CITY OF EMERYVILLE
REDEVELOPMENT AGENCY
2200 POWELL STREET, SUITE 1200
EMERYVILLE, CALIFORNIA 94608
(510) 596-4350

May 11, 1992

Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, CA 94621

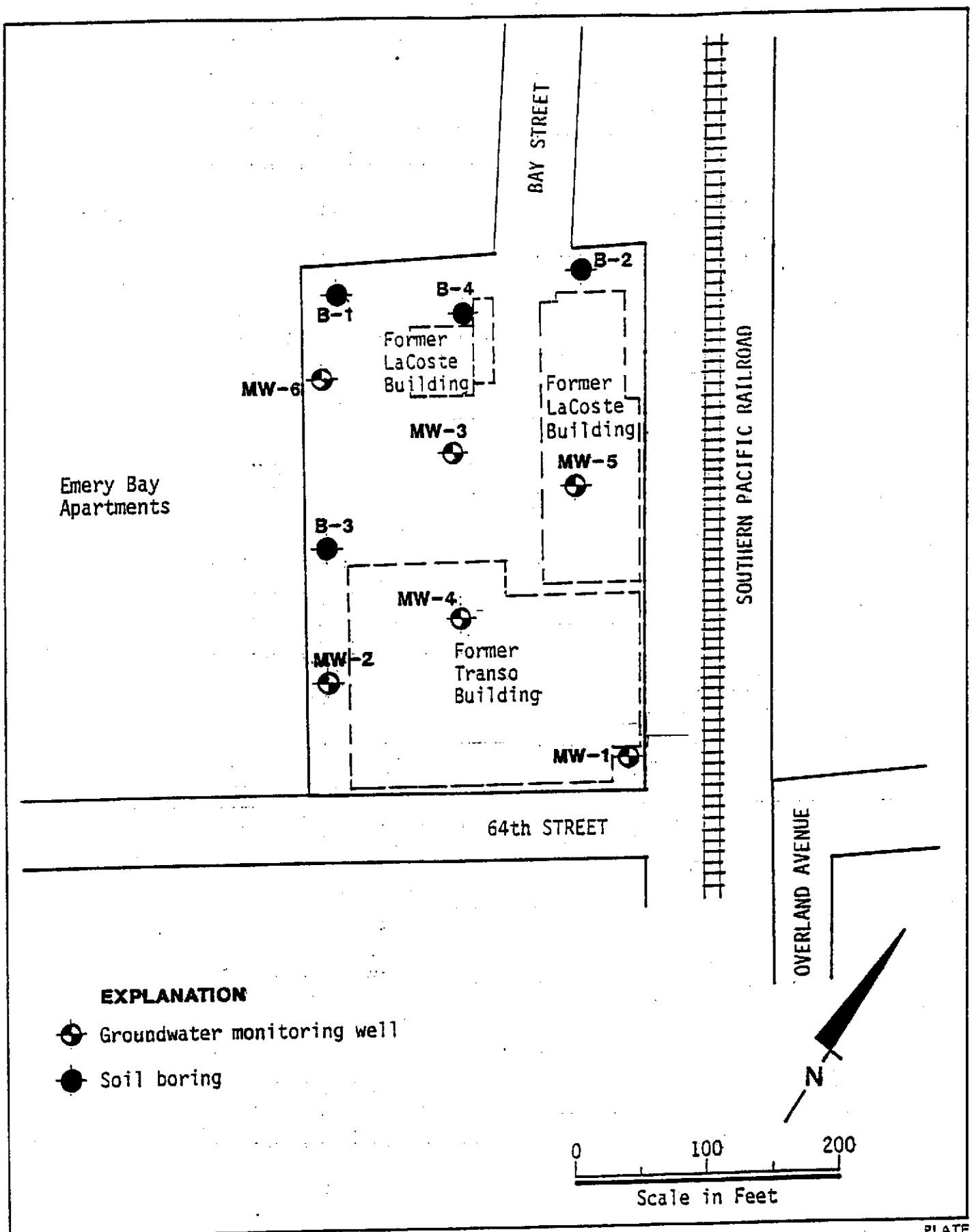
Please find enclosed a copy of the report entitled "Results of Groundwater Monitoring: Transo/LaCoste Site - (Parcels 4-2 and 4-3). In the report, Harding Lawson Associates (HLA) recommends that the four remaining monitoring wells be destroyed prior to the proposed development of the site. HLA is currently preparing a Hazardous Waste Management Plan to be submitted to the State Department of Toxic Substances Control.

Please contact me at (510)596-4350 if you have any questions.

Sincerely,

IGNACIO DAYRIT
Projects Coordinator

IG09:BS-TXC.LTR



Harding Lawson Associates
Engineering and Environmental Services

Soil Sampling Locations
Transo/La Coste Site
Emeryville, California

PLATE **2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
YC	2421,021.03	DBE	06/07/91	

A Report Prepared for

City of Emeryville Redevelopment Agency
2200 Powell Street, Suite 1200
Emeryville, California 94608

RESULTS OF GROUNDWATER MONITORING TRANSO/LACOSTE SITE (PARCELS 4-2 AND 4-3) EMERYVILLE, CALIFORNIA

HLA Job No. 2421,021.03

by

Doreen P. Meyer
Environmental Specialist

Stephen J. Osborne
Geotechnical Engineer

Harding Lawson Associates
1355 Willow Way, Suite 109
Concord, California 94520
510/687-9660

May 4, 1992

INTRODUCTION

This report presents the results of quarterly water level measurements and annual groundwater sampling by Harding Lawson Associates (HLA) for Parcels 4-2 and 4-3 (the Transo/LaCoste Site) in Emeryville, California (Plate 1). The site is shown on Plate 2. Results presented in this report are for the second, third, fourth, and fifth quarters of a five-quarter monitoring program that began in March, 1991. For the second, third, and fourth quarters, groundwater from MW-6 was sampled for lead, and water level measurements were taken in all of the monitoring wells. During the fifth quarter, HLA measured water levels and collected groundwater samples from all wells. In addition, because Bay Street will be extended across the eastern portion of the site to 64th Street, HLA abandoned MW-1 and MW-5. Field procedures used are described below, and results of chemical analyses are compared with previous chemical data for the site.

