



June 20, 2001

Ms. Donna Proffitt  
Bank of America, N.A.  
Environmental Services Department  
4820 Irvine Boulevard  
Irvine, California 92620-1910

Reference: Groundwater Monitoring Report (April 2001)  
2585 Nicholson Street in San Leandro, California  
ES# 305582  
Versar Project No. 4422-003

Dear Ms. Proffitt:

Versar, Inc. (Versar) has prepared this groundwater monitoring report on behalf of Bank of America, N.A. (Bank of America) summarizing work performed at the property located at 2585 Nicholson Street in San Leandro, California (Site). Figures 1 and 2, Attachment I, present the Site location and Site layout, respectively. The following sections describe the scope of work, Site location, and Site background.

This letter report presents the results of the quarterly groundwater monitoring and sampling event conducted at the Site on April 26, 2001. The results of this monitoring event are presented graphically on Figure 3 in Attachment I, and are summarized in tables in Attachment II. This report has been prepared in response to the request by the Alameda County Health Care Services (ACHCS) letters dated July 14, 1999, and October 29, 1999, regarding groundwater monitoring at 2585 Nicholson Street, San Leandro, California.

The Site is located at 2585 Nicholson Street in San Leandro, California. The nearest cross street is Republic Avenue. The Site is currently occupied by Crane Works and consists of a single-story commercial office building at the north end of the property, and covered parking/work areas over the western and southern edges of the property.

Aprilqms/4422-003

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7844 MADISON AVENUE, SUITE 167 • FAIR OAKS, CA 95628 • TELEPHONE (916) 962-1612 FAX (916) 962-2678



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## BACKGROUND

According to prior assessment documents, two underground storage tanks (USTs) were removed from the Site in 1991. Soil and groundwater samples collected during the UST removal activities identified total petroleum hydrocarbons as diesel (TPHd) and gasoline (TPHg) in both media, and soils were over excavated. One groundwater monitoring well (MW-1) was installed in 1992, and an oil absorbent sock was used to collect free-floating product (maximum of 1.25-inches).

In April 1999, Versar installed four additional monitoring wells on or around the Site perimeter. Quarterly monitoring of groundwater from the monitoring wells has been performed since well installation. Groundwater monitoring has identified TPHg and benzene, toluene, ethylbenzene, and xylenes (BTEX) on-site in well MW-1. Low to non-detect levels of the constituents have been identified in the surrounding monitoring wells. This report presents the April 2001 monitoring episode.

## QUARTERLY GROUNDWATER MONITORING ACTIVITIES

*Versar performed groundwater monitoring of the Site on April 26, 2001, sampling the five wells for TPHg and BTEX. Three of the wells were sampled for parameters indicative of intrinsic bio-remediation. Versar's quarterly groundwater monitoring program for the Site included the following tasks:*

- Measure groundwater levels in monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5, and calculate the hydraulic gradient and flow direction;
- Purge and collect groundwater samples from the five monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5);
- Obtain measurements of groundwater temperature, electrical conductivity, pH, oxidation/reduction potential (redox), and dissolved oxygen (DO) in monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5;
- Submit the groundwater samples to a California-certified analytical laboratory for analysis of one or more of the following; TPHg, total petroleum hydrocarbons as diesel (TPHd), BTEX, methane, nitrate, sulfate, and alkalinity; and

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- Prepare a letter report summarizing the results.

### **Groundwater Sampling Protocol**

The methodology and protocol followed for the collection of groundwater samples during this groundwater sampling event are presented in Attachment III, Decontamination and Groundwater Monitoring Well Sampling Procedures.

### **Quarterly Groundwater Level Measurements**

On April 26, 2001, the depth to groundwater in wells MW-1, MW-2, MW-3, MW-4 and MW-5 was measured to characterize groundwater flow direction and gradient. The depths to groundwater at each well, along with historical measurements, are presented in Table 1. Groundwater surface elevations are 0.05 to 0.33 foot higher than in January 2001. Groundwater was measured to be flowing in a southerly direction, at a gradient of approximately 0.001 feet per foot. Figure 3 in Attachment I is a groundwater gradient map generated from the April 26, 2001 data. The gradient depicted on Figure 3 depicts some localized recharge effects likely related to precipitation. The overall gradient and direction of groundwater flow is relatively consistent with those observed previously at the Site.

### **Groundwater Sampling Activities**

On April 26, 2001, groundwater samples were collected from monitoring wells MW-1, MW-2, MW-3, MW-4 and MW-5. Prior to sampling, each well was purged of approximately three casing volumes of groundwater, and the water level allowed to recover to at least 80 percent of the pre-purge level. Measurements of temperature, pH, electrical conductivity, redox, and DO were recorded a minimum of three times during each purged well volume. The groundwater monitoring well purge tables are presented in Attachment IV.

Groundwater samples collected from Site wells MW-1, MW-2, MW-3, MW-4, and MW-5 were analyzed for TPHg and BTEX. Groundwater samples collected from Site wells MW-1, MW-2, and MW-3 were analyzed for methane, sulfate, nitrate and alkalinity. The groundwater sample from Site well MW-1 was also analyzed for TPHd. All analyses were performed by Excelchem Environmental Labs (Excelchem), California State Laboratory Certification No. 2119. The samples were collected, placed in containers, preserved, transported, and analyzed within the time constraints consistent with applicable United States EPA, California EPA, and Regional Water Quality Control Board (RWQCB) procedures, and in conformance with Versar's Decontamination and Groundwater Monitoring Well Sampling Procedures, presented in Attachment III. Purge water from the April 26, 2001 sampling event was stored on-site in



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two DOT-approved, 55-gallon steel drums, which are pending off-site recycling by Seaport Environmental.

