DATA REPORT FOR GROUND-WATER SAMPLING AND ANALYSIS FOR CALMAR FACILITY CITY OF INDUSTRY, CALIFORNIA

April 25, 1995
LF 2455.00-12

LEVINE·FRICKE

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ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

April 25, 1995

LF 2455.00-12

Mr. Alan Hu
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza
Monterey Park, California 91754

Subject: Data Report for Ground-Water Sampling and Analysis for Calmar Facility
City of Industry, California

Dear Mr. Hu:

Attached is the ground-water monitoring report for Calmar's facility located in the City of Industry, California. If you have any questions or comments regarding this matter, please call me at (714) 955-1390.

Sincerely,

David E. Field
Senior Associate Hydrogeologist

Attachment

cc: Aldie Johnson, Calmar
Bruce Howard, Latham & Watkins

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CERTIFICATION *

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

REGISTERED GEOLOGIST
DAVID E. FIELD
No. 4629
STATE OF CALIFORNIA

David E. Field, R.G.
California Registered Geologist #4629

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April 25, 1995 LF 2455.00-12

DATA REPORT FOR GROUND-WATER SAMPLING AND ANALYSIS AT THE CALMAR FACILITY CITY OF INDUSTRY, CALIFORNIA

1.0 INTRODUCTION

At the request of the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, Calmar, Inc., is currently conducting a ground-water investigation at its facility located at 333 South Turnbull Canyon Road in the City of Industry, Los Angeles County, California ("the Site"; Figure 1). This data report summarizes the results for quarterly sampling events conducted by Levine·Fricke, Inc., on October 6 and 7, 1994, and January 26 and 27, 1995.

2.0 SCOPE OF WORK PERFORMED

Levine·Fricke performed the work at the Site on the following dates:

1. Depth-to-ground-water measurements (monitoring wells MW-1 through MW-7 and piezometers P-1, P-2, and P-3)

   - October 6, 1994
   - January 26, 1995

2. Ground-water sampling (monitoring wells MW-1 through MW-7 and piezometers P-1, P-2, and P-3)

   - October 6 and 7, 1994
   - January 26 and 27, 1995

Details of field procedures used by Levine·Fricke are presented in Appendix A.

3.0 GROUND-WATER ELEVATION AND FLOW DIRECTION

Measurements of depth to ground water, along with historical ground-water elevation data collected at the Site, are summarized in Table 1. Ground-water elevation data for October 6, 1994, and January 26, 1995, were used to construct ground-water elevation contour maps for the Site (Figures 2 and 3). As shown in Figures 2 and 3, the overall horizontal flow direction interpreted for October 1994 and January 1995 is consistent with that previously interpreted for the Site.

4.0 ANALYTICAL RESULTS FOR GROUND-WATER SAMPLING

Ground-water samples collected in October 1994 were submitted to Terra Tech Labs located in Santa Ana, California, under chain-of-custody documentation for the following analyses:

- halogenated organic compounds using EPA Method 8010
- aromatic organic compounds (benzene, toluene, ethylbenzene, and total xylenes; BTEX) using EPA Method 8020

Samples collected in January 1995 were also submitted to Terra Tech Labs in Santa Ana, California, under chain-of-custody documentation for analysis for halogenated organic compounds using EPA Method 8010 only. Analytical results for ground-water samples submitted are summarized in Table 2 and Figures 4 and 5. Laboratory certificates and chain-of custody documentation for samples collected on October 6 and 7, 1994, are presented in Appendices B and C, respectively. Laboratory certificates and chain-of-custody documentation for samples collected on January 26 and 27, 1995, are presented in Appendices D and E, respectively.

4.1 Analytical Results for October 6 and 7, 1994

Analytical results for ground-water samples collected on October 6 and 7, 1994, are summarized in Table 2 and Figure 4. The type of compounds detected is consistent with those historically detected at the Site.

Analytical results for a duplicate sample collected from monitoring well MW-1 produced near identical results for the analytical methods used. No compounds were detected in ground-water samples collected and submitted from monitoring wells MW-8 and MW-9.

4.2 Analytical Results for January 26 and 27, 1995

Analytical results for ground-water samples collected on January 26 and 27, 1995, are summarized in Table 2 and Figure 5. The type of compounds detected is consistent with those historically detected at the Site.

Analytical results for a duplicate sample collected from piezometer P-1 produced near identical results for the analytical methods used.

5.0 CONCLUSIONS

Concentrations of VOCs detected in ground water appear to be relatively consistent with historical concentration data collected at the Site. The primary chemicals of concern remain PCE and TCE. VOCs were detected in ground-water samples collected from upgradient monitoring wells. Ground-water flow interpreted for October 1994 and January 1995 is consistent with the historical interpretation for the Site. Low concentrations of toluene detected in ground-water samples collected in October from MW-3, MW-4, and P-1 are not consistent with historical data and probably represent either laboratory, equipment, or trip contamination. No equipment or trip blanks were submitted for analysis for BTEX compounds to verify the potential source of these compounds in samples submitted in October 1994. BTEX compounds have not been detected in soil or soil-vapor samples collected from on-site investigation conducted by Calmar.