BACKGROUND

The site consists of two parcels, Parcel 4-2, located at 1600 64th Street, and Parcel 4-3, at 6401 Bay Street. Parcel 4-2 was formerly owned by the Transo Envelope Company (Transo), and Parcel 4-3 by the LaCoste Meat Company (LaCoste). In 1990, the City of Emeryville Redevelopment Agency (City) purchased the site as part of the Bay Street-Shellmound Street extension project.

HLA has conducted several studies at the site, including a Preliminary Hazardous Materials Site Assessment (report dated December 28, 1989) and a hazardous materials investigation (report dated October 26, 1990). Site investigation activities included installation of six on-site monitoring wells and drilling of three soil borings (Plate 2). Soils encountered during our investigation indicate that the site contains fill ranging from a depth of approximately five feet (B-2 and MW-1) along the eastern property line to at least 16.5 feet (the maximum depth explored) in the middle of the western side of the parcel (B-3). The fill primarily consists of lean clay, with gravel, sand and silt distributed throughout. Native soils underlying the fill consist of varying layers of clay, silt, sand, and peat.

Soil and water samples were collected from the borings and monitoring wells and analyzed for a broad range of chemical parameters. Chemical results indicated detectable concentrations of petroleum hydrocarbons in soil and water samples, as well as elevated concentrations of lead and zinc. The hydrocarbons found were primarily in the oil and grease range. Results of analyses on soil samples for oil and grease, lead, and zinc are summarized in Table 1. In groundwater samples, only benzene exceeded Maximum Contaminant Levels (MCLs) or Drinking Water Action Levels

(DWALs)* (as shown on Table 2). HLA recommended that the City continue groundwater monitoring and incorporate in-place capping of the soil into final development plans for the site.

On March 26, 1991, the City authorized HLA to commence with quarterly groundwater monitoring over five quarters, including measurement of the hydraulic gradient, annual groundwater sampling for chemical analysis, and annual reporting.

In HLA's first annual monitoring report (dated June 19, 1991), HLA recommended quarterly monitoring of MW-6 for lead as the sample for this well was above the MCL for lead.

DESTRUCTION OF MONITORING WELLS

On March 16, 1992, to make way for the extension of Bay street across the site, monitoring wells MW-1 and MW-5 were decommissioned. The wells were overdrilled to their total depth with an eight-inch-diameter auger. The casing was then removed from the well and the boring was filled to grade with grout using the tremie method.

GROUNDWATER MONITORING

On August 8, and November 21, 1991, and February 6, 1992, HLA collected groundwater samples from MW-6 and measured water

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* MCLs are enforceable standards specified by the U.S. Environmental Protection Agency and California Department of Health Services (DHS). DWALs are guidance established by the DHS.

levels in all six wells. On April 1, 1992, HLA collected groundwater samples and measured water levels in wells MW-2 through MW-4 and MW-6.

Before sampling, we checked for the presence of separate-phase floating hydrocarbon product in all wells, using an oil-water interface probe (Marine Moisture Control Co. Model D-2401-2VI). The interface probe was also used to measure water levels. We then purged at least three casing volumes from each well while monitoring temperature, pH and conductivity. After those parameters stabilized, groundwater samples were collected with a clean stainless steel bailer, and decanted directly into laboratory-prepared containers. The samples were labeled and placed into an ice-chilled cooler for transportation, under chain-of-custody, to a state-certified chemical testing laboratory. Between wells, all sampling and purging equipment was decontaminated in an Alconox solution, and rinsed with deionized water. Purged groundwater was stored on site in 55-gallon drums. On the basis of analytical results, HLA arranged for off-site disposal of the water at a permitted oil/water recycling facility.

CHEMICAL TESTING

Groundwater samples were sent to Sequoia Analytical Laboratories, a state-certified chemical laboratory, in Concord, California. The samples from MW-6 taken on August 8 and November

21, 1991, and February 6, 1992 were analyzed for lead using USEPA Test Method 7421. The April 1, 1992 samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (USEPA Test Method 8015, modified); benzene, toluene, ethylbenzene, and xylenes (BTEX); (USEPA Test Method 8020) total oil and grease (TOG)(Standard Method 5520); and lead and zinc (USEPA Test Method 7950). The results of chemical analyses are presented in Table 2, along with groundwater data from the preceding phases of site assessment. Laboratory reports for water analyses are presented in the Appendix.

GROUNDWATER GRADIENT

Water level data are presented in Table 3. Water levels in each of the wells are consistent with levels measured at the same time last year, although they did drop during the quarters in between. Our calculations indicate that the hydraulic gradient (Plate 3) is westerly, which agrees with previous measurements.

DISCUSSION OF CHEMICAL RESULTS

The results of chemical analyses for the April 1992 sampling indicated no detectable concentrations of BTEX or TPH as gasoline in groundwater samples from MW-2, MW-3, or MW-4. MW-6 however, had 0.00073 parts per million (ppm) benzene and 0.00037 ppm total xylenes. Decreased TOG concentrations were observed in all of the wells. Concentrations of lead and zinc in groundwater

samples from the wells are either non-detectable or are below the respective MCLs, with the exception of lead in water from MW-6 during three sampling events. In April, August, and November of 1991, lead concentrations in that well ranged between 0.065 and 0.11 ppm. The MCL for lead is 0.05 ppm. Data for February and April, 1992, indicate that lead concentrations have decreased in MW-6 to 0.016 ppm, which is below the MCL.