## ANALYTICAL RESULTS

The analytical results of the TPH and BTEX analyses are summarized in Table 2 in Attachment II. Figure 3 in Attachment I spatially depicts the analytical results for the April 26, 2001 groundwater monitoring event. The analytical results for methane, nitrate, sulfate, and alkalinity analyses; and DO and redox measurements; are summarized in Table 3 in Attachment II. The laboratory analytical reports are included in Attachment V. The following is a summary of the analytical results:

- TPHg was detected in each monitoring well at concentrations ranging from 62 micrograms per liter well ( $\mu\text{g/L}$ ) in well MW-3, to 13,000  $\mu\text{g/L}$  in well MW-1.
- Benzene was detected in well MW-1 only at a concentration of 1,200  $\mu\text{g/L}$ ;
- Toluene was detected in well MW-1 only at a concentration of 170  $\mu\text{g/L}$ ;
- Ethylbenzene was detected in well MW-1 only at a concentration of 450  $\mu\text{g/L}$ ; and
- Total xylene isomers was detected in well MW-1 only at a concentration of 1,300  $\mu\text{g/L}$ .

Samples collected from wells MW-1, MW-2, and MW-3 to assess the potential for intrinsic bio-remediation indicate that anaerobic intrinsic biodegradation continues to occur at the Site. Methane concentrations are elevated in MW-1 relative to other samples, suggesting anaerobic respiration. The nitrate and sulfate concentrations are lower in MW-1, suggesting use of these electron receptors in biological degradation. In addition, redox is strongly negative and DO is lower in MW-1, suggesting biological activity.



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## CONCLUSIONS

Based on the results of this most recent quarterly groundwater monitoring event, Versar has made the following conclusions.

- During the April 2001 monitoring event, groundwater surface elevations were 0.05 to 0.33 foot higher than in January 2001
- TPHg and BTEX were detected in the sample collected from well MW-1. Low levels of TPHg were detected in samples collected from other Site monitoring wells. BTEX compounds were not detected in the samples collected from wells other than MW-1. Concentrations of TPHg and BTEX in well MW-1 remained relatively consistent during the April 2001 monitoring event. The data indicates that the area of residual impact at the Site remains located near the center of the property, in the vicinity of MW-1.
- Samples collected from wells MW-1, MW-2, and MW-3 to assess the potential for intrinsic bio-remediation indicate that anaerobic intrinsic biodegradation continues to occur at the Site.

## FUTURE ACTIVITIES

In a letter from the ACHCS dated June 4, 2001, the ACHCS authorized reduction of the monitoring program for the Site. While specific analyses were not identified in the letter, Versar's interpretation of the revised program is as follows: 1) groundwater samples will be collected from well MW-1 on a semi-annual basis for TPHg and BTEX analyses; 2) groundwater sampling will not be required for the remaining monitoring wells; 3) groundwater surface elevations for each monitoring well will be measured on a semi-annual basis; and 4) reporting will occur on a semi-annual basis. The initial event of this revised program will occur in October 2001.

## REFERENCES

Alameda County Health Care Services Agency. Letter to Mr. John Schovanec, Bank of America Environmental Services. Re: Groundwater monitoring at 2584 Nicholson Street, San Leandro, CA. Dated July 14, 1999.



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United States Department of the Interior Geological Survey. Map. *San Leandro Quadrangle, 7.5 Minute Series (Topographic)*. 1959, Photorevised 1980.

Versar, Inc.. *Monitoring Well Installation and Groundwater Monitoring Report*. Prepared for Bank of America, N.T. & S.A.. Project No. 4422-001. June 30, 1999.

Versar, Inc.. *Groundwater Monitoring and Utility Survey Report*. Prepared for Bank of America, N.T. & S.A.. Project No. 4422-001. January 6, 2000.

Versar, Inc.. *Groundwater Monitoring Report, January 2000*. Prepared for Bank of America, N.T. & S.A.. Project No. 4422-001. March 21, 2000.

Versar, Inc.. *Groundwater Monitoring Report, April 2000*. Prepared for Bank of America, N.T. & S.A.. Project No. 4422-002. May 31, 2000.

Versar, Inc.. *Groundwater Monitoring Report, July 2000*. Prepared for Bank of America, N.T. & S.A.. Project No. 4422-002. September 26, 2000.

Versar, Inc.. *Groundwater Monitoring Report, October 2000*. Prepared for Bank of America, N.T. & S.A.. Project No. 4422-002. December 20, 2000.

Versar, Inc.. *Risk-Based Corrective Action (RBCA) Analysis Update*. Prepared for Cox, Castle & Nicholson LLP, Project No. 4422-003. March 21, 2000.

## STATEMENT OF LIMITATIONS

The conclusions presented above are based on the agreed-upon scope of work outlined in the beginning of this report. Versar makes no warranties or guarantees as to the accuracy or completeness of information provided or compiled by others and used by Versar. It is possible that information exists beyond the scope of this investigation. Also, changes in Site use may have occurred sometime in the past due to variations in rainfall, temperature, water usage, economic, agricultural, or other factors. Additional information that was not found or available to Versar at the time of the writing of this report may result in a modification of the conclusions presented. This report is not a legal opinion.



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The services performed by Versar have been conducted in a manner consistent with the level of care ordinarily exercised by members of our profession currently practicing under similar conditions. No other warranty expressed or implied is made.

This Quarterly Monitoring Report was prepared by Versar on behalf of Bank of America. Ms. Annette Cornelius, Environmental Assessor, performed the groundwater sample collection. Mr. Scott Allin, Registered Environmental Assessor, prepared the report, and supervised the field activities. Mr. Tim Berger, Registered Geologist, reviewed the report.

