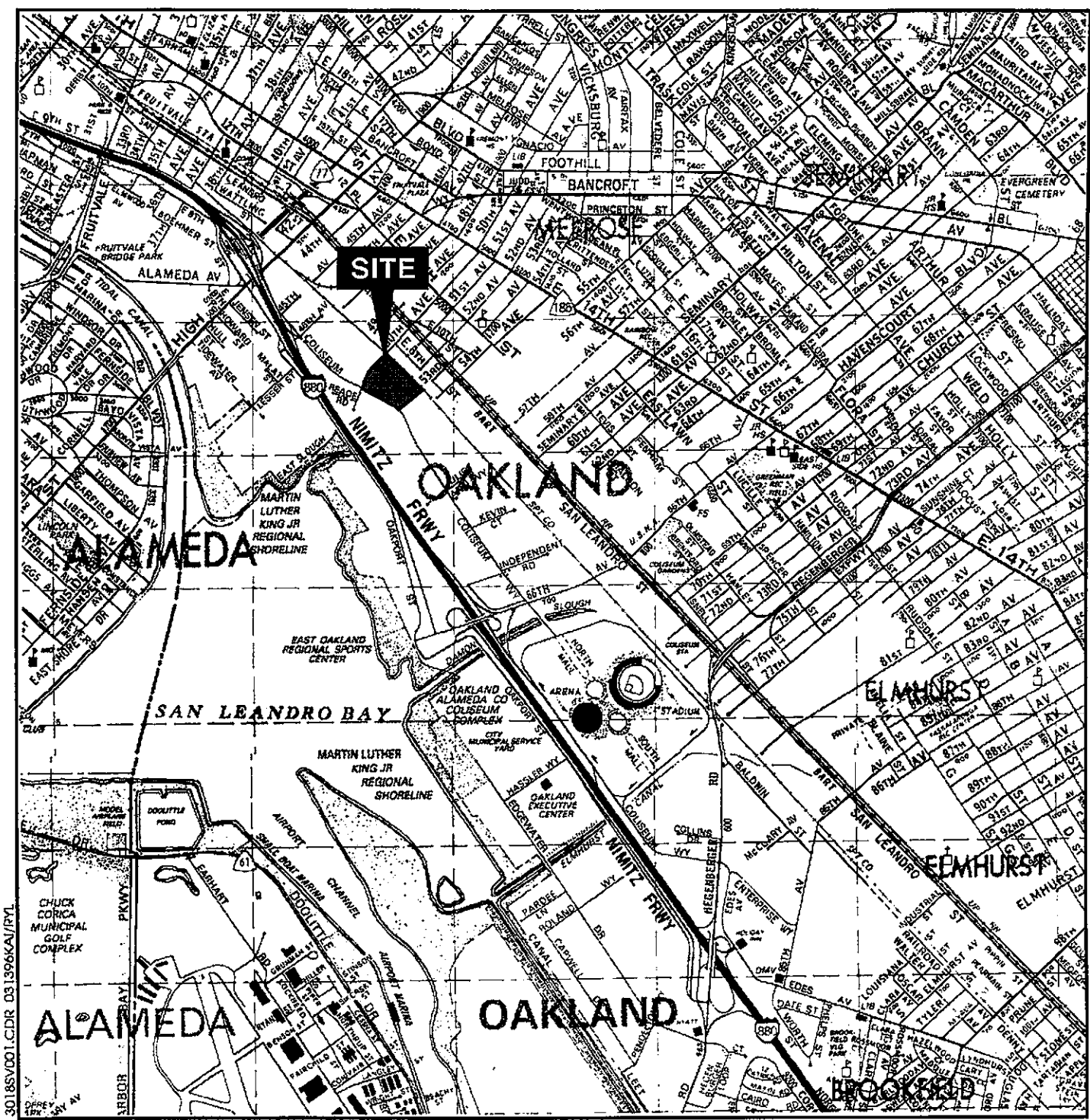


Figure 1 : SITE LOCATION, 5050 COLISEUM WAY AND 750-50TH AVENUE, OAKLAND, CA

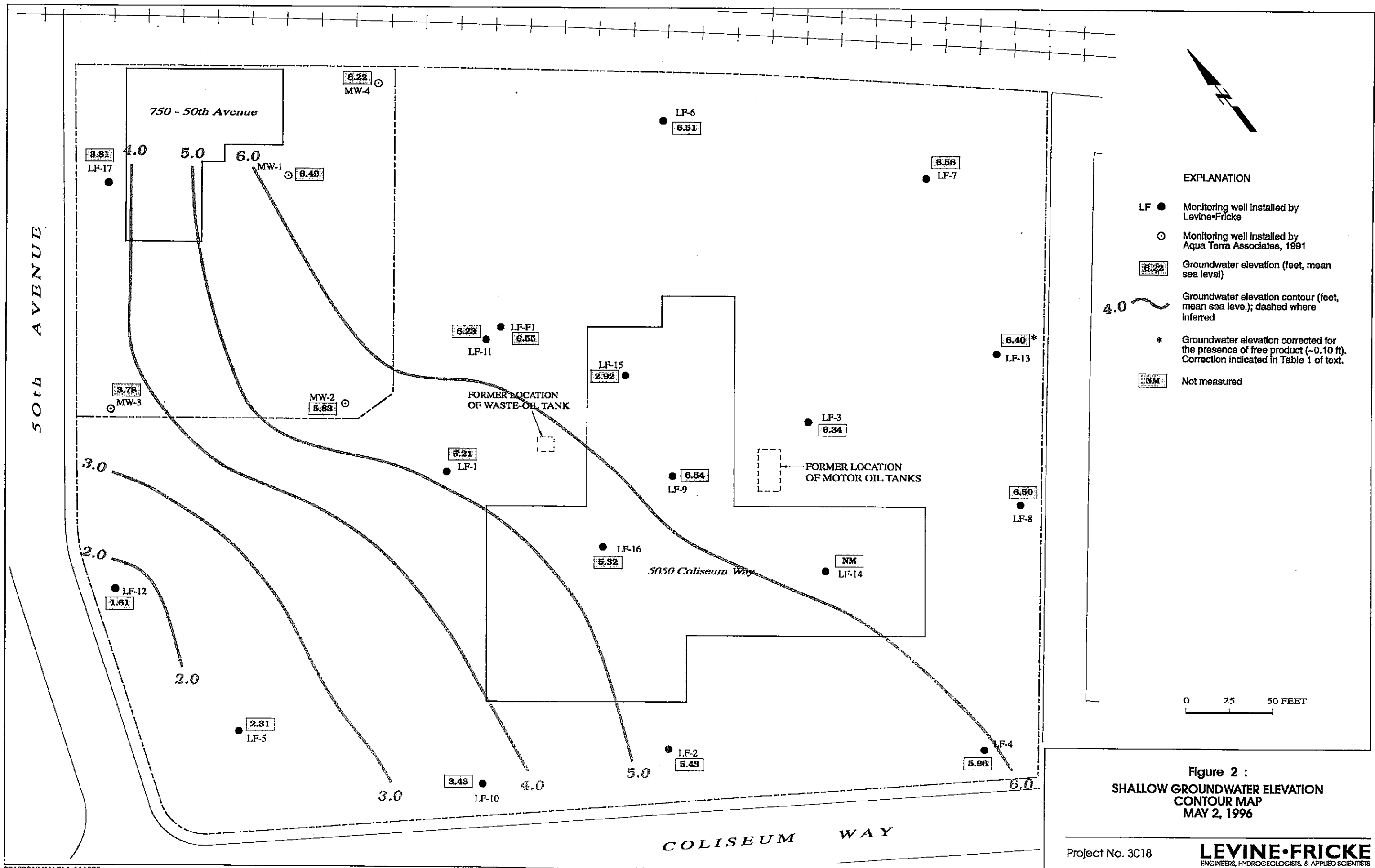


Figure 2 :  
 SHALLOW GROUNDWATER ELEVATION  
 CONTOUR MAP  
 MAY 2, 1996

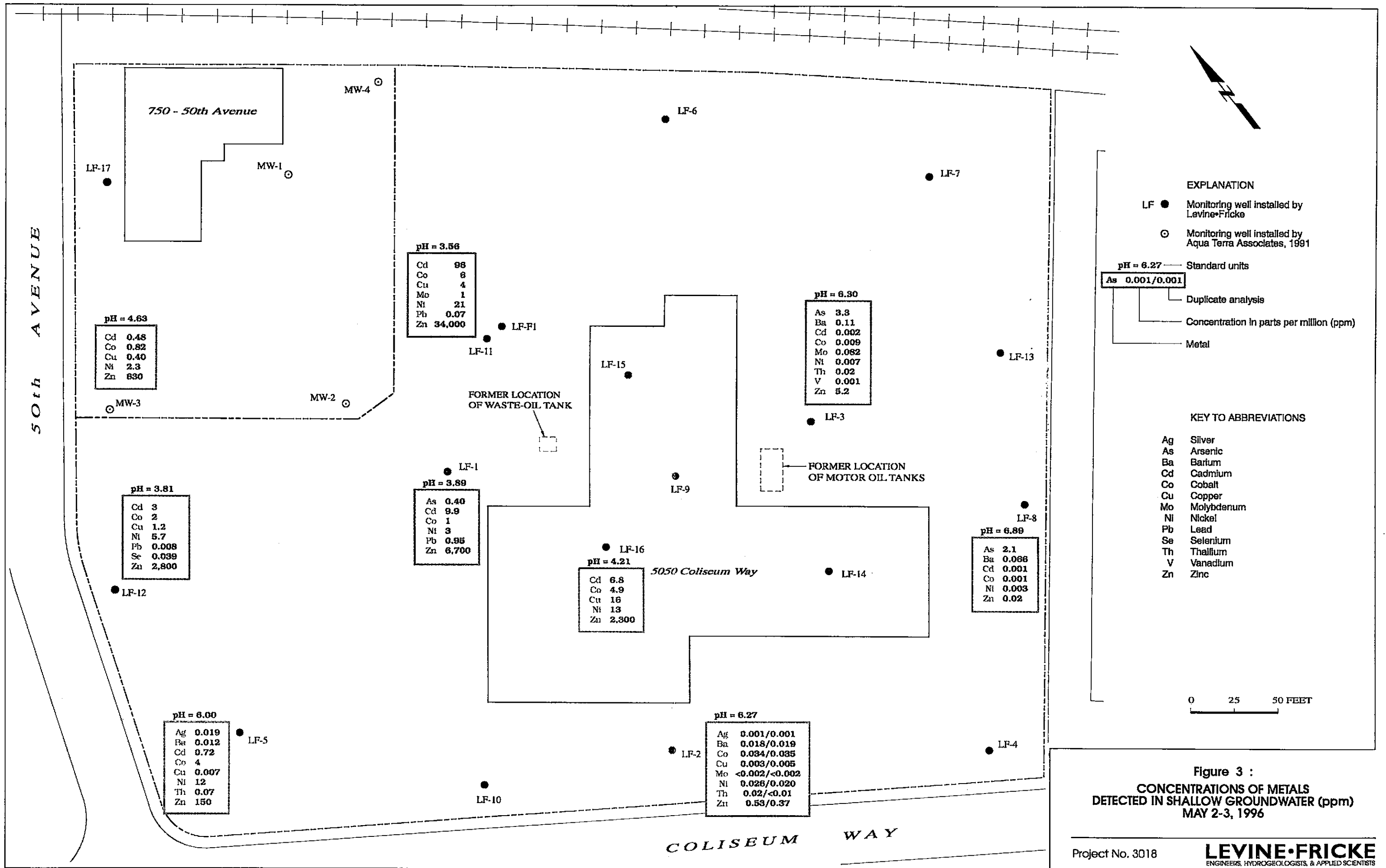


Figure 3 :  
 CONCENTRATIONS OF METALS  
 DETECTED IN SHALLOW GROUNDWATER (ppm)  
 MAY 2-3, 1996

**APPENDIX A**

**LABORATORY CERTIFICATES  
AND CHAIN-OF-CUSTODY FORM**

# American Environmental Network

## Certificate of Analysis

DOHS Certification: 1172

AIHA Accreditation: 11134

PAGE 1

LEVINE-FRICKE  
1900 POWELL ST. 12TH FL.  
EMERYVILLE, CA 94608

REPORT DATE: 05/21/96

DATE(S) SAMPLED: 05/02/96

DATE RECEIVED: 05/03/96

ATTN: **JENIFER BEATTY**  
CLIENT PROJ. ID: 3018.95.21  
CLIENT PROJ. NAME: VOLVO/GM  
C.O.C. NUMBER: 15075

AEN WORK ORDER: 9605052

### PROJECT SUMMARY:

On May 3, 1996, this laboratory received 11 water sample(s).

