

Report of
Groundwater Monitoring

San Antonio Pump Station
City and County of
San Francisco

June 1993

Prepared For:

City and County of San Francisco
Bureau of Construction Management
3801 3rd Street, Suite 600
San Francisco, California 94214

Prepared By:

Camp Dresser & McKee Inc.
100 Pringle Avenue, Suite 300
Walnut Creek, California 94596

CDM

*environmental engineers, scientists,
planners, & management consultants*

June 24, 1993

CAMP DRESSER & MCKEE INC.

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100 Pringle Avenue, Suite 300
Walnut Creek, California 94596
510 933-2900, Fax: 510 933-4174

City and County of San Francisco
Bureau of Construction Management
Bayview Plaza
3801 3rd Street, Suite 600
San Francisco, California 94214

Attention: Mr. Ronald Krzyzanowski
Environmental Protection Coordinator

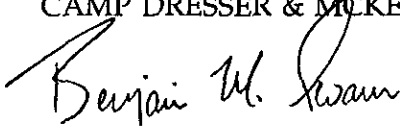
Dear Mr. Krzyzanowski:

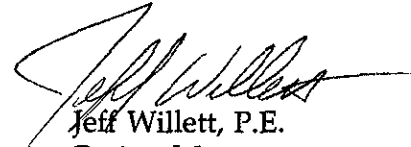
Enclosed herein are the results of the groundwater monitoring conducted at the San Antonio Pump Station in Sunol, California. The results of the sampling confirm the sampling conducted in June of 1992 which evidenced that petroleum compounds previously store on site have had no detectable impact on groundwater.

If you have any questions regarding the results of this work, please call.

Sincerely,

CAMP DRESSER & MCKEE INC.


Benjamin M. Swann, R.G.
Project Geologist


Jeff Willett, P.E.
Project Manager

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Introduction

This report presents the result of groundwater sampling conducted at the City of San Francisco's San Antonio Pump Station located at 5555 Calaveras Road in Sunol, California. Groundwater monitoring wells were installed at the site following the discovery of petroleum contamination upon removal of three underground storage tanks from the site in November 1991. The underground tanks consisted of two 10,000 gallon diesel fuel tanks and one 500 gallon waste oil tank. Following the discovery of soil contamination beneath the tanks, approximately 1,500 cubic yards of contaminated soil was excavated and removed from the site for disposal.

Three groundwater monitoring wells were subsequently installed to evaluate the groundwater conditions beneath the site. The groundwater monitoring wells were sampled in June 1992 for volatile organics, semi-volatile organics, and petroleum hydrocarbons. The results of the initial groundwater sampling indicated that groundwater had not been impacted at detectable levels by any of the previously detected soil contaminants or tank constituents. In order to monitor the long-term impact the contaminants had on the groundwater, the Alameda County Health Care Agency (lead review agency) requested the collection and analysis of four quarters of groundwater samples and the measurement of groundwater elevations on a monthly basis.

This report presents the first quarter of groundwater samples collected and analyzed for the Sunol Pump Station.

Groundwater Sampling

On June 19, 1993, the three groundwater monitoring wells on-site (MW-1, MW-2 and MW-3) were sampled by LW Environmental Services of San Francisco. Prior to sampling, the groundwater elevations were measured to evaluate groundwater flow direction and gradient (see Table 1 Groundwater Depth and Elevation Data). The monitoring wells were purged of a

minimum of three well volumes using disposal hand bailers dedicated to each monitoring well (see Appendix B, Groundwater Monitoring Well Sampling Procedures). Groundwater samples were placed in liter bottles and 40 milliliter volatile organic analysis vials pending transportation to Precision Analytical Laboratories in Richmond, California.

Table 1
Groundwater Depth & Elevation Data

	MW-1		MW-2		MW-3	
	6-92	6-93	6-92	6-93	6-92	6-93
Depth to Groundwater	14.95	14.28	14.74	14.62	15.43	15.30
Groundwater Elevation	274.55	275.22	274.24	274.36	274.31	274.44
Well Elevation	289.50		288.98		289.74	
Total Well Depth	15.90		21.20		21.22	

Analytical Procedures

Groundwater samples were analyzed for the compounds listed below at the associated detection limits. The laboratory analytical results and sample Chain-of-Custody document are presented in Appendix A.