Prepared by:

Scott Allin, R.E.A.  
Senior Program Manager  
Versar - Pacific Region

Reviewed by:

Tim Berger, R.G.  
Supervising Geologist  
Versar - Pacific Region

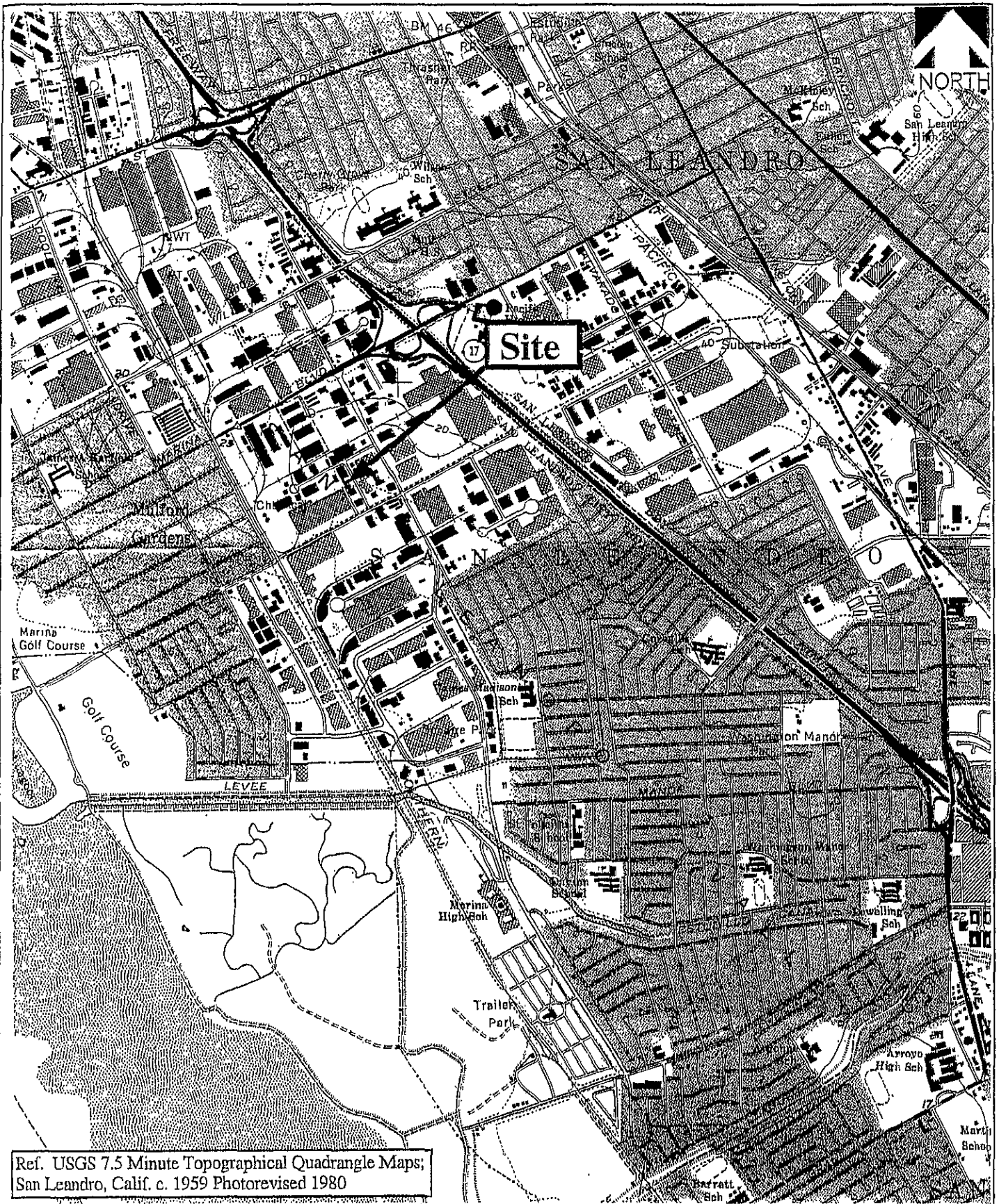
- Attachment I - Figures
- Attachment II - Tables
- Attachment III - Decontamination and Groundwater Monitoring Well Sampling Procedures
- Attachment IV - Monitoring Well Purge Tables
- Attachment V - Laboratory Analytical Reports and Chain-of-Custody Documentation

cc: Amir Gholami (Alameda County)  
Mike Bakaldin (City of San Leandro)