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

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

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

  
Larry Klein  
Laboratory Director

## LEVINE - FRICKE

SAMPLE ID: MW-3  
 AEN LAB NO: 9605052-01  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
CCR 17 Metals (Low Level)					
Ag	Silver	EPA 200.7	ND	0.05 mg/L	05/15/96
As	Arsenic	EPA 206.2	ND	0.002 mg/L	05/14/96
Ba	Barium	EPA 200.7	ND	0.1 mg/L	05/15/96
Be	Beryllium	EPA 200.7	ND	0.02 mg/L	05/15/96
Cd	Cadmium	EPA 200.7	0.48 *	0.05 mg/L	05/17/96
Co	Cobalt	EPA 200.7	0.82 *	0.05 mg/L	05/17/96
Cr	Chromium	EPA 200.7	ND	0.1 mg/L	05/17/96
Cu	Copper	EPA 200.7	0.4 *	0.1 mg/L	05/17/96
Hg	Mercury	EPA 245.1	ND	0.0002 mg/L	05/09/96
Mo	Molybdenum	EPA 200.7	ND	0.1 mg/L	05/17/96
Ni	Nickel	EPA 200.7	2.3 *	0.1 mg/L	05/17/96
Pb	Lead	EPA 239.2	ND	0.002 mg/L	05/15/96
Sb	Antimony	EPA 200.7	ND	0.2 mg/L	05/15/96
Se	Selenium	EPA 270.2	ND	0.004 mg/L	05/14/96
Tl	Thallium	EPA 200.7	ND	0.5 mg/L	05/17/96
V	Vanadium	EPA 200.7	ND	0.05 mg/L	05/15/96
Zn	Zinc	EPA 200.7	630 *	0.1 mg/L	05/17/96

Reporting limits elevated on metals by EPA 200.7 due to matrix interference.

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

## LEVINE - FRICKE

SAMPLE ID: LF-12  
 AEN LAB NO: 9605052-02  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
CCR 17 Metals (Low Level)					
Ag Silver	EPA 200.7	ND	0.05	mg/L	05/15/96
As Arsenic	EPA 206.2	ND	0.002	mg/L	05/14/96
Ba Barium	EPA 200.7	ND	0.1	mg/L	05/15/96
Be Beryllium	EPA 200.7	ND	0.02	mg/L	05/15/96
Cd Cadmium	EPA 200.7	3.0 *	0.05	mg/L	05/17/96
Co Cobalt	EPA 200.7	2.0 *	0.05	mg/L	05/15/96
Cr Chromium	EPA 200.7	ND	0.1	mg/L	05/15/96
Cu Copper	EPA 200.7	1.2 *	0.1	mg/L	05/15/96
Hg Mercury	EPA 245.1	ND	0.0002	mg/L	05/09/96
Mo Molybdenum	EPA 200.7	ND	0.1	mg/L	05/17/96
Ni Nickel	EPA 200.7	5.7 *	0.1	mg/L	05/15/96
Pb Lead	EPA 239.2	0.008 *	0.002	mg/L	05/15/96
Sb Antimony	EPA 200.7	ND	0.2	mg/L	05/15/96
Se Selenium	EPA 270.2	0.039 *	0.004	mg/L	05/14/96
Tl Thallium	EPA 200.7	ND	0.5	mg/L	05/17/96
V Vanadium	EPA 200.7	ND	0.05	mg/L	05/15/96
Zn Zinc	EPA 200.7	2,800 *	0.1	mg/L	05/17/96

Reporting limits elevated due to matrix interference.

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit



LEVINE-FRICKE

SAMPLE ID: LF-5  
 AEN LAB NO: 9605052-03  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
CCR 17 Metals (Low Level)					
Ag Silver	EPA 200.7	0.019 *	0.005	mg/L	05/17/96
As Arsenic	EPA 206.2	ND	0.005	mg/L	05/14/96
Ba Barium	EPA 200.7	0.012 *	0.002	mg/L	05/15/96
Be Beryllium	EPA 200.7	ND	0.0005	mg/L	05/15/96
Cd Cadmium	EPA 200.7	0.72 *	0.005	mg/L	05/17/96
Co Cobalt	EPA 200.7	4.0 *	0.005	mg/L	05/17/96
Cr Chromium	EPA 200.7	ND	0.002	mg/L	05/15/96
Cu Copper	EPA 200.7	0.007 *	0.002	mg/L	05/15/96
Hg Mercury	EPA 245.1	ND	0.0002	mg/L	05/17/96
Mo Molybdenum	EPA 200.7	ND	0.002	mg/L	05/15/96
Ni Nickel	EPA 200.7	12 *	0.01	mg/L	05/17/96
Pb Lead	EPA 239.2	ND	0.005	mg/L	05/15/96
Sb Antimony	EPA 200.7	ND	0.004	mg/L	05/15/96
Se Selenium	EPA 270.2	ND	0.01	mg/L	05/14/96
Tl Thallium	EPA 200.7	0.07 *	0.01	mg/L	05/15/96
V Vanadium	EPA 200.7	ND	0.001	mg/L	05/15/96
Zn Zinc	EPA 200.7	150 *	0.01	mg/L	05/17/96

Reporting limits elevated on arsenic, lead and selenium due to matrix interference.

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit

## LEVINE-FRICKE

SAMPLE ID: LF-2  
 AEN LAB NO: 9605052-04  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
CCR 17 Metals (Low Level)					
Ag Silver	EPA 200.7	0.001 *	0.001	mg/L	05/16/96
As Arsenic	EPA 206.2	ND	0.002	mg/L	05/14/96
Ba Barium	EPA 200.7	0.018 *	0.002	mg/L	05/16/96
Be Beryllium	EPA 200.7	ND	0.0005	mg/L	05/16/96
Cd Cadmium	EPA 200.7	ND	0.001	mg/L	05/16/96
Co Cobalt	EPA 200.7	0.034 *	0.001	mg/L	05/16/96
Cr Chromium	EPA 200.7	ND	0.002	mg/L	05/16/96
Cu Copper	EPA 200.7	0.003 *	0.002	mg/L	05/16/96
Hg Mercury	EPA 245.1	ND	0.0002	mg/L	05/09/96
Mo Molybdenum	EPA 200.7	ND	0.002	mg/L	05/16/96
Ni Nickel	EPA 200.7	0.026 *	0.002	mg/L	05/16/96
Pb Lead	EPA 239.2	ND	0.002	mg/L	05/15/96
Sb Antimony	EPA 200.7	ND	0.004	mg/L	05/16/96
Se Selenium	EPA 270.2	ND	0.004	mg/L	05/14/96
Tl Thallium	EPA 200.7	0.02 *	0.01	mg/L	05/16/96
V Vanadium	EPA 200.7	ND	0.001	mg/L	05/16/96
Zn Zinc	EPA 200.7	0.53 *	0.01	mg/L	05/17/96