Table 1 :

SUMMARY OF HISTORICAL GROUND-WATER ELEVATION DATA

Calmar-City of Industry

LF 2455

Well Number	Well Elevation (feet-MSL)	Date Sampled	Depth to Water (feet)	Ground-Water Elevation (feet-MSL)	Relative Change (feet)
MW-4	304.78	04/15/93	35.85	268.93	--
		07/30/93	33.96	270.82	1.89
		11/30/93	32.46	272.32	1.50
		04/28/94	30.76	274.02	1.70
		07/27/94	30.56	274.22	0.20
		10/06/94	31.01	273.77	-0.45
		01/26/94	30.61	274.17	0.40
MW-5	304.09	04/15/93	34.09	270.00	--
		07/30/93	32.31	271.78	1.78
		11/30/93	30.9	273.19	1.41
		04/28/94	29.27	274.82	1.63
		07/27/94	29.04	275.05	0.23
		10/06/94	29.46	274.63	-0.42
		01/26/94	28.98	275.11	0.48
MW-6	303.50	07/30/93	33.87	269.63	--
		11/30/93	32.37	271.13	1.50
		04/28/94	30.59	272.91	1.78
		07/27/94	30.35	273.15	0.24
		10/06/94	30.75	272.75	-0.40
		01/26/94	30.42	273.08	0.33
MW-7	303.04	07/30/93	34.00	269.04	--
		11/30/93	32.24	270.80	1.76
		04/28/94	30.43	272.61	1.81
		07/27/94	30.20	272.84	0.23
		10/06/94	30.61	272.43	-0.41
		01/26/94	30.78	272.26	-0.17
P-1	301.99	03/29/89	34.06	267.93	--
		04/29/91	40.59	261.40	-6.53
		05/10/91	40.66	261.33	-0.07
		07/30/91	41.40	260.59	-0.74
		10/11/91	41.95	260.04	-0.55
		03/25/92	41.16	260.83	0.79
	301.65 *	04/15/93	34.94	266.71	5.88
		07/30/93	32.76	268.89	2.18
		11/30/93	NA	--	--
		04/28/94	29.11	272.54	3.65
		07/27/94	29.04	272.61	0.07
		10/06/94	29.05	272.60	-0.01
		01/26/94	28.53	273.12	0.52

Table 1 :

SUMMARY OF HISTORICAL GROUND-WATER ELEVATION DATA

Calmar-City of Industry

LF 2455

Well Number	Well Elevation (feet-MSL)	Date Sampled	Depth to Water (feet)	Ground-Water Elevation (feet-MSL)	Relative Change (feet)
P-2	303.09	03/29/89	35.14	267.95	--
		04/29/91	42.04	261.05	-6.90
		05/10/91	40.10	262.99	1.94
		07/30/91	42.82	260.27	-2.72
		10/11/91	43.43	259.66	-0.61
		03/25/92	43.01	260.08	0.42
		04/15/93	36.58	266.51	6.43
		07/30/93	34.25	268.84	2.33
		11/30/93	32.59	270.50	1.66
		04/28/94	30.78	272.31	1.81
		07/27/94	30.52	272.57	0.26
		10/06/94	30.94	272.15	-0.42
		01/26/94	30.62	272.47	0.32
P-3	305.11	03/29/89	36.59	268.52	--
		04/29/91	40.59	264.52	-4.00
		05/10/91	40.68	264.43	-0.09
		07/30/91	41.86	263.25	-1.18
		10/11/91	42.07	263.04	-0.21
		03/25/92	41.21	263.90	0.86
	305.01 *	04/15/93	35.12	269.89	5.99
		07/30/93	33.96	271.05	1.16
		11/30/93	32.12	272.89	1.84
		04/28/94	30.48	274.53	1.64
		07/27/94	30.33	274.68	0.15
		10/06/94	30.76	274.25	-0.43
		01/26/94	30.04	274.97	0.72

NOTE: MSL = Mean Sea Level
* = Resurveyed after top of casing trimmed in April 1993.
NA = No access (area flooded).

QA/QC SJS

Table 2 :
SUMMARY OF GROUND-WATER QUALITY DATA
BTEX (EPA Method 8020/602)
and VOCs (EPA Method 8010/601)
Calmar-City of Industry
LF 2455
All values reported in micrograms per liter (µg/L)