**ATTACHMENT I**

Figures





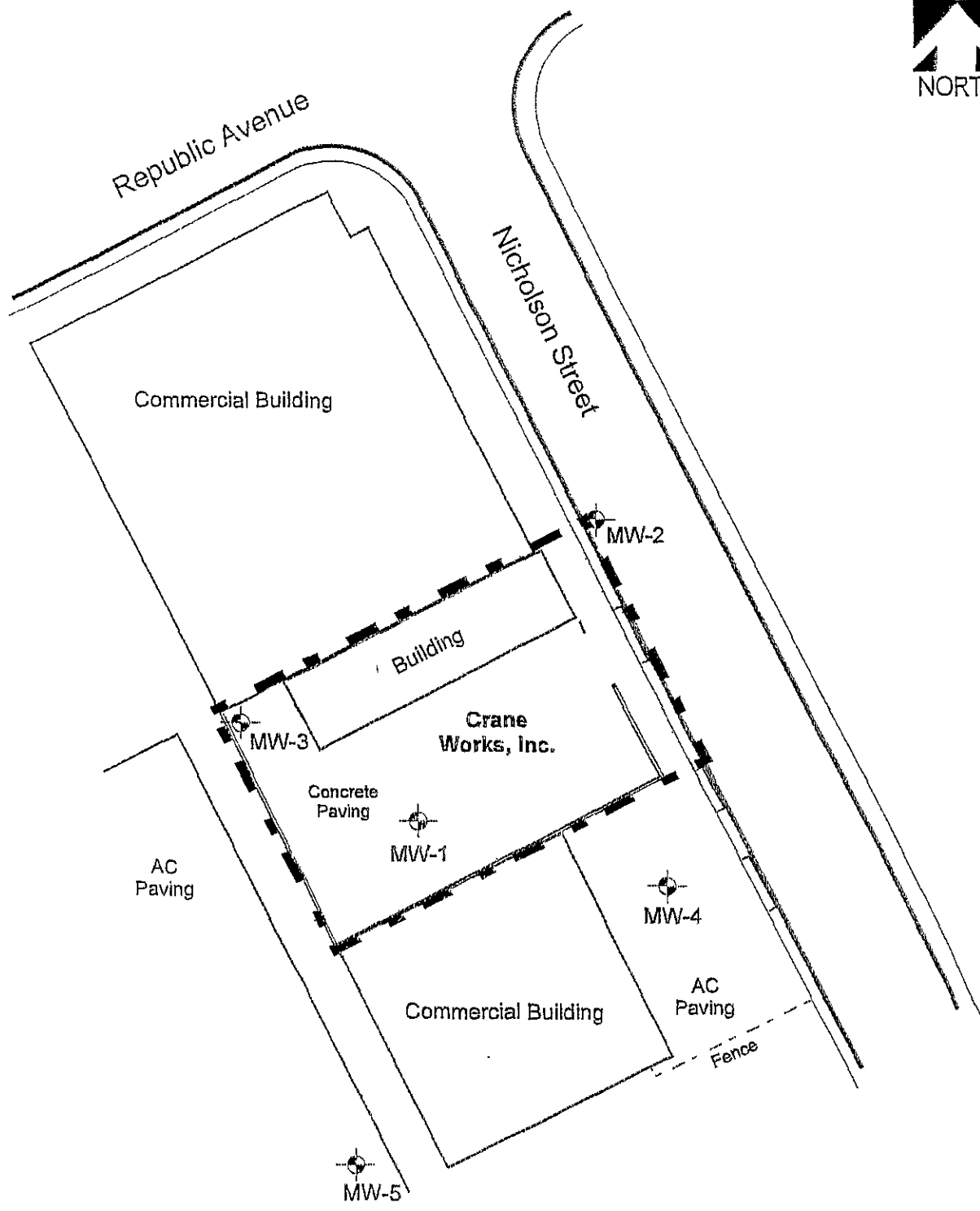
Ref. USGS 7.5 Minute Topographical Quadrangle Maps;  
 San Leandro, Calif. c. 1959 Photorevised 1980

Dr. By: Dale Anderson  
 Date: 5/10/99  
 Scale: 1 inch=2,000 feet  
 Versar Project No. 4422-001  
 File No: P:\BOFA\SANLEANDRO\REPORT\Fig1

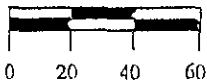
**Versar** INC.  
 7844 Madison Avenue  
 Suite 167  
 Fair Oaks, CA 95628  
 (916) 962-1612

**SITE LOCATION**  
 2585 Nicholson Street  
 San Leandro, California

Figure  
 1



(Scale - Feet)



Dr. By: Dale Anderson

Date: 5/10/99

Scale: 1 Inch = 60 feet

Versar Project No. 4422-001

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Suite 167  
Fair Oaks, CA 95628  
(916) 962-1612

### SITE LAYOUT AND MONITORING WELL LOCATION MAP

2585 Nicholson Street  
San Leandro, California

Figure  
2



Republic Avenue

Nicholson Street

Commercial Building

**MW-1**  
Depth to Water: 5.38'  
G.W. Elevation: 9.89'

**MW-2**  
Depth to Water: 3.80'  
G.W. Elevation: 9.89'

**MW-3**  
Depth to Water: 5.901'  
G.W. Elevation: 9.98'

Crane Works, Inc.

**MW-4**  
Depth to Water: 5.40'  
G.W. Elevation: 9.85'

AC Paving

9.95'

9.90'

AC Paving

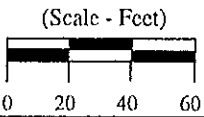
Commercial Building

Fence

**MW-5**  
Depth to Water: 6.65'  
G.W. Elevation: 9.81'

9.85'

Groundwater  
Gradient: 0.001 ft/ft



Legend	
	Observation Well Location
9.35'	Groundwater Contour Interval in Feet Above Mean Sea Level
	Groundwater Contour
	Groundwater Flow Direction

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Suite 167  
Fair Oaks, CA 95628  
(916) 962-1612

**Groundwater Contour Map**  
April 26, 2001  
2585 Nicholson Street  
San Leandro, California

**Figure 3**



Republic Avenue

Nicholson Street

Commercial Building

<b>MW-2</b>	
TPH-G:	160
B:	<0.5
T:	<0.5
E:	<0.5
X:	<1.0

<b>MW-3</b>	
TPH-G:	62
B:	<0.5
T:	<0.5
E:	<0.5
X:	<1.0

<b>MW-1</b>	
TPH-G:	13,000
B:	1,200
T:	170
E:	450
X:	1,300

MW-2

Crane Works, Inc.

Concrete Paving

<b>MW-4</b>	
TPH-G:	130
B:	<0.5
T:	<0.5
E:	<0.5
X:	<1.0

MW-3

MW-1

MW-4

AC Paving

Commercial Building


AC Paving

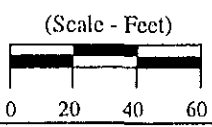
Fence

<b>MW-5</b>	
TPH-G:	200
B:	<0.5
T:	<0.5
E:	<0.5
X:	<1.0

MW-5

Legend

-  Observation Well Location
- NOTE: All Results in ug/L
- TPH-G: Total Petroleum Hydrocarbons as Gasoline
- B: Benzene
- T: Toluene
- E: Ethylbenzene
- X: Total Xylenes
- NA: Not analyzed.