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit

## LEVINE - FRICKE

SAMPLE ID: LF-8  
 AEN LAB NO: 9605052-05  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	0.8 *	0.5 ug/L		05/09/96
Toluene	108-88-3	ND	0.5 ug/L		05/09/96
Ethylbenzene	100-41-4	3.4 *	0.5 ug/L		05/09/96
Xylenes, Total	1330-20-7	ND	2 ug/L		05/09/96
Purgeable HCs as Gasoline	5030/GCFID	0.18 *	0.05 mg/L		05/09/96
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
#Extraction for TPH	EPA 3510	-		Extrn Date	05/12/96
TPH as Diesel	GC-FID	2.3 *	0.05 mg/L		05/13/96
TPH as Oil	GC-FID	ND	0.2 mg/L		05/13/96
CCR 17 Metals (Low Level)					
Ag Silver	EPA 200.7	ND	0.001 mg/L		05/15/96
As Arsenic	EPA 206.2	2.1 *	0.002 mg/L		05/14/96
Ba Barium	EPA 200.7	0.066 *	0.002 mg/L		05/15/96
Be Beryllium	EPA 200.7	ND	0.0005 mg/L		05/15/96
Cd Cadmium	EPA 200.7	0.001 *	0.001 mg/L		05/15/96
Co Cobalt	EPA 200.7	0.001 *	0.001 mg/L		05/15/96
Cr Chromium	EPA 200.7	ND	0.002 mg/L		05/16/96
Cu Copper	EPA 200.7	ND	0.002 mg/L		05/15/96
Hg Mercury	EPA 245.1	ND	0.0002 mg/L		05/09/96
Mo Molybdenum	EPA 200.7	ND	0.002 mg/L		05/15/96
Ni Nickel	EPA 200.7	0.003 *	0.002 mg/L		05/15/96
Pb Lead	EPA 239.2	ND	0.002 mg/L		05/15/96
Sb Antimony	EPA 200.7	ND	0.004 mg/L		05/15/96
Se Selenium	EPA 270.2	ND	0.004 mg/L		05/14/96
Tl Thallium	EPA 200.7	ND	0.01 mg/L		05/16/96
V Vanadium	EPA 200.7	ND	0.001 mg/L		05/15/96
Zn Zinc	EPA 200.7	0.02 *	0.01 mg/L		05/17/96

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit

## LEVINE - FRICKE

SAMPLE ID: LF-1  
 AEN LAB NO: 9605052-06  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5 ug/L		05/09/96
Toluene	108-88-3	ND	0.5 ug/L		05/09/96
Ethylbenzene	100-41-4	ND	0.5 ug/L		05/09/96
Xylenes, Total	1330-20-7	ND	2 ug/L		05/09/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05 mg/L		05/09/96
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
#Extraction for TPH	EPA 3510	-		Extrn Date	05/12/96
TPH as Diesel	GC-FID	0.30 *	0.05 mg/L		05/13/96
TPH as Oil	GC-FID	ND	0.2 mg/L		05/13/96
CCR 17 Metals (Low Level)					
Ag Silver	EPA 200.7	ND	0.5 mg/L		05/15/96
As Arsenic	EPA 206.2	0.40 *	0.002 mg/L		05/14/96
Ba Barium	EPA 200.7	ND	1 mg/L		05/15/96
Be Beryllium	EPA 200.7	ND	0.2 mg/L		05/15/96
Cd Cadmium	EPA 200.7	9.9 *	0.5 mg/L		05/17/96
Co Cobalt	EPA 200.7	1 *	0.5 mg/L		05/15/96
Cr Chromium	EPA 200.7	ND	1 mg/L		05/15/96
Cu Copper	EPA 200.7	ND	1 mg/L		05/15/96
Hg Mercury	EPA 245.1	ND	0.0002 mg/L		05/09/96
Mo Molybdenum	EPA 200.7	ND	1 mg/L		05/15/96
Ni Nickel	EPA 200.7	3 *	1 mg/L		05/15/96
Pb Lead	EPA 239.2	0.95 *	0.002 mg/L		05/15/96
Sb Antimony	EPA 200.7	ND	2 mg/L		05/15/96
Se Selenium	EPA 270.2	ND	0.004 mg/L		05/14/96
Tl Thallium	EPA 200.7	ND	5 mg/L		05/15/96
V Vanadium	EPA 200.7	ND	0.5 mg/L		05/15/96
Zn Zinc	EPA 200.7	6,700 *	1 mg/L		05/17/96

Reporting limits elevated on metals by EPA 200.7 due to matrix interference.

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit

LEVINE - FRICKE

SAMPLE ID: LF-11  
 AEN LAB NO: 9605052-07  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
CCR 17 Metals (Low Level)					
Ag	Silver	EPA 200.7	ND	0.5 mg/L	05/15/96
As	Arsenic	EPA 206.2	ND	0.02 mg/L	05/14/96
Ba	Barium	EPA 200.7	ND	1 mg/L	05/15/96
Be	Beryllium	EPA 200.7	ND	0.2 mg/L	05/15/96
Cd	Cadmium	EPA 200.7	96 *	0.5 mg/L	05/17/96
Co	Cobalt	EPA 200.7	6.0 *	0.5 mg/L	05/15/96
Cr	Chromium	EPA 200.7	ND	1 mg/L	05/17/96
Cu	Copper	EPA 200.7	4 *	1 mg/L	05/15/96
Hg	Mercury	EPA 245.1	ND	0.0002 mg/L	05/09/96
Mo	Molybdenum	EPA 200.7	1 *	1 mg/L	05/17/96
Ni	Nickel	EPA 200.7	21 *	1 mg/L	05/15/96
Pb	Lead	EPA 239.2	0.07 *	0.05 mg/L	05/15/96
Sb	Antimony	EPA 200.7	ND	2 mg/L	05/15/96
Se	Selenium	EPA 270.2	ND	0.004 mg/L	05/14/96
Tl	Thallium	EPA 200.7	ND	5 mg/L	05/17/96
V	Vanadium	EPA 200.7	ND	0.5 mg/L	05/15/96
Zn	Zinc	EPA 200.7	34,000 *	1 mg/L	05/17/96

Reporting limits elevated due to matrix interference.

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit

LEVINE-FRICKE

SAMPLE ID: LF-16  
 AEN LAB NO: 9605052-08  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
CCR 17 Metals (Low Level)					
Ag Silver	EPA 200.7	ND	0.05	mg/L	05/15/96
As Arsenic	EPA 206.2	ND	0.005	mg/L	05/14/96
Ba Barium	EPA 200.7	ND	0.1	mg/L	05/15/96
Be Beryllium	EPA 200.7	ND	0.02	mg/L	05/15/96
Cd Cadmium	EPA 200.7	6.8 *	0.05	mg/L	05/17/96
Co Cobalt	EPA 200.7	4.9 *	0.05	mg/L	05/15/96
Cr Chromium	EPA 200.7	ND	0.1	mg/L	05/17/96
Cu Copper	EPA 200.7	16 *	0.1	mg/L	05/15/96
Hg Mercury	EPA 245.1	ND	0.0002	mg/L	05/09/96
Mo Molybdenum	EPA 200.7	ND	0.1	mg/L	05/15/96
Ni Nickel	EPA 200.7	13 *	0.1	mg/L	05/15/96
Pb Lead	EPA 239.2	ND	0.005	mg/L	05/15/96
Sb Antimony	EPA 200.7	ND	0.2	mg/L	05/15/96
Se Selenium	EPA 270.2	ND	0.01	mg/L	05/14/96
Tl Thallium	EPA 200.7	ND	0.5	mg/L	05/17/96
V Vanadium	EPA 200.7	ND	0.05	mg/L	05/15/96
Zn Zinc	EPA 200.7	2,300 *	0.1	mg/L	05/17/96

Reporting limits elevated due to matrix interference.