CONCLUSIONS AND RECOMMENDATIONS

The hydraulic gradient beneath the site continues to be towards the west. Results of chemical analyses for the most recent monitoring period (April 1992) indicate that concentrations of all chemicals tested for are below the respective MCLs. Since groundwater monitoring began in December 1989, the only chemicals which exceeded MCLs are benzene in water from MW-4 on one sampling occasion (March 1990), and lead in water from MW-6 during three sampling events (April, August, and November 1991). Concentrations of TOG in water from MW-2, MW-4, and MW-6 ranged from 5.0 to 49.0 ppm.

HLA recommends that the four remaining monitoring wells be destroyed prior to development of the site. HLA understands that a residential development is planned for the site and an adjacent 1.5-acre lot to the north (part of the Bay Center site), and that construction is scheduled to begin during the summer of 1992.

HLA is currently preparing a Hazardous Waste Management Plan for the site and the 1.5-acre portion of the adjacent Bay Center site which will describe planned remediation activities for capping contaminated fill material on site. After development is completed, HLA recommends that continued groundwater monitoring at the Transo/LaCoste site be coordinated with groundwater monitoring activities at the adjacent Bay Center site. This continued monitoring may require the installation of new groundwater monitoring wells, as described in the forthcoming Hazardous Waste Management Plan.

LIST OF TABLES

LIST OF ILLUSTRATIONS

APPENDIX

Table 1. Concentrations of Selected Compounds in Soil Samples
December 1989 and March 1990 Investigations
(reported in parts per million [ppm])

		TPH*	TOG*	Metals	
Location	Sample Depth (ft)	Motor Oil (ppm)	(ppm)	Lead (ppm)	Zinc (ppm)
B-1	5.5	640	--	210	820
B-2	5.5	<20	--	5	27
B-3	3.0	--	8.0	17	31
B-3	6.0	--	250	2,600	370
B-3	15.0	--	120,000	5,700	1,900
B-4	2.5	--	1,200	650	2,800
B-4	6.0	--	5,000	24	73
B-4	11.0	--	31	25	140
MW-1	5.5	80	--	19	26
MW-2	5.5	280	--	120	90
MW-3	5.0	640	--	220	440
	10.5	3,600	--	83	180
MW-4	5.5	--	460	500	530
	10.5	--	3,000	17	100
	15.50	--	200	17	38
MW-5	3.0	--	22	8.2	35
	5.5	--	230	100	190
	13.00	--	<4.0	7.2	65
MW-6	3.0	--	19	4.0	25
	6.0	--	1,000	72	92
	12.0	--	250	260	1,000
**TTLC		--	--	--	--

*TPH = Total petroleum hydrocarbons using modified EPA Test Method 5030/3550/8015 (purge and trap or extraction, followed by gas chromatography).

TOG = Total Oil and Grease using USEPA Test Method 418.1

**TTLC = Regulatory Standards for Zinc and Lead are the Total Threshold Limit Concentration (TTLC) listed in Title 22,Section 66699 of the California Code of regulations.

Table 2. Concentrations of Selected Compounds in Groundwater Samples
(reported in parts per million [ppm])

Harding Lawson Associates

		VOCs*				TPH*	TOG*	Metals	
Location	Date Sampled	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)	Gasoline (ppm)	Oil & Grease (ppm)	Lead (ppm)	Zinc (ppm)
MW-1	12/29/89	<0.005	<0.005	<0.005	<0.01	0.1	<0.01	<0.01	0.028
	03/24/90	<0.0003	<0.0003	<0.0003	0.00032	0.085	<0.01	<0.005	0.069
	04/03/91	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	<5.0	<0.005	<0.01
	04/01/92	NT*	NT*	NT*	NT*	NT*	NT*	NT*	NT*
MW-2	12/29/89	<0.005	<0.005	<0.005	<0.01	0.1	12	<0.01	0.015
	03/24/90	<0.0003	<0.0003	<0.0003	0.00042	0.05	4.2	<0.005	0.1
	04/03/91	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	47	0.007	<0.01
	04/01/92	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	5.0	0.026	0.13
MW-3	12/29/89	<0.005	<0.005	<0.005	<0.01	<0.1	2	<0.01	0.078
	03/24/90	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	4.8	<0.005	0.25
	04/03/91	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	5.8	<0.005	<0.01
	04/01/92	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	<5.0	<0.005	0.16
MW-4	03/24/90	0.004	0.002	<0.0003	0.00052	0.04	4.2	<0.005	0.16
	04/03/91	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	87	<0.005	<0.01
	04/01/92	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	49	<0.005	0.090
MCLs**		0.001	0.1	0.68	1.75	NE	NE	0.05	5

* VOCs = Volatile organic compounds using EPA Test Method 8240 (12/29/89), and EPA Test Method 8020 (3/24/90 and 4/3/91).
TPH = Total petroleum hydrocarbons using EPA Test Method 8015 [modified]/5030.
TOG = Total Oil and Grease by Standard Method 503E (12/29/89), USEPA Method 418.1 (3/24/90), and Standard Method 5520 (4/3/91).

** Maximum contaminant levels are specified by the California Department of Health Services (DHS) and U.S. Environmental Protection Agency; where MCLs have not been established, drinking water action levels (DWALs) are listed.