Dr. By: AC  
 Date: 05/9/01  
 Scale: 1 inch= 60 feet  
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 7844 Madison Avenue  
 Suite 167  
 Fair Oaks, CA 95628  
 (916) 962-1612

**Laboratory Analytical Results  
 For Groundwater Samples  
 April 26, 2001  
 2585 Nicholson Street  
 San Leandro, California**

Figure 4

**ATTACHMENT II**

**Tables**

Table I  
Groundwater Elevation Data  
2585 Nicholson Street  
San Leandro, California

		Groundwater Monitoring Well					Hydraulic gradient magnitude (ft/ft)	General gradient direction
		MW-1	MW-2	MW-3	MW-4	MW-5		
Well casing elevation (feet amsl)		15.27	13.69	15.88	15.25	16.46	---	---
April 29, 1999	Depth to groundwater (feet toc)	5.33	3.76	5.88	5.40	6.64	0.001	Southeast
	Groundwater elevation (feet amsl)	9.94	9.93	10.00	9.85	9.82		
July 28, 1999	Depth to groundwater (feet toc)	5.85	4.19	6.37	5.84	7.11	0.001	Southeast
	Groundwater elevation (feet amsl)	9.42	9.50	9.51	9.41	9.35		
	Change from previous elevation	-0.52	-0.43	-0.49	-0.44	-0.47		
October 28, 1999	Depth to groundwater (feet toc)	5.45	4.06	5.79	5.60	6.68	0.002	Easterly
	Groundwater elevation (feet amsl)	9.82	9.63	10.09	9.65	9.78		
	Change from previous elevation	0.40	0.13	0.58	0.24	0.43		
January 20, 2000	Depth to groundwater (feet toc)	5.13	3.70	5.63	5.25	6.43	0.001	Easterly
	Groundwater elevation (feet amsl)	10.14	9.99	10.25	10.00	10.03		
	Change from previous elevation	0.32	0.36	0.16	0.35	0.25		
April 13, 2000	Depth to groundwater (feet toc)	4.95	3.61	5.41	5.06	6.15	0.002	Easterly
	Groundwater elevation (feet amsl)	10.32	10.08	10.47	10.19	10.31		
	Change from previous elevation	0.18	0.09	0.22	0.19	0.28		
July 20, 2000	Depth to groundwater (feet toc)	5.74	4.06	6.27	5.77	7.11	0.001	South/Southeast
	Groundwater elevation (feet amsl)	9.53	9.63	9.61	9.48	9.35		
	Change from previous elevation	-0.79	-0.45	-0.86	-0.71	-0.96		
October 26, 2000	Depth to groundwater (feet toc)	5.35	3.85	5.75	5.28	6.56	N/A	N/A
	Groundwater elevation (feet amsl)	9.92	9.84	10.13	9.97	9.90		
	Change from previous elevation	-0.40	-0.24	-0.34	-0.22	-0.41		
January 23, 2001	Depth to groundwater (feet toc)	5.70	4.00	6.21	5.73	6.70	0.001	South/Southeast
	Groundwater elevation (feet amsl)	9.57	9.69	9.67	9.52	9.76		
	Change from previous elevation	-0.35	-0.15	-0.46	-0.45	-0.14		
April 26, 2001	Depth to groundwater (feet toc)	5.38	3.80	5.90	5.40	6.65	0.001	Southeast
	Groundwater elevation (feet amsl)	9.89	9.89	9.98	9.85	9.81		
	Change from previous elevation	0.32	0.20	0.31	0.33	0.05		

Notes and Abbreviations:  
ft/ft = feet per foot  
amsl = above mean sea level  
toc = top of casing  
N/A = not available

Table 2  
Analytical Results for Groundwater Samples  
2585 Nicholson Street  
San Leandro, California

Monitoring Well No	Date	Chemicals of Concern								
		TPH-G (µg/L)	TPH-D (µg/L)	TPH-MO (µg/L)	TPH-K (µg/L)	TPH-SS (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW-1	Jun-92	10,000	ND	--	--	--	110	81	62	280
	Nov-92	9,800	ND	--	--	--	23	14	22	96
	Apr-93	18,000	560	ND	ND	370	42	47	50	190
	Jul-93	27,000	ND	ND	ND	ND	40	45	63	190
	Dec-93	7,800	3,800	ND	ND	ND	13	16	20	77
	Mar-94	280,000	620	ND	ND	3,300	970	880	620	1,700
	Jun-94	8,500	ND	ND	ND	ND	23	13	8.5	19
	Sep-94	2,400	52	ND	ND	ND	5.3	2.6	2.5	6
	Dec-94	4,800	1300	ND	ND	1,000	32	32	16	50
	Apr-95	74,000	3,700	ND	ND	570	320	350	350	940
	Sep-95	33,000	46,000	ND	ND	4,900	140	270	260	1,100
	May-99	8,100	ND	ND	--	--	1,400	31	82	360
	Jul-99	3,500	1,700	--	--	--	252	23	43	179
	Oct-99	4,900	--	--	--	--	270	34	<5	370
	Jan-00	22,400	<500	--	--	--	1,300	402	483	2,490
	Apr-00	13,000	--	--	--	--	1,130	226	335	1,410
	Jul-00	28,400	<50	<500	--	--	1,470	190	299	967
Oct-00	12,900	--	--	--	<1,000	1,000	197	353	1,400	
Jan-01	17,800	--	--	--	--	957	146	353	1,060	
Apr-01	13,000	<50	--	--	--	1,200	170	450	1,300	
MW-2	Apr-99	ND	ND	ND	--	--	ND	ND	ND	ND
	Jul-99	<100	<100	--	--	--	<1.0	<1.0	<1.0	<1.0
	Oct-99	<100	--	--	--	--	<1.0	<1.0	<1.0	<1.0
	Jan-00	118	--	--	--	--	0.7	<0.5	<0.5	<0.5
	Apr-00	<50	--	--	--	--	0.5	<0.5	<0.5	<0.5
	Jul-00	<400	--	--	--	--	0.8	<0.5	<0.5	<0.5
	Oct-00	<50	--	--	--	--	<0.5	<0.5	<0.5	<1.0
	Jan-01	104	--	--	--	--	<0.5	<0.5	<0.5	<0.5
Apr-01	160	--	--	--	--	<0.5	<0.5	<0.5	<0.5	
MW-3	Apr-99	ND	540	ND	--	--	ND	ND	ND	ND
	Jul-99	300	<100	--	--	--	<1.0	<1.0	<1.0	<1.0
	Oct-99	230	--	--	--	--	<1.0	<1.0	<1.0	<1.0
	Jan-00	163	<50	--	--	--	0.8	<0.5	<0.5	<0.5
	Apr-00	90	--	--	--	--	0.7	<0.5	<0.5	<0.5
	Jul-00	<400	--	--	--	--	2.0	<0.5	<0.5	<0.5
	Oct-00	<50	--	--	--	--	<0.5	<0.5	<0.5	<1.0
	Jan-01	62	--	--	--	--	<0.5	<0.5	<0.5	<0.5
Apr-01	62	--	--	--	--	<0.5	<0.5	<0.5	<0.5	
MW-4	Apr-99	110	ND	ND	--	--	ND	ND	ND	ND
	Jul-99	120	<100	--	--	--	<1.0	<1.0	<1.0	<1.0
	Oct-99	<100	--	--	--	--	<1.0	<1.0	<1.0	<1.0
	Jan-00	106	--	--	--	--	0.9	<0.5	<0.5	<0.5
	Apr-00	99	--	--	--	--	1.0	<0.5	<0.5	<0.5
	Jul-00	--	--	--	--	--	--	--	--	--
	Oct-00	139	--	--	--	--	0.6	<0.5	<0.5	<1.0
	Jan-01	85	--	--	--	--	<0.5	<0.5	<0.5	<0.5
Apr-01	130	--	--	--	--	<0.5	<0.5	<0.5	<0.5	
MW-5	Apr-99	270	ND	ND	--	--	ND	ND	ND	ND
	Jul-99	570	<100	--	--	--	<1.0	<1.0	<1.0	<1.0
	Oct-99	540	--	--	--	--	<1.0	<1.0	<1.0	<1.0
	Jan-00	231	--	--	--	--	1.9	<0.5	<0.5	<0.5
	Apr-00	353	--	--	--	--	3.5	<0.5	<0.5	<0.5
	Jul-00	<400	--	--	--	--	<0.5	<0.5	<0.5	<0.5
	Oct-00	156	--	--	--	--	1.0	<0.5	<0.5	<1.0
	Jan-01	<50	--	--	--	--	<0.5	<0.5	<0.5	<0.5
Apr-01	200	--	--	--	--	<0.5	<0.5	<0.5	<0.5	