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

## LEVINE-FRICKE

SAMPLE ID: LF-3  
 AEN LAB NO: 9605052-09  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	05/09/96
Toluene	108-88-3	ND	0.5	ug/L	05/09/96
Ethylbenzene	100-41-4	ND	0.5	ug/L	05/09/96
Xylenes, Total	1330-20-7	ND	2	ug/L	05/09/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	05/09/96
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
#Extraction for TPH	EPA 3510	-		Extrn Date	05/12/96
TPH as Diesel	GC-FID	0.61 *	0.05	mg/L	05/13/96
TPH as Oil	GC-FID	ND	0.2	mg/L	05/13/96
CCR 17 Metals (Low Level)					
Ag Silver	EPA 200.7	ND	0.001	mg/L	05/15/96
As Arsenic	EPA 206.2	3.3 *	0.002	mg/L	05/14/96
Ba Barium	EPA 200.7	0.11 *	0.002	mg/L	05/15/96
Be Beryllium	EPA 200.7	ND	0.0005	mg/L	05/15/96
Cd Cadmium	EPA 200.7	0.002 *	0.001	mg/L	05/15/96
Co Cobalt	EPA 200.7	0.009 *	0.001	mg/L	05/15/96
Cr Chromium	EPA 200.7	ND	0.002	mg/L	05/16/96
Cu Copper	EPA 200.7	ND	0.002	mg/L	05/15/96
Hg Mercury	EPA 245.1	ND	0.0002	mg/L	05/09/96
Mo Molybdenum	EPA 200.7	0.082 *	0.002	mg/L	05/15/96
Ni Nickel	EPA 200.7	0.007 *	0.002	mg/L	05/15/96
Pb Lead	EPA 239.2	ND	0.005	mg/L	05/15/96
Sb Antimony	EPA 200.7	ND	0.004	mg/L	05/15/96
Se Selenium	EPA 270.2	ND	0.004	mg/L	05/14/96
Tl Thallium	EPA 200.7	0.02 *	0.01	mg/L	05/16/96
V Vanadium	EPA 200.7	0.001 *	0.001	mg/L	05/15/96
Zn Zinc	EPA 200.7	5.2 *	0.01	mg/L	05/17/96

Reporting limit elevated for lead due to matrix interference.

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

## LEVINE - FRICKE

SAMPLE ID: LF-11-FB  
 AEN LAB NO: 9605052-10  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
CCR 17 Metals (Low Level)					
Ag Silver	EPA 200.7	ND	0.001	mg/L	05/15/96
As Arsenic	EPA 206.2	ND	0.002	mg/L	05/14/96
Ba Barium	EPA 200.7	ND	0.002	mg/L	05/15/96
Be Beryllium	EPA 200.7	ND	0.0005	mg/L	05/15/96
Cd Cadmium	EPA 200.7	ND	0.001	mg/L	05/15/96
Co Cobalt	EPA 200.7	ND	0.001	mg/L	05/15/96
Cr Chromium	EPA 200.7	ND	0.002	mg/L	05/16/96
Cu Copper	EPA 200.7	ND	0.002	mg/L	05/15/96
Hg Mercury	EPA 245.1	ND	0.0002	mg/L	05/09/96
Mo Molybdenum	EPA 200.7	ND	0.002	mg/L	05/15/96
Ni Nickel	EPA 200.7	ND	0.002	mg/L	05/15/96
Pb Lead	EPA 239.2	ND	0.002	mg/L	05/15/96
Sb Antimony	EPA 200.7	ND	0.004	mg/L	05/15/96
Se Selenium	EPA 270.2	ND	0.004	mg/L	05/14/96
Tl Thallium	EPA 200.7	ND	0.01	mg/L	05/16/96
V Vanadium	EPA 200.7	ND	0.001	mg/L	05/15/96
Zn Zinc	EPA 200.7	ND	0.01	mg/L	05/17/96

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit



## LEVINE - FRICKE

SAMPLE ID: LF-102  
 AEN LAB NO: 9605052-11  
 AEN WORK ORDER: 9605052  
 CLIENT PROJ. ID: 3018.95.21

DATE SAMPLED: 05/02/96  
 DATE RECEIVED: 05/03/96  
 REPORT DATE: 05/21/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/G. Furnace	EPA 200.0	-		Prep Date	05/13/96
#Digestion/ICP	EPA 200.0	-		Prep Date	05/13/96
CCR 17 Metals (Low Level)					
Ag Silver	EPA 200.7	0.001 *	0.001	mg/L	05/16/96
As Arsenic	EPA 206.2	ND	0.002	mg/L	05/14/96
Ba Barium	EPA 200.7	0.019 *	0.002	mg/L	05/16/96
Be Beryllium	EPA 200.7	ND	0.0005	mg/L	05/16/96
Cd Cadmium	EPA 200.7	ND	0.001	mg/L	05/16/96
Co Cobalt	EPA 200.7	0.035 *	0.001	mg/L	05/16/96
Cr Chromium	EPA 200.7	ND	0.002	mg/L	05/16/96
Cu Copper	EPA 200.7	0.005 *	0.002	mg/L	05/16/96
Hg Mercury	EPA 245.1	ND	0.0002	mg/L	05/09/96
Mo Molybdenum	EPA 200.7	0.002 *	0.002	mg/L	05/16/96
Ni Nickel	EPA 200.7	0.020 *	0.002	mg/L	05/16/96
Pb Lead	EPA 239.2	ND	0.002	mg/L	05/15/96
Sb Antimony	EPA 200.7	ND	0.004	mg/L	05/16/96
Se Selenium	EPA 270.2	ND	0.004	mg/L	05/14/96
Tl Thallium	EPA 200.7	ND	0.01	mg/L	05/16/96
V Vanadium	EPA 200.7	ND	0.001	mg/L	05/16/96
Zn Zinc	EPA 200.7	0.37 *	0.01	mg/L	05/17/96

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit

AEN (CALIFORNIA)  
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9605052

CLIENT PROJECT ID: 3018.95.21

Quality Control Summary

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

Definitions

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

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

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

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

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

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

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

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 3510 GCFID

AEN JOB NO: 9605052  
AEN LAB NO: 0512-BLANK  
DATE EXTRACTED: 05/12/96  
DATE ANALYZED: 05/12/96  
INSTRUMENT: A  
MATRIX: WATER