NE = Not established NT = Not tested NT* = Not tested, well decommissioned

Table 2. Continued

Harding Lawson Associates

Location	Date Sampled	VOCs* Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)	TPH* Gasoline (ppm)	TOG* Oil & Grease (ppm)	Metals Lead (ppm)	Zinc (ppm)
MW-5	03/24/90	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	<0.1	0.005	0.068
	04/03/91	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	10	<0.005	<0.01
	04/01/92	NT*	NT*	NT*	NT*	NT*	NT*	NT*	NT*
MW-6	03/24/90	0.00041	<0.0003	<0.0003	0.0013	0.042	12	0.0066	0.15
	04/03/91	<0.0003	<0.0003	<0.0003	<0.0003	<0.03	28	0.11	0.36
	08/08/91	NT	NT	NT	NT	NT	NT	0.065	NT
	11/21/91	NT	NT	NT	NT	NT	NT	0.075	NT
	02/06/92	NT	NT	NT	NT	NT	NT	0.020	NT
	04/01/92	0.00073	<0.0003	<0.0003	0.00037	<0.03	13	0.016	0.11
MCLs**		0.001	0.1	0.68	1.75	NE	NE	0.05	5

* VOCs = Volatile organic compounds using EPA Test Method 8240 (12/29/89), and EPA Test Method 8020 (3/24/90 and 4/3/91).
TPH = Total petroleum hydrocarbons using EPA Test Method 8015 [modified]/5030.
TOG = Total Oil and Grease by Standard Method 503E (12/29/89), USEPA Method 418.1 (3/24/90), and Standard Method 5520 (4/3/91).

** Maximum contaminant levels are specified by the California Department of Health Services (DHS) and U.S. Environmental Protection Agency; where MCLs have not been established, drinking water action levels (DWALs) are listed.

NE = Not established NT = Not tested NT* = Not tested, well decommissioned

Table 3. Groundwater Surface Elevations in Monitoring Wells

Well No.	Date Measured	Top of Casing Elevation* (feet)	Depth to Groundwater (feet)	Groundwater Surface Elevation + (feet)
MW-1	01/05/90	12.36	6.16	6.20
	04/10/90		6.32	6.04
	04/03/91		4.74	7.62
	08/08/91		6.62	5.74
	11/21/91		6.16	6.20
	02/06/92		5.72	6.64
	04/01/92		--	--
MW-2	05/05/90	12.73	6.87	5.86
	04/10/90		6.65	6.08
	04/03/91		5.48	7.25
	08/08/91		6.42	6.31
	11/21/91		6.03	6.70
	02/06/92		6.12	6.61
	04/01/92		5.63	7.10
MW-3	01/05/90	10.60	4.73	5.87
	04/10/90		4.59	6.01
	04/03/91		4.00	6.60
	08/08/91		4.81	5.79
	11/21/91		4.39	6.21
	02/06/92		4.05	6.55
	04/01/92		3.55	7.05
MW-4	04/10/90	16.12	9.76	6.36
	04/03/91		8.43	7.69
	08/08/91		9.61	6.51
	11/21/91		9.15	6.97
	02/06/92		9.13	6.99
	04/01/92		8.62	7.50

* Elevations are relative to NGVD Benchmark.

\+ Groundwater Surface Elevations = Top of casing elevation >groundwater depth below top of casing.

-- No water level measurements; well was destroyed in March 1992.

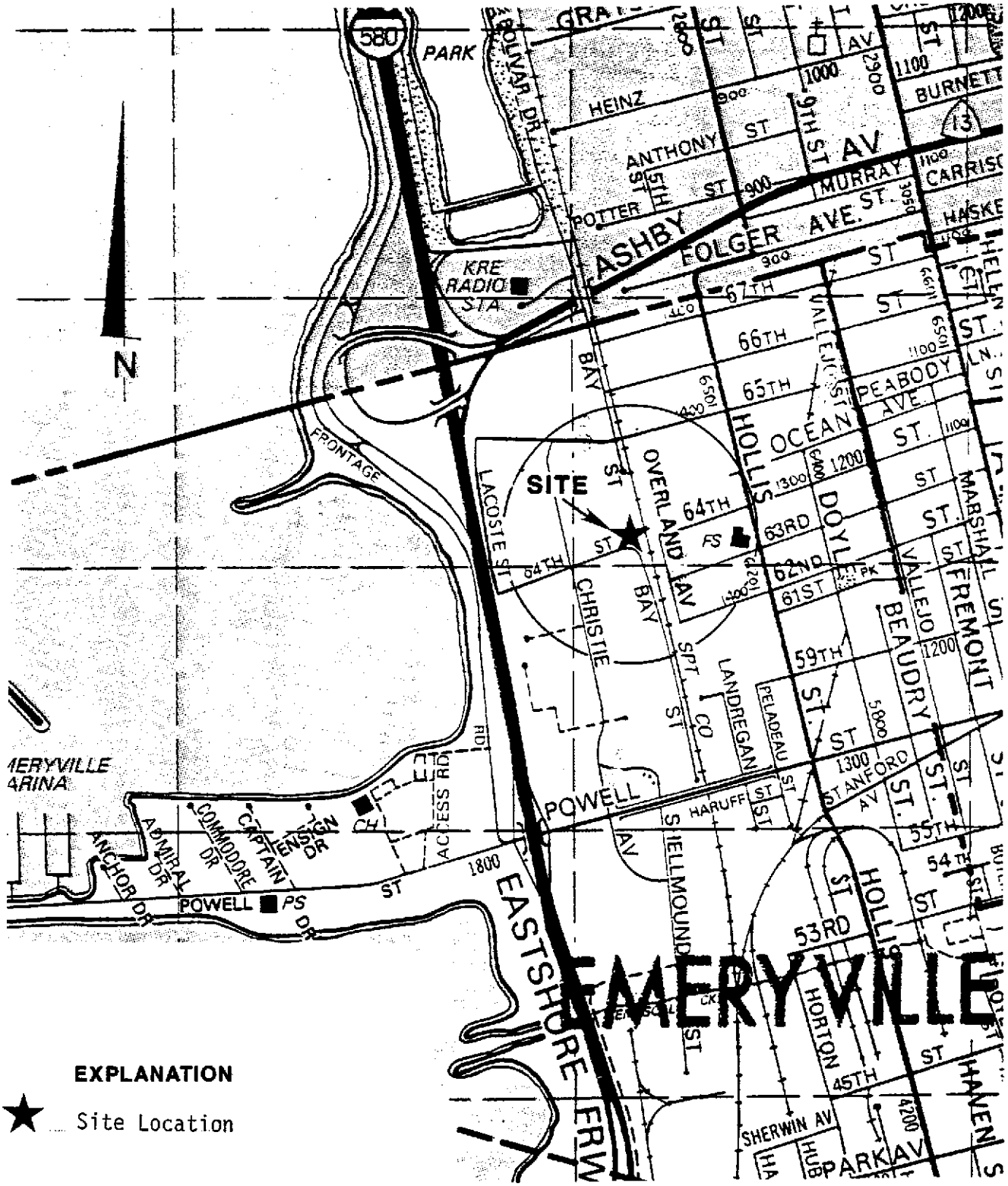
Table. 3 (continued)