**Notes and Abbreviations:**

TPH-G = total petroleum hydrocarbons as gasoline.  
 TPH-D = total petroleum hydrocarbons as diesel  
 TPH-K = total petroleum hydrocarbons as kerosene.  
 TPH-SS = total petroleum hydrocarbons as stoddard solvent.  
 µg/L = micrograms per liter, equivalent to parts per billion (ppb).  
 mg/L = milligrams per liter, equivalent to parts per million (ppm).  
 ND = not detected at or above the methods reporting limit  
 -- = not analysed

Table 3  
 Intrinsic Bioremediation Indicator Analytical Results for Groundwater Samples  
 2585 Nicholson Street  
 San Leandro, California

Monitoring Well No.	Date	Bioremediation Indicators					
		Methane (µg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Alkalinity (mg/L)	Redox (mV)	D/O (mg/L)
MW-1	Jan-00	2590	0.27	46	576	-106	2.51
	Apr-00	3.1	<0.20	14	614	137	0.94
	Jul-00	2170	<0.5	13	524	-167	1.01
	Oct-00	2660	<0.5	32	578	-107	0.69
	Jan-01	156	<0.1	10	558	-156	1.17
	Apr-01	2300	<0.5	<4.0	560	-132	0.12
MW-2	Jan-00	1.5	3.04	82	530	-048	1.63
	Apr-00	<0.01	24	75	498	195	0.93
	Jul-00	3.1	6.3	59	706	-015	1.05
	Oct-00	2.5	24	24	546	164	2.63
	Jan-01	1.9	5.5	90	468	185	7.97
	Apr-01	2.2	22	230	520	159	1.63
MW-3	Jan-00	13.0	1.37	45	346	-055	2.61
	Apr-00	0.02	3.2	20	304	061	0.98
	Jul-00	31	1.9	44	312	069	0.95
	Oct-00	42	8.9	47	366	-009	2.28
	Jan-01	16	2.2	28	368	157	7.34
	Apr-01	12	6.1	42	370	001	2.49
MW-4	Jan-00	--	--	--	--	-060	1.49
	Apr-00	--	--	--	--	181	0.94
	Jul-00	--	--	--	--	033	0.76
	Oct-00	--	--	--	--	132	3.05
	Jan-01	--	--	--	--	189	11.2
	Apr-01	--	--	--	--	107	1.6
MW-5	Jan-00	--	--	--	--	-072	1.91
	Apr-00	--	--	--	--	116	1.48
	Jul-00	--	--	--	--	-045	1.02
	Oct-00	--	--	--	--	125	0.96
	Jan-01	--	--	--	--	201	11.97
	Apr-01	--	--	--	--	73	2.21

**Notes and Abbreviations:**

Methane by Gas Chromatography / Mass Spectroscopy

Nitrate by EPA method 353.2

Sulfate by EPA method 375.4

Alkalinity by EPA method 2320B

Redox - Reduction/Oxidation potential in millivolts, field measured with direct reading instrument, average of last three readings.

D/O - Dissolved Oxygen, field measured with direct reading instrument, average of last three readings

µg/L = micrograms per liter, equivalent to parts per billion (ppb).

mg/L = milligrams per liter, equivalent to parts per million (ppm)

ND = not detected at or above the methods reporting limit.

-- = not analysed



## **ATTACHMENT III**

### **Decontamination and Groundwater Monitoring Well Sampling Procedures**

## **1.0 DECONTAMINATION PROCEDURES**

The decontamination procedures for non-dedicated field equipment and well development/purging equipment are given below. These procedures are followed during all field activities.