Method Blank

Analyte	Result (mg/L)	Reporting Limit (mg/L)
Diesel	ND	0.05
Oil	ND	0.2

QUALITY CONTROL DATA

METHOD: EPA 3510 GCFID

AEN JOB NO: 9605052  
 DATE EXTRACTED: 05/12/96  
 INSTRUMENT: A  
 MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery	
			n-Pentacosane	
05/13/96	LF-8	05	98	
05/13/96	LF-1	06	96	
05/13/96	LF-3	09	95	
QC Limits:			59-118	

DATE EXTRACTED: 05/12/96  
 DATE ANALYZED: 05/12/96  
 SAMPLE SPIKED: 9604371-03  
 INSTRUMENT: A

Matrix Spike Recovery Summary

Analyte	Spike Added (mg/L)	Average Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
Diesel	4.00	94	12	58-107	15

## QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9605052  
AEN LAB NO: 0509-BLANK  
DATE ANALYZED: 05/09/96  
INSTRUMENT: H  
MATRIX: WATER

## Method Blank

	CAS #	Result (ug/L)	Reporting Limit (ug/L)
Benzene	71-43-2	ND	0.5
Toluene	108-88-3	ND	0.5
Ethylbenzene	100-41-4	ND	0.5
Xylenes, Total	1330-20-7	ND	2
HCs as Gasoline		ND mg/L	0.05 mg/L

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9605052  
 INSTRUMENT: H  
 MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery	
			Fluorobenzene	
05/09/96	LF-8	05	101	
05/09/96	LF-1	06	104	
05/09/96	LF-3	09	102	
QC Limits:			70-130	

DATE ANALYZED: 05/08/96  
 SAMPLE SPIKED: 9604430-02  
 INSTRUMENT: H

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
Benzene	22.2	93	3	85-109	17
Toluene	73.9	91	1	87-111	16
Hydrocarbons as Gasoline	500	100	1	66-117	19

## QUALITY CONTROL DATA

AEN JOB NO: 9605052  
 SAMPLE SPIKED: DI WATER  
 DATE(S) ANALYZED: 05/09-17/96  
 MATRIX: WATER

## Method Blank and Spike Recovery Summary

Analyte	Inst./ Method	Blank Result (mg/L)	Spike Added (mg/L)	MS Percent Recovery	RPD	QC Limits	
						Percent Recovery	RPD
Ag, Silver	ICP/200.7	ND	0.005	82	9	75-125	16
As, Arsenic	4000/206.2	ND	0.04	92	4	69-136	13
Ba, Barium	ICP/200.7	ND	0.2	86	7	75-125	16
Cd, Cadmium	ICP/200.7	ND	0.01	89	1	75-125	16
Cr, Chromium	ICP/200.7	ND	0.02	84	6	75-125	16
Cu, Copper	ICP/200.7	ND	0.025	86	8	75-125	16
Hg, Mercury	Hg/245.1	ND	2.0 ug/L	96	5	89-121	10
Ni, Nickel	ICP/200.7	ND	0.05	85	6	75-125	16
Pb, Lead	4000/239.2	ND	0.02	102	1	75-125	14
Se, Selenium	4000/270.2	ND	0.08	99	2	75-115	13
Zn, Zinc	ICP/200.7	ND	0.25	108	3	90-121	10

\*\*\*END OF REPORT\*\*\*

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

960505Z

Project No.: 3018.95.21	Field Logbook No.:	Date: 5/3/96	Serial No.:
Project Name: VOLVO/GM	Project Location: OAKLAND, CA		No 15075

SAMPLES					ANALYSES					SAMPLERS:		REMARKS	
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	TITLE 22 METALS	TPH-10	TPH-0	TPH-9	BTEX	HOLD		RUSH
MW-3	5/2/96	1125	01A	1	H <sub>2</sub> O	X							STD TAT
LF-12		1140	02A	1		X							
LF-5		1110	03A	1		X							RESULTS TO
LF-2		1445	04A	1		X							JENNIFER BEATTY
LF-8		1335	05A-F	6		X	X	X	X	X			
LF-1		1500	06A-F	6		X	X	X	X	X			TITLE 22 METALS TO
LF-11	5/3/96	1050	07A	1		X							Basin Plan Detection
LF-16		945	08A	1		X							LIMITS
LF-3		1010	09A-F	6		X	X	X	X	X			FIELD FILTERED +
LF-11-FB		1045	10A	1		X							PRESERVED
LF-102	5/2/96	1545	11A	1		X							

RELINQUISHED BY: (Signature) JC. Kelly	DATE 5-3-96	TIME 1530	RECEIVED BY: (Signature) Michael E. Hall	DATE 5-3-96	TIME 1530
RELINQUISHED BY: (Signature) Michael E. Hall	DATE 5-3-96	TIME 1700	RECEIVED BY: (Signature) Ronald C. Jensen	DATE 5/3/96	TIME 17:00
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME

METHOD OF SHIPMENT:	DATE	TIME	LAB COMMENTS:
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Sample Collector: LEVINE-FRICKE 1900 Powell Street, 12th Floor Emeryville, California 94608 (510) 652-4500	Analytical Laboratory: AEN I PLEASANT HILL, CA.
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**APPENDIX B**

**WATER-QUALITY SAMPLING FORMS**

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 3018.95.21  
 Project Name: Volvo/GM  
 Sample Location: LF-1  
 Samplers Name: JCK JWR  
 Sampling Plan Prepared By: JCK  
 Sampling Method: \_\_\_\_\_

Date: 5/2/96  
 Sample No.: LF-1  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- |   |   |
|---|---|
| <input type="checkbox"/> Centrifugal Pump     | <input type="checkbox"/> Disposable Bailer        |
| <input type="checkbox"/> Submersible Pump     | <input checked="" type="checkbox"/> Teflon Bailer |
| <input checked="" type="checkbox"/> Hand Bail | <input type="checkbox"/> _____                    |

Analyses Requested  
TITLE 22 METALS

Number and Types of Bottle used  
1 L. PLASTIC  
3 VOA  
2 L. GLASS

TPH-g BTEX  
TPH-d+o

```

20.00
 2.35
-----
17.65
  .16
-----
10590
1765
-----
28290

17.65  2000
  .8    1412
-----
14120  588
    
```

80% DTW \_\_\_\_\_

Method of Shipment  
AEN  
 (Lab Name)

- Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: LF-1  
 Depth of Water: 2.35  
 Well Depth: 20.00  
 Height of Water Column: 17.65  
 Volume in Well: 2.82

- Well Diameter:  
 2" (0.16 Gallon/Feet)  
 4" (0.65 Gallon/Feet)  
 5" (1.02 Gallon/Feet)  
 6" (1.47 Gallon/Feet)