Well Number	Date Sampled	PCE	TCE	1,1-DCE	1,1-DCA	cis-1,2-DCE	1,2-DCA	1,1,1-TCA	Toluene
MW-1	09/01/88	20	23	6.1	ND	TR	ND	6.5	TR
	04/29/91	34	34	19	ND	2.9	ND	4.5	<1.0
	10/11/91	32	27	160	ND	2	ND	3	<1.0
	03/25/92	12	16	4.4	ND	1.7	<0.5	0.9	<1.0
	04/16/93	18	15	11	<1.0	<1.0	<1.0	2.0	1.7
	08/03/93	13	ND	7	ND	ND	<1.0	1.4	<1.0
	11/30/93	12.0	8.0	3.5	<1.0	<1.0	<1.0	1.5	<1.0
	03/28/94	18	9.9	5.2	<1.0	<1.0	<1.0	2.6	NA
	06/21/94	14	6.2	3.4	<1.0	<1.0	<1.0	1.7	<1.0
	10/06/94	13	6	2.7	<1.0	<1.0	<1.0	1.8	<1.0
	10/06/94 (D)	13	5.7	2.6	<1.0	<1.0	<1.0	1.8	<1.0
	01/26/95	13	6.1	1.5	<1.0	<1.0	<1.0	<1.0	NA
	03/28/95	12	5.9	1.6	<1.0	<1.0	<1.0	<1.0	NA
	03/28/95 (D)	9.0	3.5	4.4	<1.0	<1.0	<1.0	<1.0	NA
MW-2	09/01/88	7	42	4	ND	1.9	ND	0.77	<1.0
	04/29/91	11	140	52	5.4	2.2	ND	73	<1.0
	10/11/91	13	5	2	ND	ND	ND	ND	<1.0
	03/25/92	7.2	84	20	2.5	2	<1.0	33	<1.0
	04/15/93	8.2	250	96	20	3.9	<1.0	98	<1.0
	08/02/93	4.7	110	49	9.2	1.6	<1.0	34	<1.0
	12/01/93	6.2	200	26	4.2	1.7	<1.0	13	<1.0
	03/29/94	7.3	260	40	6.7	1.9	<1.0	20	NA
	06/22/94	4.2	<5.0	22	4.8	<1.0	<1.0	12	<1.0
	10/06/94	6.2	44	8.2	2.6	<1.0	<1.0	4.9	<1.0
	01/26/95	5.7	200	31	7.9	<1.0	<1.0	15	NA
	03/28/95	5.3	100	22	4.7	1.6	<1.0	7.3	NA
MW-3	09/01/88	47	20	79	36	TR	3.98	2.3	<1.0
	04/29/91	170	210	27	2.8	ND	ND	5.4	<1.0
	04/16/93	170	24	71	7.5	<1.0	<1.0	4.2	<1.0
	08/02/93	160	23	47	9.6	ND	<1.0	2.3	<1.0
	11/30/93	360	19	17	1.0	<1.0	<1.0	2.5	<1.0
	11/30/93 (D)	320	19	16	<1.0	<1.0	<1.0	2.5	<1.0
	03/29/94	410	17	12	1.1	1.2	<1.0	2.9	NA
	06/22/94	160	11	16	<1.0	<1.0	<1.0	1.6	<1.0
	10/06/94	110	28	61	12	2.2	<1.0	2.8	6.0
	01/26/95	170	8.6	7.1	<1.0	<1.0	<1.0	1.4	NA
	03/28/95	160	17	53	1.4	1.4	<1.0	2.1	NA
MW-4	04/16/93	12	4.5	5.4	<1.0	<1.0	<1.0	2.4	<1.0
	04/23/93	12	4.9	6.3	<1.0	<1.0	<1.0	2.4	<1.0
	08/03/93	8.9	3.6	1.9	ND	ND	<1.0	1.2	<1.0
	11/30/93	10	2.7	1.3	<1.0	<1.0	<1.0	1.7	<1.0
	03/28/94	16	5.8	2.7	<1.0	<1.0	<1.0	2.8	NA
	04/23/94	12	4.9	6.3	<1.0	<1.0	<1.0	2.4	<1.0
	06/21/94	10	3.4	3.7	<1.0	<1.0	<1.0	1.2	<1.0
	10/07/94	12	4.4	1.9	<1.0	<1.0	<1.0	1.5	6.8
	01/26/95	12	4.1	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	03/29/95	10	2.9	3.7	<1.0	<1.0	<1.0	<1.0	NA

Table 2 :
SUMMARY OF GROUND-WATER QUALITY DATA
BTEX (EPA Method 8020/602)
and VOCs (EPA Method 8010/601)
Calmar-City of Industry
LF 2455
All values reported in micrograms per liter (µg/L)

Well Number	Date Sampled	PCE	TCE	1,1-DCE	1,1-DCA	cis-1,2-DCE	1,2-DCA	1,1,1-TCA	Toluene
MW-5	04/16/93	5.0	2.8	2.4	<1.0	<1.0	<1.0	1.8	<1.0
	04/23/93	5.9	2.2	1.0	<1.0	<1.0	<1.0	1.7	<1.0
	08/03/93	3.3	1.7	ND	ND	ND	<1.0	2.4	<1.0
	12/01/93	4.2	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	03/28/94	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/23/94	5.9	2.2	1.0	<1.0	<1.0	<1.0	1.7	1.6
	06/21/94	<1.0	<5.0	<1.0	130	<1.0	<1.0	<1.0	<1.0
	10/07/94	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/26/95	3.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	03/29/95	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
MW-6	08/03/93	4.8	12	2.6	ND	ND	<1.0	2.6	<1.0
	08/10/93	11	110	7.3	<2.0	<2.0	<2.0	<2.0	<1.0
	11/30/93	5.0	250	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	03/28/94	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	06/22/94	6.3	55	4.5	<1.0	<1.0	<1.0	<1.0	<1.0
	06/22/94 (D)	5.9	48	3.2	<1.0	<1.0	<1.0	<1.0	<1.0
	10/07/94	6.7	36	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/27/95	3	220	<1.0	<1.0	<1.0	<1.0	1.4	NA
	03/29/95	3.7	47	2.0	<1.0	<1.0	<1.0	<1.0	NA
MW-7	08/03/93	3.7	16	12	ND	ND	<1.0	3.4	<1.0
	08/10/93	3.9	8.3	7	<1.0	<1.0	<1.0	<1.0	<1.0
	08/10/93 (D)	3.1	11	13	<1.0	<1.0	<1.0	<1.0	<1.0
	11/30/93	4.9	11	7.7	<1.0	<1.0	<1.0	<1.0	<1.0
	03/28/94	6.6	9.9	6.5	<1.0	<1.0	<1.0	1.1	NA
	06/22/94	5.2	7.1	7.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/07/94	5.8	6	3.6	<1.0	<1.0	<1.0	<1.0	<1.0
	01/27/95	5.4	38	22	1.1	<1.0	<1.0	1.1	NA
	03/29/95	3.8	4.4	3.6	<1.0	<1.0	<1.0	<1.0	NA
MW-8	10/06/94	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-9	10/07/94	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
P-1	10/11/91	10	5	12	ND	ND	ND	ND	<1.0
	03/25/92	13	6.9	41	ND	ND	<1.0	2.4	2
	04/16/93	18	6.0	55	<1.0	<1.0	<1.0	2.4	<1.0
	04/16/93 (D)	16	5.7	57	<1.0	<1.0	<1.0	2.1	<1.0
	08/02/93	14	7.8	49	1.6	ND	<1.0	3.2	<1.0
	12/01/93	20	7.5	69	<1.0	<1.0	<1.0	2.5	<1.0
	03/29/94	22	11	90	2.1	<1.0	<1.0	3	NA
	06/22/94	18	8.4	68	<1.0	<1.0	<1.0	1.7	<1.0
	10/06/94	21	9.5	120	1.9	<1.0	<1.0	2.6	12
	01/27/95	13	3.9	30	<1.0	<1.0	<1.0	<1.0	NA
	01/27/95 (D)	15	4.6	36	<1.0	<1.0	<1.0	<1.0	NA
	03/29/95	13	6.1	51	1.4	<1.0	<1.0	<1.0	NA