1. Non-dedicated well development, purging, and sampling equipment is carefully pre-cleaned prior to each use, as follows:
  - a. Carefully brush off any loose foreign debris with a soft bristle brush.
  - b. Rinse the equipment thoroughly in clean water.
  - c. Wash the equipment in a non-phosphate detergent bath.
  - d. Rinse thoroughly in clean water.
  - e. Rinse thoroughly with deionized water.
  - f. Air dry in a dust-free environment.
  - g. Store in unused plastic bags or other suitable cover until use.
2. Clean disposable gloves are worn by all field personnel when handling decontaminated equipment.

## **2.0 COLLECTION OF SAMPLES**

### **2.1 Groundwater Sampling**

Groundwater samples are collected for laboratory analysis using the procedures given below.

1. Open the well and measure the organic vapor concentration with a flame-ionization detector (FID) or photoionization detector (PID).
2. Measure the water levels (if any) in the well using a decontaminated measuring device. All measurements must be made to the nearest 0.01 foot, and measured relative to the top of the casing. Record the depth of the water in the field notebook.

3. Inspect the disposable bailer to ensure that the bottom valve assembly is working correctly.
4. Begin purging the well by inserting a bailer into the PVC monitoring well casing and carefully lower it into the well. Take care to avoid agitating and aerating the fluid column in the well.
5. Slowly withdraw the bailer and transfer the water samples to a sampling containers.
6. Measure the temperature, pH, conductivity, and turbidity. Record these and all subsequent measurements in the field notebook.
7. Continue purging the well (a minimum of three well volumes) until the temperature, pH, conductivity, and turbidity have stabilized, or the well is dry.
8. When the water has recovered to 80 percent of the original level, carefully lower a new disposable bailer into the well and recover groundwater samples.
9. Fill the appropriate sample containers by releasing water from the bailer via the bottom emptying device with a minimum of agitation. The most volatile parameters are collected first, proceeding to the least volatile parameters.
10. Place the purge water in a DOT-approved 55-gallon drums.

### **3.0 ANALYSIS OF SAMPLES**

Samples are submitted to a California state-certified laboratory for analysis.

### **4.0 SAMPLE HANDLING**

#### **4.1 Sample Containers, Preservation, and Holding Times**

All samples are collected, placed in containers, preserved, and analyzed within the time constraints with applicable local, provincial, and federal procedures. All sample containers are precleaned in accordance with prescribed EPA methods. A custody seal is placed around all sample container lids to prevent leaks and unauthorized tampering with individual samples following collection and prior to the time of analysis.

#### **4.2 Sample Tracking and Management**

All samples are tracked using a standard chain-of-custody form. The chain of custody record includes the following information:

1. Sample number
2. Signature of collector
3. Date and time of collection
4. Sample collection location
5. Sample type
6. Signature of persons involved in the chain-of-possession
7. Inclusive dates of possession
8. Analytical parameters
9. Pertinent field observations

The custody record is completed using waterproof ink. Corrections are made by drawing a line through, initialing the error, and then entering the correct information.

Custody of the samples begins at the time of sample collection and are maintained by the sampling team supervisor until samples are relinquished for shipment to the laboratory, or until samples are hand-delivered to the designated laboratory sample custodian. Partial sample sets being accumulated for hand-delivery to the laboratory are stored in coolers with chain-of-custody records sealed in plastic bags and placed in the cooler with the sample sets.

**ATTACHMENT IV**

**Monitoring Well Purge Tables**











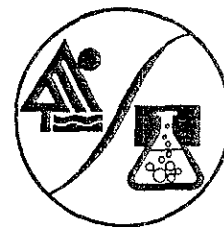


**ATTACHMENT V**

Laboratory Analytical Reports and Chain-of-Custody Documentation

PROJECT NO.		PROJECT NAME				PARAMETERS							INDUSTRIAL HYGIENE SAMPLE	Y N	
422003		B of A San Leandro				NO. OF CONTAINERS TPH <sub>15</sub> BTEX TPH <sub>4</sub> Methane Alkalinity Sulfate Nitrate							REMARKS		
SAMPLERS: (Signature) Annette Cornelius					(Printed) Annette Cornelius										
FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION										
mw 1	4/26/01	12:10		X	W0401403	8	X	X	X	X	X	X		brought in sample	
mw 2		1000		X	W0401404	7	X		X	X	X	X		w/24 hrs left for	
mw 3		1100			W0401405	7	X		X	X	X	X		NITRATE.	
mw 4		700		X	W0401406	6	X								
mw 5	✓	13:10		X	W0401407	3	X								
Relinquished by: (Signature) Annette Cornelius					Date / Time 4/27/01 9:00		Received by: (Signature) Shannon Beale					Date / Time 04/27/01 9:00		Remarks Standard TAT fax results to Scott Alline 916 962 2678	
(Printed) Annette Cornelius							(Printed) Shannon Beale								

EXCEL CHEM  
ENVIRONMENTAL LABS



500 Giuseppe Court, Suite 3  
Roseville, CA 95678

Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Annette Cornelius  
Versar Inc.  
7844 Madison Ave., Ste. 167  
Fair Oaks, CA 95628  
Project: B of A San Leandro / 4422003  
Method: EPA 8020/8015m

Date Sampled: 4/26/01  
Date Received: 4/27/01  
BTEX/TPHg Analyzed: 5/7/01  
TPHd Analyzed: 5/1/01

Client Sample I.D.	MW1		MW2		MW3		MW4		MW5	
LAB. NO.	W0401403		W0401404		W0401405		W0401406		W0401407	
ANALYTE	R/L	Results	R/L	Results	R/L	Results	R/L	Results	R/L	Results
Benzene	20	1200	0.50	ND	0.50	ND	0.50	ND	0.50	ND
Toluene	20	170	0.50	ND	0.50	ND	0.50	ND	0.50	ND
Ethylbenzene	20	450	0.50	ND	0.50	ND	0.50	ND	0.50	ND
Total Xylenes	40	1300	1.0	ND	1.0	ND	1.0	ND	1.0	ND
TPH as Gasoline	2000	13000	50	160	50	62	50	130	50	200
TPH as Diesel	50	ND	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R

QA/QC %RECOVERY		
	LCS	LCSD
Benzene	96	106
Toluene	98	110
Ethylbenzene	100	112
Total Xylenes	101	113
TPH as Diesel	73	71

QA/QC Analyzed: 5/7/01

TPHd QA/QC Analyzed: 5/1/01

N/R = Not Requested

ND = Not detected. Compound(s) may be at concentrations below the reporting limit.