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temparture °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
12:57								START
12:59		23		20.6	4.75	9660		<del>TURBID</del> CLEAR
13:01		6		20.5	4.52	10270		CLEAR
13:04		9		20.5	3.89	30600		TURBID
15:00	4.65							SAMPLE

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 3018 95. 21  
 Project Name: Volvo / GM  
 Sample Location: LF-2  
 Samplers Name: JCK DRJ  
 Sampling Plan Prepared By: \_\_\_\_\_  
 Sampling Method: \_\_\_\_\_

Date: 5/2/96  
 Sample No.: LF-2  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- |   |   |
|---|---|
| <input type="checkbox"/> Centrifugal Pump     | <input type="checkbox"/> Disposable Bailer        |
| <input type="checkbox"/> Submersible Pump     | <input checked="" type="checkbox"/> Teflon Bailer |
| <input checked="" type="checkbox"/> Hand Bail | <input type="checkbox"/> _____                    |

Analyses Requested  
TITLE 22 METALS

Number and Types of Bottle used  
1 L. PLASTIC

Method of Shipment

AEN

(Lab Name)

Courier

Hand Deliver:

Well Number: \_\_\_\_\_  
 Depth of Water: 4.41  
 Well Depth: 14.75  
 Height of Water Column: 10.34  
 Volume in Well: 1.65

Well Diameter:

- 2" (0.16 Gallon/Feet)  
 4" (0.65 Gallon/Feet)  
 5" (1.02 Gallon/Feet)  
 6" (1.47 Gallon/Feet)

14.75	
4.41	
-----	
10.34	
.16	
-----	
6.204	
10.34	
-----	
1.6544	
10.34	14.75
.8	8.27
-----	-----
8.272	6.48

80% DTW 6.48

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
12:40								START
12:42		2		21.2	6.29	3720		TURBID
12:44		4		20.7	6.29	3710		TURBID
12:47		6		20.5	6.27	3710		TURBID
14:45	5.15							SAMPLE
15:45								DUPLICATE

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 3018 95 21  
 Project Name: Volvo/GM  
 Sample Location: LF-3  
 Samplers Name: JCK DRJ  
 Sampling Plan Prepared By: JCK  
 Sampling Method: \_\_\_\_\_

Date: 5/3/96  
 Sample No.: LF-3  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- Centrifugal Pump       Disposable Bailer  
 Submersible Pump       Teflon Bailer  
 Hand Bail                   \_\_\_\_\_  
 (Other)

Analyses Requested: PH, DO  
PH, S, BTEX  
TITLE 22 METALS

Number and Types of Bottle used: 2 L. GLASS  
3 VOA  
1 L. PLASTIC

Method of Shipment: AEN  
 (Lab Name)       Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: LF-3      Well Diameter: \_\_\_\_\_  
 Depth of Water: 4.64       2" (0.16 Gallon/Feet)  
 Well Depth: 14.93       4" (0.65 Gallon/Feet)  
 Height of Water Column: 10.29       5" (1.02 Gallon/Feet)  
 Volume in Well: 165       6" (1.47 Gallon/Feet)

```

14.93
 4.64
-----
10.29
  .16
-----
 6.174
10.29
-----
16.464

10.29      14.93
  .8        8.23
-----
 8.232      6.70

80% DTW 6.70
    
```

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
9:57								START
9:59		2		21.1	6.26	3550		TURBID
10:01		4		20.9	6.31	3720		TURBID
10:04		6		20.9	6.30	3810		TURBID
10:10	5.10							SAMPLE

Inlet Depth: \_\_\_\_\_  
 Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 3018.95.21  
 Project Name: Volvo / GM  
 Sample Location: LF-5  
 Samplers Name: JCK DJT  
 Sampling Plan Prepared By: JCK  
 Sampling Method: \_\_\_\_\_

Date: 5/2/96  
 Sample No.: LF-5  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- Centrifugal Pump       Disposable Bailer  
 Submersible Pump       Teflon Bailer  
 Hand Bail                   \_\_\_\_\_  
 (Other) \_\_\_\_\_

Analyses Requested  
TITLE 22 METALS

Number and Types of Bottle used  
1 L. PLASTIC

21.10  
 5.72  
 -----  
 15.38  
 .16  
 -----  
 9.228  
 1538  
 -----  
 24508  
  
 15.38  
 8  
 -----  
 4

Method of Shipment

AEN  
(Lab Name)

- Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: LF-5  
 Depth of Water: 5.72  
 Well Depth: 21.10  
 Height of Water Column: 15.38  
 Volume in Well: 2.45

- Well Diameter: \_\_\_\_\_
- 2" (0.16 Gallon/Feet)  
 4" (0.65 Gallon/Feet)  
 5" (1.02 Gallon/Feet)  
 6" (1.47 Gallon/Feet)

80% DTW \_\_\_\_\_

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Tempature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
10:59								START
11:01		2.5		20.6	5.80	12000		TURBID
11:03		5.0		20.6	5.97	12180		TURBID
11:05		7.5		20.4	6.00	13810		TURBID
11:10	5.86							SAMPLE

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

MET. CITY, SAMPLING INFO 02/10/94

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 3018 95 21  
 Project Name: Vocuo / GM  
 Sample Location: LF-8  
 Samplers Name: JCK DRS  
 Sampling Plan Prepared By: JCK  
 Sampling Method: \_\_\_\_\_

Date: 5/2/96  
 Sample No.: LF-8  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- Centrifugal Pump       Disposable Bailer  
 Submersible Pump       Teflon Bailer  
 Hand Bail       \_\_\_\_\_  
 (Other)

Analyses Requested: TITLE 22 METALS  
 TPH-9 \_\_\_\_\_  
 TPH-d.o \_\_\_\_\_

Number and Types of Bottle used:  
1 L PLASTIC  
3 VOA  
2 L. GLASS

14.65  
 4.41  


---

 10.24  
 .65  


---

 5120  
 6144  


---

 66560

10.24      14.65  
 .8              8.19  


---

 8192          6.46

80% DTW 6.46

Method of Shipment: AEN       Courier  
 (Lab Name)       Hand Deliver:

Well Number: LF-8      Well Diameter: \_\_\_\_\_  
 Depth of Water: 4.41       2" (0.16 Gallon/Feet)  
 Well Depth: 14.65       4" (0.65 Gallon/Feet)  
 Height of Water Column: 10.24       5" (1.02 Gallon/Feet)  
 Volume in Well: 6.66       6" (1.47 Gallon/Feet)

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
13:19								START
13:20		7		21.1	6.51	2740		CLEAR
13:21	DEWATER	9						OFF
13:24								ON
13:25		14		20.2	6.76	2590		CLEAR
13:27	DEWATER	21		19.8	6.89	2470		CLEAR
13:35	5.40							SAMPLE