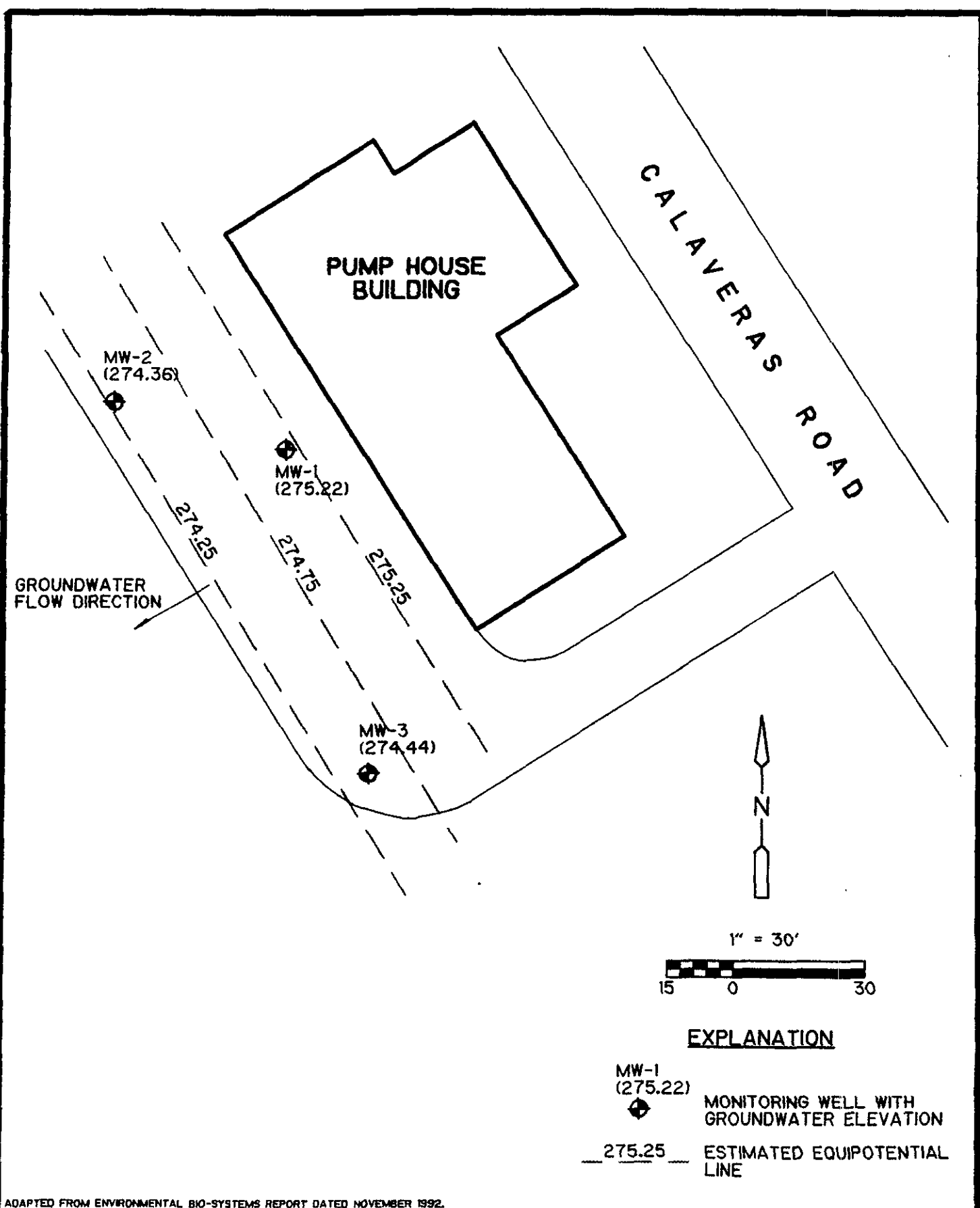
Compound Type	Detection Limits micrograms/liter ($\mu\text{g}/\text{l}$)
Total Petroleum Hydrocarbons as Gasoline TPH as Diesel	50
Total Oil and Grease	5,000
Acid and Base Neutral Extractables	2.0
Aromatic Volatile Hydrocarbons (BTEX)	0.3-3.0
Purgeable Halocarbons	0.2-2.0

Results and Conclusions



The results of this monitoring were non-detect for all compounds in groundwater with the exception of chloroform detected at a concentration of 3.7 $\mu\text{g}/\text{l}$ and 0.90 $\mu\text{g}/\text{l}$ in samples from groundwater monitoring wells MW-2 and MW-3, respectively (see Appendix A). Groundwater samples collected in June 1992 were non-detect for all analyzed chemical compounds including chloroform. Chloroform is a common analytical laboratory chemical and is also present in the municipal water supply along with various other halogenated compounds used as disinfecting agents. Its presence in the samples is likely the result of laboratory sample contamination.