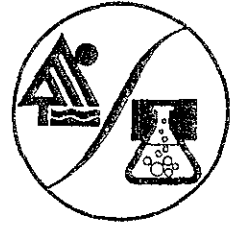
R/L = Reporting Limit

Water samples reported in µg/L

*Jeffrey Riggs*  
Laboratory Representative

5/8/01  
Date Sampled

**EXCELCHEM  
ENVIRONMENTAL LABS**



500 Giuseppe Court, Suite 3  
Roseville, CA 95678  
Phone#: (916) 773-3664 Fax#: (916) 773-4784

**ANALYSIS REPORT**

Attention: Annette Cornelius  
Versar Inc.  
7844 Madison Ave., Ste. 167  
Fair Oaks, CA 95628  
Project: B of A San Leandro / 4422003  
Method: SM 2320B

Date Sampled: 4/26/01  
Date Received: 4/27/01  
Date Analyzed: 5/7/01

Client Sample I.D.	MW1		MW2		MW3	
LAB. NO.	W0401403		W0401404		W0401405	
ANALYTE	R/L	Results	R/L	Results	R/L	Results
Hydroxide (as CaCO <sub>3</sub> )	5.0	ND	5.0	ND	5.0	ND
Carbonate (as CaCO <sub>3</sub> )	5.0	ND	5.0	ND	5.0	ND
Bicarbonate (as CaCO <sub>3</sub> )	5.0	560	5.0	520	5.0	370

QA/QC %RECOVERY			
	LCS	LCSD	MS
Alkalinity, Total	106	107	94

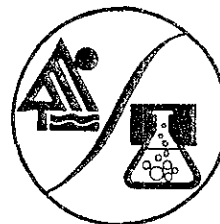
QA/QC Analyzed: 5/7/01

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.  
R/L = Reporting Limit  
Water samples reported in mg/L

*Jeffrey Rieger*  
Laboratory Representative

5/8/01  
Date Reported

EXCELCHEM  
ENVIRONMENTAL LABS



500 Giuseppe Court, Suite 3  
Roseville, CA 95678

Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Annette Cornelius  
Versar Inc.  
7844 Madison Ave., Ste. 167  
Fair Oaks, CA 95628  
Project: B of A San Leandro / 4422003  
Method: EPA 300.0

Date Sampled: 4/26/01  
Date Received: 4/27/01  
Date Analyzed: 4/27/01

Client Sample I.D.	MW1		MW2		MW3	
LAB. NO.	W0401403		W0401404		W0401405	
ANALYTE	R/L	Results	R/L	Results	R/L	Results
Nitrate (as NO <sub>3</sub> )	0.50	ND	2.5	22	0.50	6.1

QA/QC %RECOVERY		
	LCS	LCSD
Nitrate (as NO <sub>3</sub> )	105	100

QA/QC Analyzed: 4/27/01

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

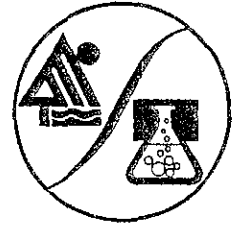
R/L = Reporting Limit

Water samples reported in mg/L

*Jeffrey Ring*  
Laboratory Representative

5/8/01  
Date Reported

EXCELCHEM  
ENVIRONMENTAL LABS



500 Giuseppe Court, Suite 3  
Roseville, CA 95678  
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Annette Cornelius  
Versar Inc.  
7844 Madison Ave., Ste. 167  
Fair Oaks, CA 95628  
Project: B of A San Leandro / 4422003  
Method: EPA RSKSOP-175

Date Sampled: 4/26/01  
Date Received: 4/27/01  
Date Analyzed: 4/30/01

Client Sample I.D.		MW1		MW2		MW3	
LAB. NO.		W0401403		W0401404		W0401405	
ANALYTE	MDL	R/L	Results	R/L	Results	R/L	Results
Methane	1.0	5.0	2300	1.0	2.2	1.0	12

QA/QC %RECOVERY		
	LCS	LCSD
Methane	80	73

QA/QC Analyzed: 4/30/01

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.  
R/L = Reporting Limit  
Water samples reported in µg/L

  
Laboratory Representative

5/8/01  
Date Reported



**EXCELCHEM  
ENVIRONMENTAL LABS**



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Phone#: (916) 773-3664 Fax#: (916) 773-4784

**ANALYSIS REPORT**

Attention: Annette Cornelius  
Versar Inc.  
7844 Madison Ave., Ste. 167  
Fair Oaks, CA 95628  
Project: B of A San Leandro / 4422003

Date Sampled: 4/26/01  
Date Received: 4/27/01  
Date Analyzed: 5/4/01

Client Sample I.D.	MW1		MW2		MW3	
LAB. NO.	W0401403		W0401404		W0401405	
ANALYTE	R/L	Results	R/L	Results	R/L	Results
Sulfate	4.0	ND	4.0	230	4.0	42

QA/QC %RECOVERY				
	LCS	LCSD	MS	MSD
Sulfate	90	115	105	110

QA/QC Analyzed: 5/4/01

ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.  
R/L = Reporting Limit  
Water samples reported in mg/L

*Jeffrey Ripp*  
Laboratory Representative

5/8/01  
Date Reported