Inlet Depth: \_\_\_\_\_  
 Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 3018.96  
 Project Name: VOLVO/GM  
 Sample Location: LF-11  
 Samplers Name: JCK DJT  
 Sampling Plan Prepared By: JCK  
 Sampling Method: \_\_\_\_\_

Date: 5/3/96  
 Sample No.: LF-11  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- Centrifugal Pump       Disposable Bailer  
 Submersible Pump       Teflon Bailer  
 Hand Bail       \_\_\_\_\_  
 (Other)

Analyses Requested: TITLE 22 METALS  
 Number and Types of Bottle used: 1. C. Ph.

$$\begin{array}{r}
 20.01 \\
 \underline{2.89} \\
 17.12 \\
 \underline{.65} \\
 8560 \\
 10272 \\
 \hline
 111280
 \end{array}$$
  

$$\begin{array}{r}
 17.12 \quad 20.01 \\
 \underline{.8} \quad \underline{13.70} \\
 13696 \quad 621
 \end{array}$$
  
 80% DTW 6.21

Method of Shipment: AEN  
 (Lab Name)  
 Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: LF-11      Well Diameter: \_\_\_\_\_  
 Depth of Water: 2.89       2" (0.16 Gallon/Feet)  
 Well Depth: 20.01       4" (0.65 Gallon/Feet)  
 Height of Water Column: 17.12       5" (1.02 Gallon/Feet)  
 Volume in Well: 11.13       6" (1.47 Gallon/Feet)

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
8:44								START
8:47		12		21.5	3.56	19040		CLEAR
8:48	DE-PRO	19						OFF
10:50	14.37							SAMPLE

Inlet Depth: \_\_\_\_\_  
 Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 3018.95.21

Project Name: Volvo / GM

Sample Location: LF-12

Samplers Name: JCK DRJ

Sampling Plan Prepared By: JCK

Sampling Method:

Date: 5/2/96

Sample No.: LF-12

FB: \_\_\_\_\_

DUP: \_\_\_\_\_

- Centrifugal Pump      Disposable Bailer
- Submersible Pump      Teflon Bailer
- Hand Bail      \_\_\_\_\_
- (Other)

Analyses Requested EPA TITLE 22 METALS     Number and Types of Bottle used 1 G. PLASTIC

Method of Shipment

AEN

(Lab Name)

Courier

Hand Deliver:

Well Number: LF-12

Well Diameter:

Depth of Water: 7.09

2" (0.16 Gallon/Feet)

Well Depth: 14.70

4" (0.65 Gallon/Feet)

Height of Water Column: 7.61

5" (1.02 Gallon/Feet)

Volume in Well: 4.95

6" (1.47 Gallon/Feet)

14.70  
 7.09  
 -----  
 7.61  
 .65  
 -----  
 3.805  
 4.566  
 -----  
 4.9465  
  
 7.61  
 8  
 -----  
 6088  
  
 14.70  
 6.09  
 -----  
 8.61  
  
 80% DTW 8.61

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Tempature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
9:28								START
10:30		5		20.4	3.77	8900		SL. TURBID
10:30	DEWATER	7						OFF
10:35								ON
10:35		10		21.5	3.82	8620		SL. TURBID
10:36		11						DFF
10:50								ON
10:51	DEWATER	15		21.5	3.81	8710		SL. TURBID / OFF /
11:40	8.32							SAMPLE

Inlet Depth: \_\_\_\_\_

Comments:

(Recommended Method For Purging Well)



# WATER-QUALITY SAMPLING INFORMATION

Project No.: 30189521  
 Project Name: VOLVO/GM  
 Sample Location: LF-16  
 Samplers Name: JCK DRJ  
 Sampling Plan Prepared By: JCK  
 Sampling Method: \_\_\_\_\_

Date: 5/3/96  
 Sample No.: LF-16  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- Centrifugal Pump       Disposable Bailer  
 Submersible Pump       Teflon Bailer  
 Hand Bail                       \_\_\_\_\_ (Other)

Analyses Requested  
LITLE 22 METALS

Number and Types of Bottle used  
1 L. PLASTIC

24.50  
 6.24  
 -----  
 18.26  
 .16  
 -----  
 109.56  
 19.26  
 -----  
 2.9216

18.26      24.50  
 .8          14.61  
 -----  
 146.08      9.89

80% DTW 9.89

Method of Shipment  
AEN  
 (Lab Name)

- Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: LF-16  
 Depth of Water: 6.24  
 Well Depth: 24.50  
 Height of Water Column: 18.26  
 Volume in Well: 2.92

- Well Diameter: \_\_\_\_\_
- 2" (0.16 Gallon/Feet)  
 4" (0.65 Gallon/Feet)  
 5" (1.02 Gallon/Feet)  
 6" (1.47 Gallon/Feet)

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
9:04								START
9:09		23		19.8	4.20	11800		TURBID
9:12		6		19.8	4.22	12170		TURBID SLOTTED SCREEN
9:15		9		19.7	4.21	12630		TURBID " "
9:45	9.80							SAMPLE

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

1500000 22 JUL 94 BY

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 3018.95.21  
 Project Name: Volvo/GM  
 Sample Location: MW-3  
 Samplers Name: JCK DJT  
 Sampling Plan Prepared By: JCK  
 Sampling Method: \_\_\_\_\_

Date: 5/2/96  
 Sample No.: MW-3  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Centrifugal Pump | <input type="checkbox"/> Disposable Bailer        |
| <input type="checkbox"/> Submersible Pump            | <input checked="" type="checkbox"/> Teflon Bailer |
| <input type="checkbox"/> Hand Bail                   | <input type="checkbox"/> _____<br>(Other)         |

Analyses Requested: TITLE 22 METALS  
 Number and Types of Bottle used: 16 PLASTIC

Method of Shipment: AEN  
 (Lab Name)  Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: MW-3 Well Diameter: \_\_\_\_\_  
 Depth of Water: 5.23  2" (0.16 Gallon/Feet)  
 Well Depth: 27.00  4" (0.65 Gallon/Feet)  
 Height of Water Column: 21.77  5" (1.02 Gallon/Feet)  
 Volume in Well: 3.49  6" (1.47 Gallon/Feet)

27.00  
 5.23  


---

 21.77  
 .16  


---

 13062  
 2177  


---

 34832  
  
 21.77      27.00  
 .8          17.42  


---

 17416      958  
  
 80% DTW 9.58

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
015								START
1017		3.5		21.0	4.38	3780		TURBID
018		7.0		20.6	4.44	3950		TURBID
1019		10.5		20.6	<del>4.63</del>	4790		TURBID/OFF
1019	DEWATER	11.5			4.63			OFF
1125	5.89							SAMPLE

Inlet Depth: \_\_\_\_\_  
 Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)