The results of the groundwater elevation data is presented in Table 1 and displayed in Figure 1. The groundwater elevation has risen in all the groundwater monitoring wells since the last sampling in June 1992. The higher groundwater is likely the result of the heavy precipitation experienced in the winter of 1993. Groundwater flow continues to be to the southwest.

These results confirm that the contaminants released from the underground storage tanks have had no detectable impact on groundwater quality beneath the site.



EXPLANATION

- 
 MW-1 (275.22) MONITORING WELL WITH GROUNDWATER ELEVATION
- 
 275.25 ESTIMATED EQUIPOTENTIAL LINE

ADAPTED FROM ENVIRONMENTAL BIO-SYSTEMS REPORT DATED NOVEMBER 1992.

SAN ANTONIO PUMP STATION
GROUNDWATER MONITORING WELL LOCATION &
GROUNDWATER FLOW MAP

CDM
 environmental engineers, scientists,
 planners, & management consultants

Figure No. 1

APPENDIX A

**LABORATORY RESULTS AND
CHAIN OF CUSTODY**

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Date Received: 06/18/93

Date Analyzed: 06/18/93

Date Reported: 06/21/93

Job #: 74793

Attn: George Wilson
L&W Environmental Services, Inc.
2111 Jennings Street
San Francisco, CA 94124

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

Total Petroleum Hydrocarbon Analysis

EPA Method 5030

µg/L

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Gasoline</u>	<u>MDL</u>
74793-1	3174-MW1	ND<50	50
74793-2	3174-MW2	ND<50	50
74793-3	3174-MW3	ND<50	50

QA/QC: Matrix Spike Recovery for Gasoline: 118%
Matrix Spike Duplicate Recovery for Gasoline: 109%

MDL: Method Detection Limit. Compound below this level would not be detected.

Jaime Chow
Jaime Chow
Laboratory Director

JC/td

OUTSTANDING QUALITY AND SERVICE
CALIFORNIA STATE CERTIFIED LABORATORY

Precision Analytical Laboratory, Inc.

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Date Reported: 06/21/93

Job #: 74793

Attn: George Wilson
L&W Environmental Services, Inc.
2111 Jennings Street
San Francisco, CA 94124

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

Total Petroleum Hydrocarbon Analysis
DHS Extraction Method (LUFT)
mg/L

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Diesel</u>	<u>MDL</u>
74793-1	3174-MW1	ND<0.05	0.05
74793-2	3174-MW2	ND<0.05	0.05
74793-3	3174-MW3	ND<0.05	0.05

QA/QC: Matrix Spike Recovery for Diesel: 88%
Matrix Spike Duplicate Recovery for Diesel: 86%

MDL: Method Detection Limit. Compound below this level would not be detected.

Jaime Chow

Jaime Chow
Laboratory Director

JC/td

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Date Analyzed: 06/18/93
Date Reported: 06/21/93
Job #: 74793

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA
Matrix: Water

Aromatic Volatile Hydrocarbon Analysis
EPA Method 602
µg/L

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Benzene</u>	<u>MDL</u>	<u>Toluene</u>	<u>MDL</u>
74793-1	3174-MW1	ND<0.3	0.3	ND<0.3	0.3
74793-2	3174-MW2	ND<0.3	0.3	ND<0.3	0.3
74793-3	3174-MW3	ND<0.3	0.3	ND<0.3	0.3

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Ethyl- benzene</u>	<u>MDL</u>	<u>Xylenes</u>	<u>MDL</u>
74793-1	3174-MW1	ND<0.3	0.3	ND<0.6	0.6
74793-2	3174-MW2	ND<0.3	0.3	ND<0.6	0.6
74793-3	3174-MW3	ND<0.3	0.3	ND<0.6	0.6

QA/QC: Matrix Spike Recovery for Benzene: 98%
Matrix Spike Recovery for Toluene: 97%
Matrix Spike Recovery for o-Xylene: 105%

Matrix Spike Duplicate Recovery for Benzene: 96%
Matrix Spike Duplicate Recovery for Toluene: 95%
Matrix Spike Duplicate Recovery for o-Xylene: 103%

MDL: Method Detection Limit. Compound below this level would not be detected.