Table 2 :
SUMMARY OF GROUND-WATER QUALITY DATA
BTEX (EPA Method 8020/602)
and VOCs (EPA Method 8010/601)
Calmar-City of Industry
LF 2455
All values reported in micrograms per liter (µg/L)

Well Number	Date Sampled	PCE	TCE	1,1-DCE	1,1-DCA	cis-1,2-DCE	1,2-DCA	1,1,1-TCA	Toluene
P-2	05/13/91	20	5.7	ND	ND	ND	ND	ND	<1.0
	10/11/91	14	7	4	ND	ND	ND	ND	<1.0
	03/25/92	7.4	7.5	3.9	ND	ND	<1.0	ND	<1.0
	04/15/93	16	140	58	8.4	12	<1.0	1.1	1.2
	08/03/93	12	93	ND	8.3	9.4	<1.0	1.1	<1.0
	11/30/93	11	210	45	8.3	11	<1.0	<1.0	<1.0
	03/29/94	70	230	57	8.6	<1.0	<1.0	2.4	NA
	06/21/94	44	98	47	6.3	<1.0	<1.0	1.3	<1.0
	06/21/94 (D)	48	91	33	4.4	<1.0	<1.0	1.4	<1.0
	10/06/94	44	130	43	6.4	9.5	<1.0	1.6	<1.0
	01/27/95	150	130	44	4.2	<1.0	<1.0	3.2	NA
	03/29/95	130	110	48	5.6	7.3	<1.0	3.7	NA
P-3	05/13/91	5.2	2.3	ND	ND	ND	ND	ND	<1.0
	10/11/91	7	3	ND	ND	ND	ND	ND	2
	03/25/92	4.9	3.8	1.7	ND	ND	<0.5	0.7	2.7
	04/15/93 (D)	6.7	4.5	<1.0	<1.0	<1.0	<1.0	2.2	<1.0
	04/15/93	6.5	4.3	<1.0	<1.0	<1.0	<1.0	2.1	<1.0
	08/02/93	4	3.2	ND	ND	ND	<1.0	ND	<1.0
	12/01/93	5.7	4.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	03/28/94	8	4.5	1.1	<1.0	<1.0	<1.0	1.1	<1.0
	03/28/94 (D)	8	4.7	1.7	<1.0	<1.0	<1.0	1.1	NA
	06/21/94	5.7	4.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/07/94	6	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/26/95	5	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	03/29/95	2.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
Equipment Blanks	11/30/93	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	06/21/94	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	12/01/93	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/15/93	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2
	04/16/93	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	03/28/95	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	03/29/95	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
Trip Blanks	01/27/95	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

NOTES: < = Designates less than laboratory detection limit.

PCE Tetrachloroethene
TCE Trichloroethene
1,1-DCE 1,1-Dichloroethene
1,1-DCA 1,1-Dichloroethane
cis-1,2-DCE cis-1,2-Dichloroethene
1,2-DCA 1,2-Dichloroethane
1,1,1-TCA 1,1,1-Trichloroethane
ND Not Detected (laboratory detection limits unavailable)
TR Trace, below detection limit (per Camp Dresser & McKee Inc., 1991)
NA Not Analyzed
D Duplicate sample