Well No.	Date Measured	Top of Casing Elevation* (feet)	Depth to Groundwater (feet)	Groundwater Surface Elevation + (feet)
MW-5	04/10/90	11.70	5.54	6.16
	04/03/91		3.80	7.90
	08/08/91		5.74	5.96
	11/21/91		5.34	6.36
	02/06/92		4.93	6.77
	04/01/92		--	--
MW-6	04/10/90	12.46	6.58	5.88
	04/03/91		6.00	6.46
	08/08/91		6.67	5.79
	11/21/91		6.55	5.91
	02/06/92		6.33	6.13
	04/01/92		6.10	6.36

* Elevations are relative to NGVD Benchmark.

\+ Groundwater Surface Elevations = Top of casing elevation >groundwater depth below top of casing.

-- No water level measurements; well was destroyed in March 1992.



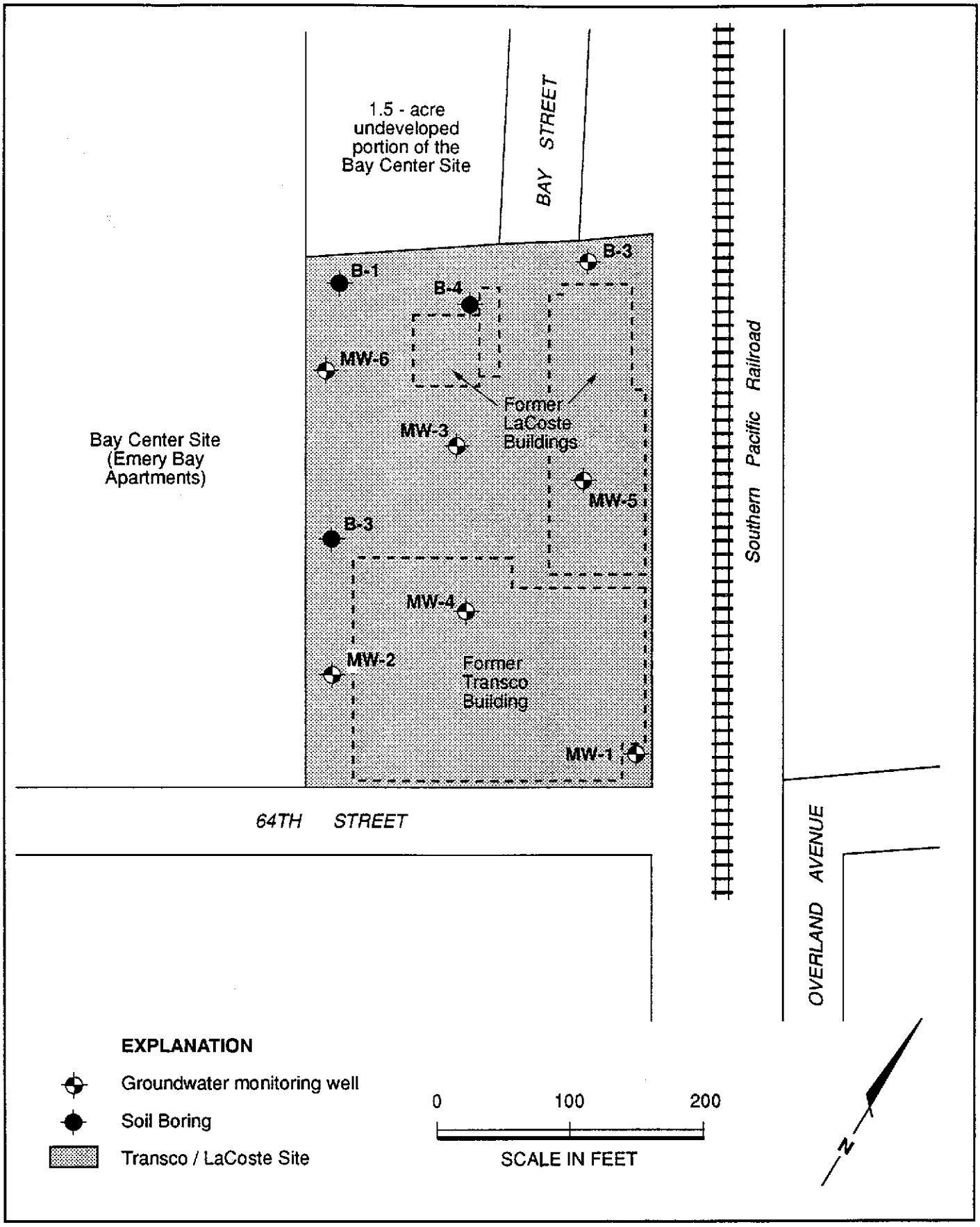
REFERENCE: Thomas Bros. Maps

PLATE 1

Harding Lawson Associates
Engineering and Environmental Services

Vicinity Map
Transo/LaCoste Site
Emeryville, California

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
YC	2421,021.03	TJM	5/91	

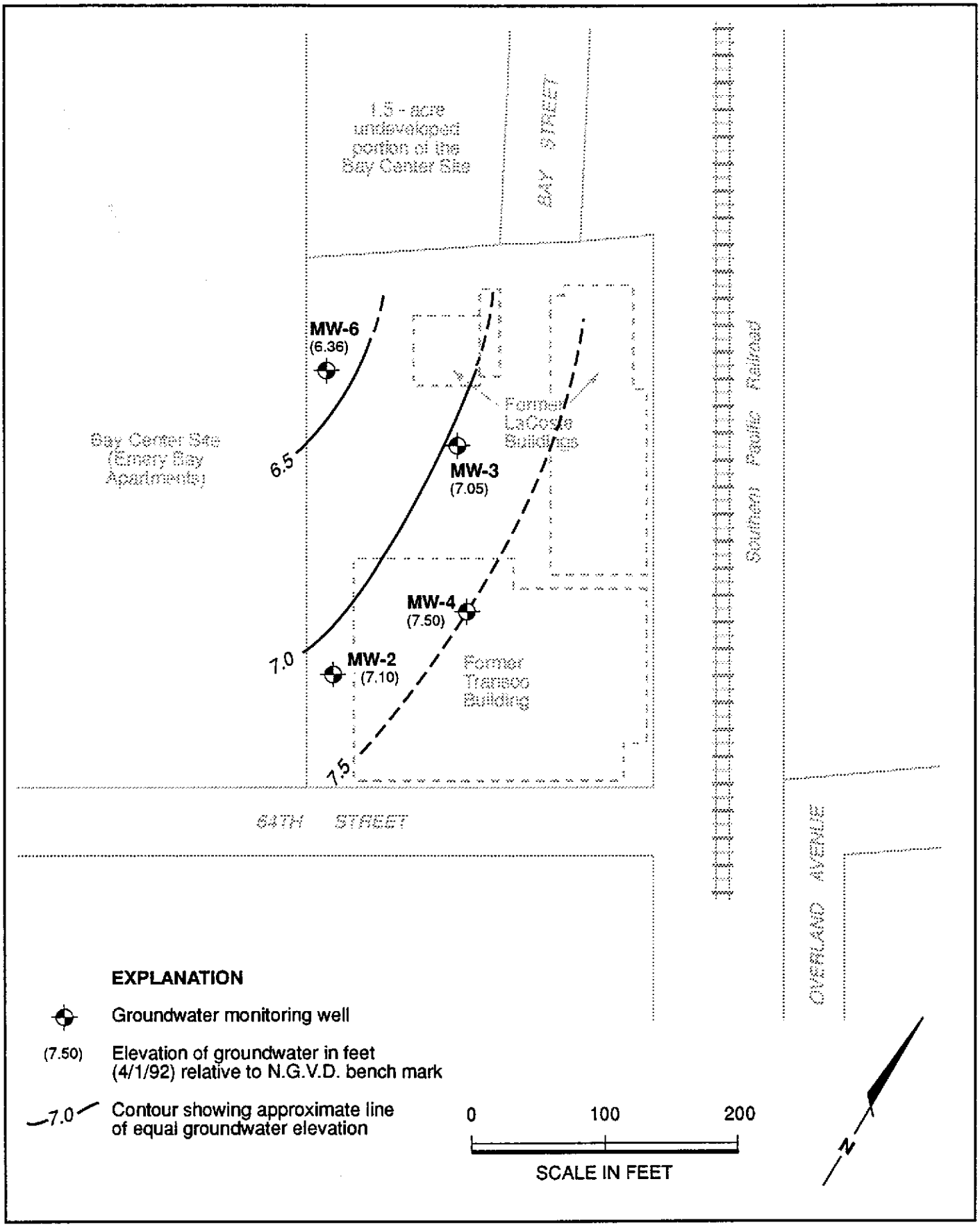


Harding Lawson Associates
Engineering and Environmental Services

Soil Sampling Locations
Transo / LaCoste Site
Emeryville, California

PLATE
2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
RHC	2421,021.03		4/28/92	



Harding Lawson Associates
Engineering and Environmental Services

Potentiometric Surface Map
Transo / LaCoste Site
Emeryville, California

PLATE
3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
RHC	2421,021.03	DM	05/06/92	

APPENDIX

LABORATORY ANALYTICAL REPORTS

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Harding Lawson Associates (Conco	Client Project ID:	2421021.03	Sampled:	Aug 8, 1991
1355 Willow Way, Suite 109	Sample Descript:	Water, MW-6	Received:	Aug 8, 1991
Concord, CA 94520			Analyzed:	Aug 12, 1991
Attention: Dan Erbes	Lab Number:	108-0426	Reported:	Aug 19, 1991

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Lead	0.0050	0.065

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1080426.HAO <1>

SEQUOIA ANALYTICAL
1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Harding Lawson Associates (Conco Client Project ID: 2421021
1355 Willow Way, Suite 109
Concord, CA 94520
Attention: Dan Erbes QC Sample Group: 108-0426 Reported: Aug 19, 1991

QUALITY CONTROL DATA REPORT

ANALYTE
Lead

Method:	EPA 7421
Analyst:	N. Herrera
Reporting Units:	mg/L
Date Analyzed:	Aug 12, 1991
QC Sample #:	108-0157
Sample Conc.:	N.D.
Spike Conc. Added:	0.10
Conc. Matrix Spike:	0.086
Matrix Spike % Recovery:	86
Conc. Matrix Spike Dup.:	0.087
Matrix Spike Duplicate % Recovery:	87
Relative % Difference:	1.2