QA/QC

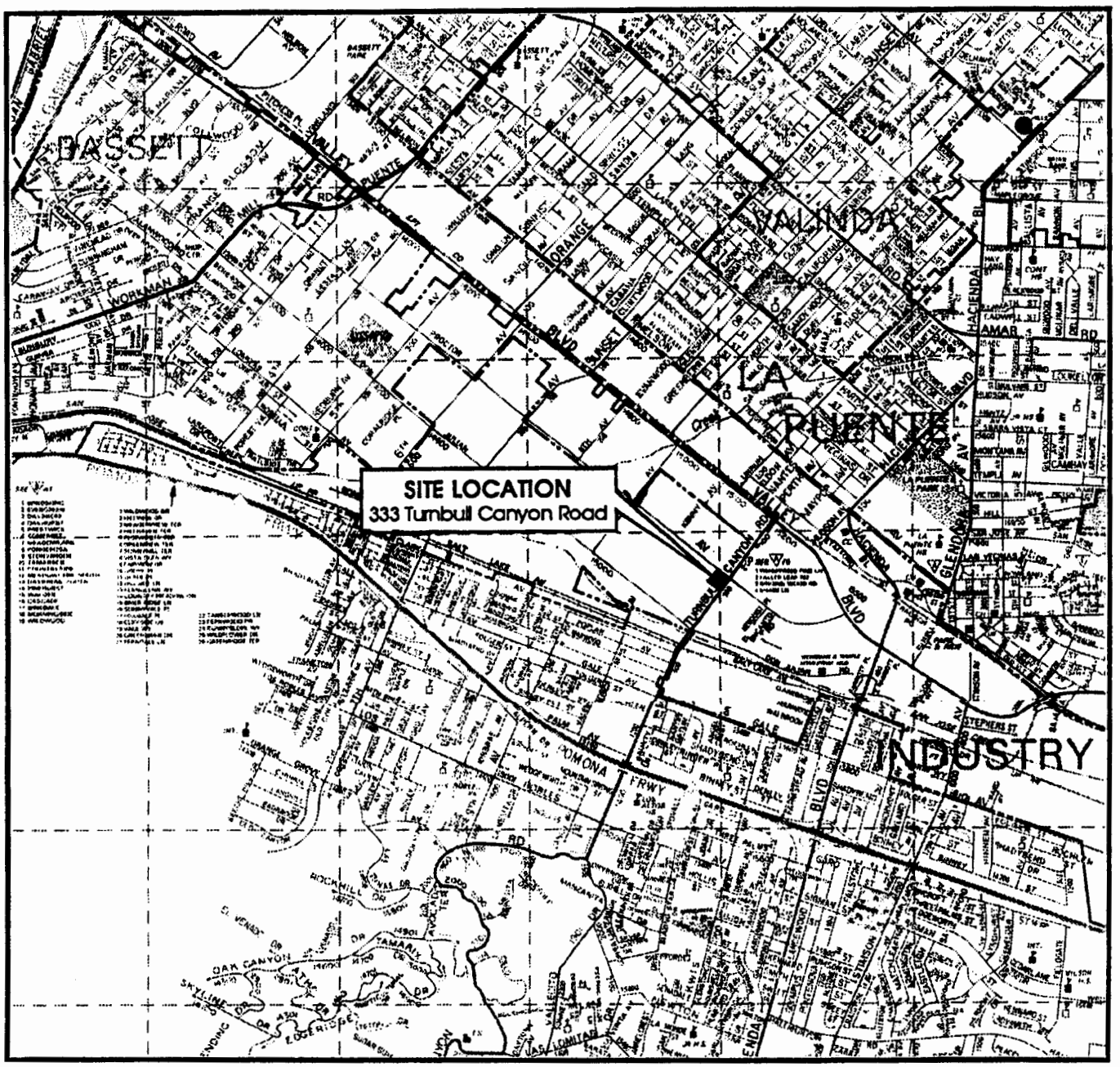
Table 1 :

SUMMARY OF HISTORICAL GROUND-WATER ELEVATION DATA

Calmar-City of Industry

LF 2455

Well Number	Well Elevation (feet-MSL)	Date Sampled	Depth to Water (feet)	Ground-Water Elevation (feet-MSL)	Relative Change (feet)
MW-1	303.32	03/29/89	35.84	267.48	--
		04/29/91	42.65	260.67	-6.81
		05/10/91	42.72	260.60	-0.07
		07/30/91	43.52	259.80	-0.80
		10/11/91	44.24	259.08	-0.72
		03/25/92	43.77	259.55	0.47
	303.16 *	04/15/93	37.01	266.15	6.60
		07/30/93	34.62	268.54	2.39
		11/30/93	32.92	270.24	1.70
		04/28/94	31.11	272.05	1.81
		07/27/94	30.89	272.27	0.22
		10/06/94	31.31	271.85	-0.42
		01/26/94	30.97	272.19	0.34
MW-2	303.29	03/29/89	35.14	268.15	--
		04/29/91	41.38	261.91	-6.24
		05/10/91	41.45	261.84	-0.07
		07/30/91	42.12	261.17	-0.67
		10/11/91	42.67	260.62	-0.55
		03/25/92	42.21	261.08	0.46
	303.15 *	04/15/93	36.10	267.05	5.97
		07/30/93	33.86	269.29	2.24
		11/30/93	32.22	270.93	1.64
		04/28/94	30.42	272.73	1.80
		07/27/94	30.21	272.94	0.21
		10/06/94	30.65	272.50	-0.44
		01/26/94	30.29	272.86	0.36
MW-3	302.67	03/29/89	35.01	267.66	--
		04/29/91	41.67	261.00	-6.66
		05/10/91	41.72	260.95	-0.05
		07/30/91	42.50	260.17	-0.78
		10/11/91	43.11	259.56	-0.61
		03/25/92	42.50	260.17	0.61
	302.36 *	04/15/93	35.92	266.44	6.27
		07/30/93	33.71	268.65	2.21
		11/30/93	NA	--	--
		04/28/94	30.11	272.25	3.60
		07/27/94	29.92	272.44	0.19
		10/06/94	30.34	272.02	-0.42
		01/26/94	29.46	272.90	0.88



MAP SOURCE: Thomas Bros. Guide, Los Angeles County, California, p. 48,85, 1991.