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

$$\text{\% Recovery:} \quad \frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference:} \quad \frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$$

Harding Lawson Associates
1355 Willow Way, Suite 109
Concord, California 94520
415/687-9660
Telecopy: 415/687-9673

CHAIN OF CUSTODY FORM

Lab: SEQUOIA

Samplers: DPM

Job Number: 2421,021.03

Name/Location: TRANSO/LACOSTE

Project Manager: D. ERBES

Recorder: D Meyers (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	LEAD
22	X				1			MW-6			91	08	08	1410	UNFILTERED SAMPLE — FILTER IN LAB A.S.A.P. Std. Turnaround							X

108042G

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

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) D Meyers	RECEIVED BY: (Signature) V. A. Ferrera	DATE/TIME 8/8 2:56
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
METHOD OF SHIPMENT		

6533

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

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Harding Lawson Associates	Client Project ID:	2421,011.03, Transo/LaCoste	Sampled:	Nov 21, 1991
1355 Willow Way, Suite 109	Sample Descript:	Water, MW-6	Received:	Nov 21, 1991
Concord, CA 94520			Analyzed:	Dec 16, 1991
Attention: Doreen Meyer	Lab Number:	111-1094	Reported:	Dec 17, 1991

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Lead	0.0050	0.075

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Scott A. Chieffo
Project Manager

Please Note:
revised report: 12/17/91

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Harding Lawson Associates
1355 Willow Way, Suite 109
Concord, CA 94520
Attention: Doreen Meyer

Client Project ID: 2421,011.03, Transo/LaCoste

QC Sample Group: 111-1094

Reported: Dec 9, 1991

QUALITY CONTROL DATA REPORT

ANALYTE
Lead

Method:	EPA 239.2
Analyst:	K. Anderson
Reporting Units:	mg/L
Date Analyzed:	Dec 17, 1991
QC Sample #:	111-1094

Sample Conc.:	0.075
Spike Conc. Added:	0.20
Conc. Matrix Spike:	0.31
Matrix Spike % Recovery:	118
Conc. Matrix Spike Dup.:	0.32
Matrix Spike Duplicate % Recovery:	122
Relative % Difference:	3.2

SEQUOIA ANALYTICAL

Scott A. Chieffo
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL
1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Harding Lawson Associates
1355 Willow Way, Suite 109
Concord, CA 94520
Attention: Doreen Meyer

Client Project ID: 2421,011.03, Transo/LaCoste

QC Sample Group: 111-1094

Reported: Dec 9, 1991

QUALITY CONTROL DATA REPORT

ANALYTE
Lead

Method:	EPA 239.2
Analyst:	K. Anderson
Reporting Units:	mg/L
Date Analyzed:	Dec 3, 1991
QC Sample #:	111-1031
Sample Conc.:	N.D.
Spike Conc. Added:	0.10
Conc. Matrix Spike:	0.11
Matrix Spike % Recovery:	110
Conc. Matrix Spike Dup.:	0.11
Matrix Spike Duplicate % Recovery:	110
Relative % Difference:	0

SEQUOIA ANALYTICAL

Scott A. Chieffo
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

Harding Lawson Associates
1355 Willow Way, Suite 109
Concord, California 94520
415/687-9660
Telecopy: 415/687-9673

CHAIN OF CUSTODY FORM

Lab: Sequoia

Samplers: DPM

Job Number: 2421.011.03

Name/Location: Transo/LaCoste

Project Manager: DBE

Recorder: DMeyers (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	Lead
	X				X			MW	-	6	91	11	19	1	Filter sample Std. TAT							X

11/20/91

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

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) DMeyers	RECEIVED BY: (Signature) KNiel	DATE/TIME 11/21 1410
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
METHOD OF SHIPMENT		

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

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SEQUOIA ANALYTICAL

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Harding Lawson Associates	Client Project ID:	Transo Lacoste/ Emeryville/ #2421.021.03	Sampled:	Feb 6, 1992
1355 Willow Way, Suite 109	Sample Descript:	Water, MW-6	Received:	Feb 6, 1992
Concord, CA 94520			Analyzed:	Feb 12, 1992
Attention: Doreen Meyer	Lab Number:	202-0225	Reported:	Feb 12, 1992

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Total Dissolved Lead	0.0050	0.020

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Scott A. Chieffo
Project Manager

SEQUOIA ANALYTICAL

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Harding Lawson Associates
1355 Willow Way, Suite 109
Concord, CA 94520
Attention: Doreen Meyer

Client Project ID: Transo Lacoste/ Emeryville/ #2421.021.03

QC Sample Group: 202-0225

Reported: Feb 12, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Total Dissolved Lead
Method:	EPA 239.2
Analyst:	K. Anderson
Reporting Units:	mg/L
Date Analyzed:	Feb 12, 1992
QC Sample #:	202-0004
Sample Conc.:	0.020
Spike Conc. Added:	0.10
Conc. Matrix Spike:	0.14
Matrix Spike % Recovery:	120
Conc. Matrix Spike Dup.:	0.14
Matrix Spike Duplicate % Recovery:	120
Relative % Difference:	0.0

SEQUOIA ANALYTICAL

Scott A. Chieffo
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

[redacted] Harding Lawson Associates
1365 Willow Way, Suite 109
Concord, California 94520
415/687-9660
Telecopy: 415/687-9673

CHAIN OF CUSTODY FORM

Lab: SEQUOIA

Samplers: JAMES E. McCOY

Job Number: 2421.02[redacted]1.03

Name/Location: TRANSCO LACOSTE/EMERYVILLE

Project Manager: DOREEN P. MEYER

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	LEAD
2 3	X				1			9[redacted]	MW	-6	9	1	0	2	0	6							X

MUST BE FILTERED BY 1[redacted]35 6FEB92
STANDARD T.A.T.

ANALYSIS REQUESTED: 20202025

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

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) [signature]	RECEIVED BY: (Signature) [signature]	DATE/TIME 2/6 | 3 pm
RELINQUISHED BY: (Signature) [signature]	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
METHOD OF SHIPMENT		

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SEQUOIA ANALYTICAL

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Harding Lawson Associates (Concord)	Client Project ID:	#2421,021.03, Transo/LaCoste	Sampled: Apr 1, 1992
1355 Willow Way, Suite 109	Matrix Descript:	Water	Received: Apr 2, 1992
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Analyzed: 4/7-8/92
Attention: Doreen Meyer	First Sample #:	204-0070	Reported: Apr 16, 1992

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
204-0070	2	N.D.	N.D.	N.D.	N.D.	N.D.
204-0071	3	N.D.	N.D.	N.D.	N.D.	N.D.
204-0072	4	N.D.	N.D.	N.D.	N.D.	N.D.
204-0073	6	N.D.	0.73	N.D.	N.D.	0.37
Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

SEQUOIA ANALYTICAL

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Harding Lawson Associates (Concord)	Client Project ID:	#2421,021.03, Transo/LaCoste	Sampled:	Apr 1, 1992
1355 Willow Way, Suite 109	Matrix Descript:	Water	Received:	Apr 2, 1992
Concord, CA 94520	Analysis Method:	SM 5520 B&F (Gravimetric)	Extracted:	Apr 13, 1992
Attention: Doreen Meyer	First Sample #:	204-0070	Analyzed:	Apr 15, 1992
			Reported:	Apr 16, 1992

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/L (ppm)
204-0070	2	5.0
204-0071	3	N.D.
204-0072	4	49
204-0073	6	13

Detection Limits:	**5.0**

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

SEQUOIA ANALYTICAL

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Harding Lawson Associates (Concord)	Client Project ID:	#2421,021.03, Transo/LaCoste		Sampled:	Apr 1, 1992
1355 Willow Way, Suite 109	Sample Descript:	Water		Received:	Apr 2, 1992
Concord, CA 94520	Analysis for:	Lead	Method 7421	Extracted:	Apr 13, 1992
Attention: Doreen Meyer	First Sample #:	204-0070		Analyzed:	Apr 13, 1992
				Reported:	Apr 16, 1992

LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
204-0070	2	0.0050	0.026
204-0071	3	0.0050	N.D.
204-0072	4	0.0050	N.D.
204-0073	6	0.0050	0.016

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

SEQUOIA ANALYTICAL

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Harding Lawson Associates (Concord)	Client Project ID:	#2421,021.03, Transo/LaCoste		Sampled:	Apr 1, 1992
1355 Willow Way, Suite 109	Sample Descript:	Water		Received:	Apr 2, 1992
Concord, CA 94520	Analysis for:	Zinc	Method 7950	Extracted:	Apr 13, 1992
Attention: Doreen Meyer	First Sample #:	204-0070		Analyzed:	Apr 15, 1992
				Reported:	Apr 16, 1992

LABORATORY ANALYSIS FOR: Zinc

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
204-0070	2	0.010	0.13
204-0071	3	0.010	0.16
204-0072	4	0.010	0.090
204-0073	6	0.010	0.11

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

SEQUOIA ANALYTICAL

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Harding Lawson Associates (Concord)
1355 Willow Way, Suite 109
Concord, CA 94520
Attention: Doreen Meyer

Client Project ID: #2421,021.03, Transo/LaCoste
QC Sample Group: 2040070-73
Reported: Apr 16, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Oil and Grease	Lead	Zinc
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	SM5520	EPA 7421	EPA 7950
Analyst:	K.N./K.E./J.F.	K.N./K.E./J.F.	K.N./K.E./J.F.	K.N./K.E./J.F.	D. Newcomb	K. Anderson	K. Anderson
Reporting Units:	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L
Date Analyzed:	Apr 7, 1992	Apr 7, 1992	Apr 7, 1992	Apr 7, 1992	Apr 15, 1992	Apr 13, 1992	Apr 13, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank	204-0070	204-0070
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	0.026	0.16
Spike Conc. Added:	20	20	20	60	100	0.05	0.5
Conc. Matrix Spike:	22	23	23	71	81	0.087	0.73
Matrix Spike % Recovery:	110	115	115	101	81	122	114
Conc. Matrix Spike Dup.:	23	23	23	72	80	0.087	0.74
Matrix Spike Duplicate % Recovery:	115	115	115	103	80	122	116
Relative % Difference:	4.4	0	0	1.4	1	0	1.4

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

[redacted] Asso[redacted]
1355 Willow Way, Suite 109
Concord, California 94520
415/687-9660
Telecopy: 415/687-9673

CHAIN OF CUSTODY FORM

Lab: Sequoia

Samplers: J. McCoy

Job Number: 2A21,021.03

Name/Location: Transo/LaCoste

Project Manager: D. Meyer

Recorder: D Meyer (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4/□	HNO_3/□	HCl/VOA	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES
23	X				2	1	3		2			92	04	01		Std. TAT — 1204009 0AF
23	X				2	1	3		3							metals samples 7 1AF
23	X				2	1	3		4							for lead and zinc 7 2AF
23	X				2	1	3		6							are filtered 7 3AF
																samples

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	TPHgas BTEX	Total Oil & grease	Metals-lead & zinc	lead (7421)	Zinc (7950)
						X	X	X		

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

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) D Meyer	RECEIVED BY: (Signature)	DATE/TIME 4-2-92 3:40PM
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
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2200 Powell Street, Suite 1200
Emeryville, California 94608

Attention: Mr. Ignacio Dayrit

DPM/SJO/pkp 032102T/R55

QUALITY CONTROL REVIEWER

Terence J. McManus
Associate Environmental Scientist