N

SCALE

0 1/4 1/2 1 MILE

Figure 1 : SITE VICINITY

Project No. 2455.02
Caimar-City of Industry

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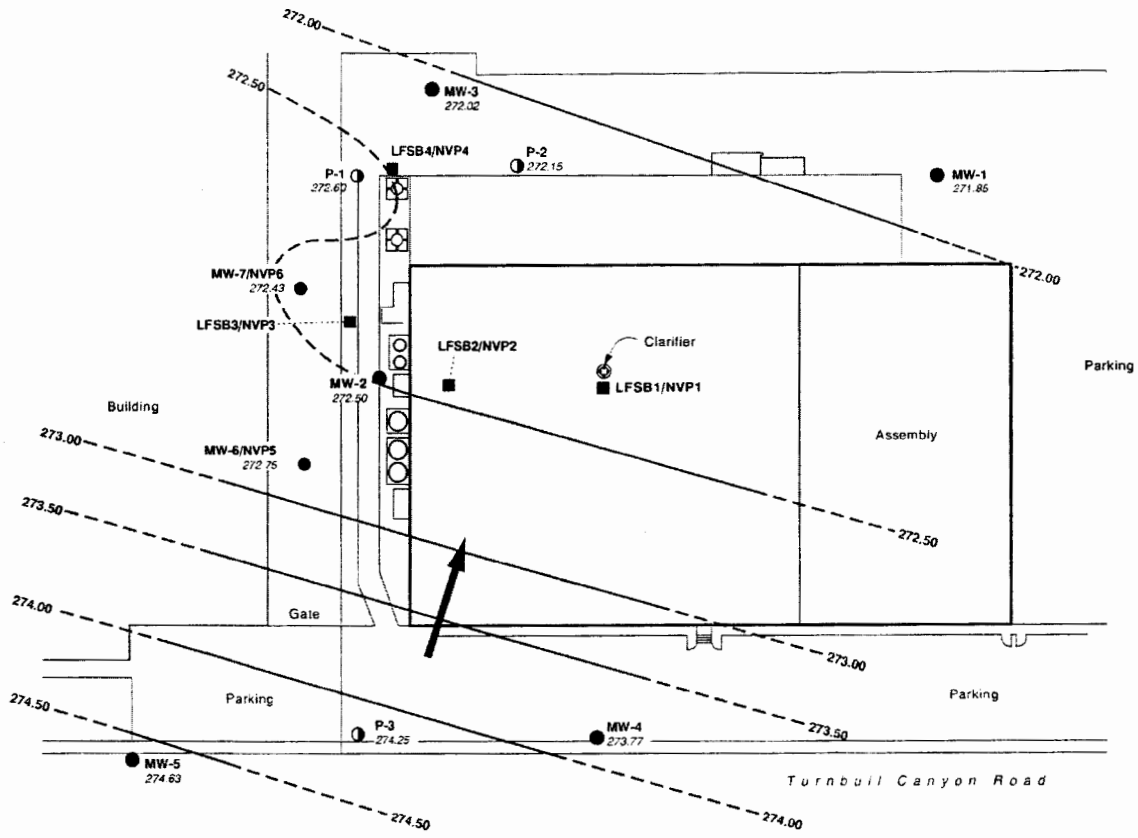
111991DEF/scj

2455-05



EXPLANATION

- Monitoring Well Location
- Piezometer Location
- Soil Boring Location
- Ground-Water Elevation Contour (ft.-MSL) Dashed Where Inferred
- 274.63 Ground-Water Elevation (ft.-MSL)
- Approximate Horizontal Ground-Water Flow Direction

SCALE

0 40 80 160 FEET

1 INCH = 80 FEET

Figure 2 :

GROUND-WATER ELEVATION CONTOURS
OCTOBER 6, 1994

Project No. 2455
Calmar

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041395DEF.2C1

2455-61

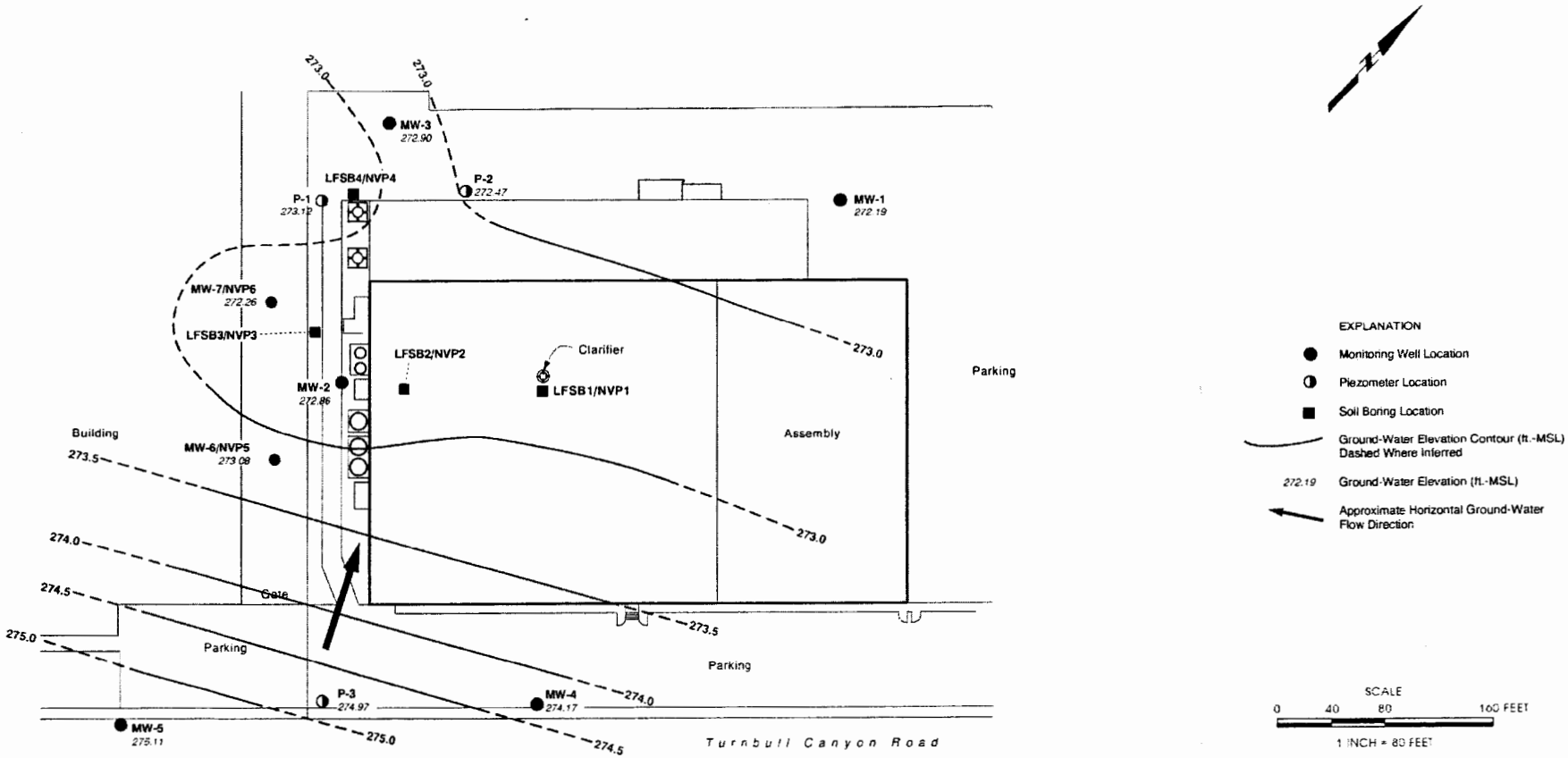

Figure 3 :

GROUND-WATER ELEVATION CONTOURS
JANUARY 26, 1995

Project No. 2455
Calmar

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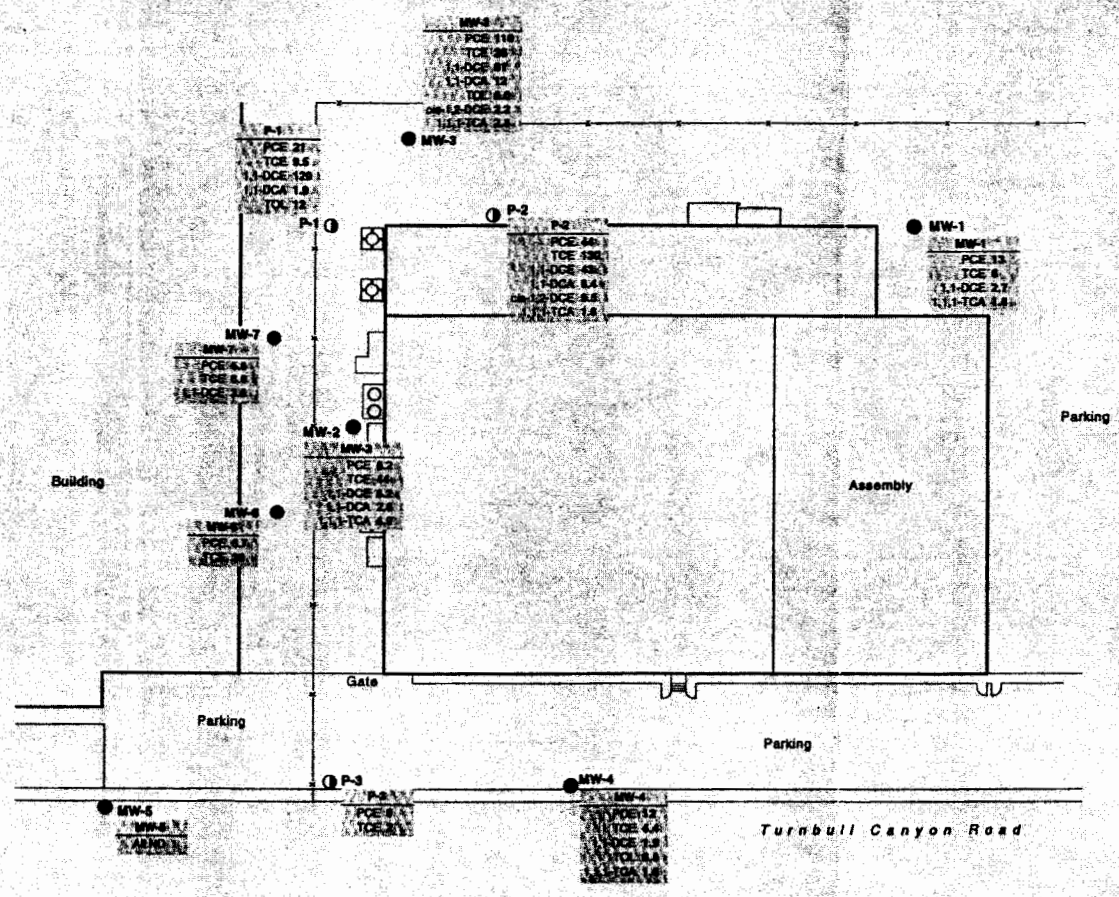
041395DEF/sc

2455-02



EXPLANATION

- Monitoring Well Location
- Piezometer Location
- Soil Boring Location
- Ground-Water Analytical Data Showing Volatile Organic Compounds (VOCs) Constituent and Concentration in micrograms per liter (µg/L)

PCE	Tetrachloroethene
TCE	Trichloroethene
1,1-DCE	1,1-Dichloroethene
1,1-DCA	1,1-Dichloroethane
TOL	Toluene
cis-1,2-DCE	cis-1,2-Dichloroethene
1,1,1-TCA	1,1,1-Trichloroethane
ND	Volatile Organic Compounds (VOCs) and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) Not Detected Above Laboratory Detection Limit

NOTES: All results reported in micrograms per liter (µg/L).
All samples analyzed using EPA Methods 8010 and 8020.

SCALE
0 40 80 160 FEET
1 INCH = 80 FEET

Figure 4 :

SUMMARY OF VOCs AND BTEX DETECTED IN GROUND-WATER SAMPLES OCTOBER 6 & 7, 1994

Project No. 2455
Calmar

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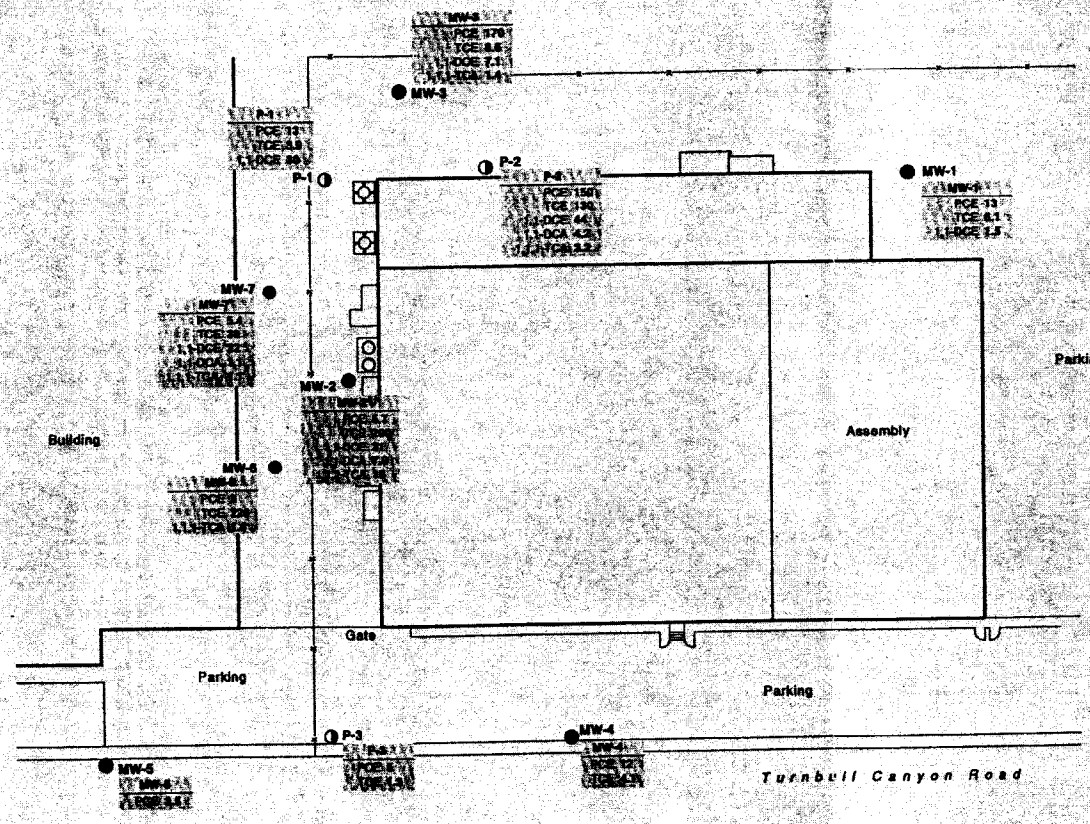
041395DEF/sc1

2455-63



EXPLANATION

- ● Monitoring Well Location
- ◑ Piezometer Location
- ■ Soil Boring Location

P-1 PCE 33 — Ground-Water Analytical Data Showing Volatile Organic Compounds (VOCs) Constituent and Concentration in micrograms per liter (µg/L)

PCE	Tetrachloroethene
TCE	Trichloroethene
1,1-DCE	1,1-Dichloroethene
1,1-DCA	1,1-Dichloroethane
1,1,1-TCA	1,1,1-Trichloroethane
ND	Volatile Organic Compounds (VOCs) and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) Not Detected Above Laboratory Detection Limit

NOTES: All results reported in micrograms per liter (µg/L).
All samples analyzed using EPA Methods 8010 and 8020.

SCALE
0 40 80 160 FEET
1 INCH = 80 FEET

Figure 5 :

SUMMARY OF VOCs AND BTEX DETECTED IN GROUND-WATER SAMPLES JANUARY 26 & 27, 1995

Project No. 2455
Calmar

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041395DEF/sc1

2455-64

APPENDIX A

Levine-Fricke Field Protocols

APPENDIX A

LEVINE-FRICKE FIELD PROTOCOLS

Ground-Water Monitoring Well Development and Sampling

All equipment used to develop or sample the wells was washed in a laboratory-grade detergent and/or steam cleaned prior to use in each monitoring well.

Development of ground-water monitoring wells prior to sampling was conducted to remove sediments from the well boring and enhance communication with the surrounding formation. Development was conducted using one or a combination of the following techniques: overpumping, surging, swabbing, and bailing. The ground-water temperature, specific conductivity, turbidity, and pH were monitored during the development process.

Prior to ground-water sampling, approximately 4 to 10 casing volumes were purged from each well. Purging was conducted using an electric submersible pump. The ground-water temperature, specific conductance, turbidity, and pH were measured throughout the purging process. These ground-water parameters were allowed to reach relative stabilization before ground-water samples were collected for the purpose of collecting a representative ground-water sample.

Purged ground water was collected in DOT-approved drums for storage on site, or stored in an on-site PolyTank.

Ground-water samples were collected from all wells using a Teflon disposable bailer suspended by a clean (new) length of rope. Ground-water samples were decanted from the bailer into appropriate laboratory-supplied 40-milliliter vials using a bottom decanting pep-cock device. The containers were sealed, labeled, and placed in a chilled cooler for delivery to the analytical laboratory. Strict chain-of-custody protocol was followed throughout the sample handling process.

Measurement of Ground-Water Elevation

After the ground-water monitoring were installed, the top of each well casing was surveyed for vertical and horizontal control by a licensed surveyor. Elevation was surveyed to the nearest 0.01 foot mean sea level. Horizontal control was tied to a United States Geological Survey or Los Angeles County bench mark.

An electronic water-level meter was used to measure the depth to ground water to the nearest 0.01 foot in each well. Ground-water elevations were calculated and used to construct ground-water elevation contour maps from which the direction of ground-water flow and gradient could be evaluated.