Jaime Chow
Jaime Chow
Laboratory Director

JC/td

Precision Analytical Laboratory, Inc.

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San Francisco, CA 94124

Date Received: 06/18/93
Date Reported: 06/21/93
Job #: 74793

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

Total Oil and Grease Analysis
Standard Methods, 17th Edition, 5520B
mg/L

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Total Oil and Grease</u>	<u>MDL</u>
74793-1	3174-MW1	ND<5	5
74793-2	3174-MW2	ND<5	5
74793-3	3174-MW3	ND<5	5

QA/QC: Matrix Spike Recovery: 80%

MDL: Method Detection Limit. Compound below this level would not be detected.

Jaime Chow
Jaime Chow
Laboratory Director

JC/td

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Date Received: 06/18/93
Date Reported: 06/21/93
Job #: 74793

Project: CDM/San Antonio Pump Station
5555 Calaveras Road, Sunol, CA
Matrix: Water

PURGEABLE HALOCARBONS
EPA Method 8010
µg/L

Lab I.D.:	74793-1	
<u>Client I.D.:</u>	<u>3174-MW1</u>	<u>MDL</u>
Bromomethane & Chloroethane	ND<2.0	2.0
Vinyl Chloride & Chloromethane	ND<1.0	1.0
Freon 113	ND<1.0	1.0
1,1-Dichloroethene	ND<0.4	0.4
Methylene Chloride	ND<1.0	1.0
Trans-1,2-Dichloroethene	ND<0.2	0.2
1,1-Dichloroethane	ND<0.3	0.3
Cis-1,2-Dichloroethene	ND<0.3	0.3
Chloroform	ND<0.2	0.2
1,1,1-Trichloroethane	ND<0.3	0.3
Carbon Tetrachloride	ND<0.2	0.2
1,2-Dichloroethane	ND<0.2	0.2
Trichloroethene	ND<0.3	0.3
1,2-Dichloropropene	ND<0.3	0.3
2-chloro-vinyl ether	ND<0.4	0.4
Bromodichloromethane	ND<0.2	0.2
T-1,3-Dichloropropene	ND<0.3	0.3
Cis-1,3-Dichloropropene	ND<0.2	0.2
1,1,2-Trichloroethane	ND<0.3	0.3
Tetrachloroethene	ND<0.3	0.3
Dibromochloromethane	ND<0.3	0.3
Chlorobenzene	ND<0.2	0.2
Bromoform	ND<0.3	0.3
1,1,2,2-Tetrachloroethane	ND<0.3	0.3
1,3-Dichlorobenzene	ND<0.3	0.3
1,4-Dichlorobenzene	ND<0.2	0.2
1,2-Dichlorobenzene	ND<0.2	0.2

MDL: Method Detection Limit

Jaime Chow

Jaime Chow
Laboratory Director

Page 1 of 2

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Date Reported: 06/21/93
Job #: 74793

Project: CDM/San Antonio Pump Station
5555 Calaveras Road, Sunol, CA
Matrix: Water

PURGEABLE HALOCARBONS
EPA Method 8010
 $\mu\text{g/L}$

Lab I.D.: 74793-1
Client I.D.: 3174-MW1

QA/QC: Matrix Spike Recovery for 1,1-Dichloroethane: 82%
Matrix Spike Recovery for Tetrachloroethene: 71%
Matrix Spike Recovery for Chlorobenzene: 86%

Matrix Spike Duplicate Recovery for 1,1-Dichloroethane: 87%
Matrix Spike Duplicate Recovery for Tetrachloroethene: 74%
Matrix Spike Duplicate Recovery for Chlorobenzene: 94%

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San Francisco, CA 94124

Date Received: 06/18/93
Date Reported: 06/21/93
Job #: 74793

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

PURGEABLE HALOCARBONS
EPA Method 8010
µg/L

Lab I.D.:	74793-2	
Client I.D.:	3174-MW2	MDL
Bromomethane & Chloroethane	ND<2.0	2.0
Vinyl Chloride & Chloromethane	ND<1.0	1.0
Freon 113	ND<1.0	1.0
1,1-Dichloroethene	ND<0.4	0.4
Methylene Chloride	ND<1.0	1.0
Trans-1,2-Dichloroethene	ND<0.2	0.2
1,1-Dichloroethane	ND<0.3	0.3
Cis-1,2-Dichloroethene	ND<0.3	0.3
Chloroform	3.7	0.2
1,1,1-Trichloroethane	ND<0.3	0.3
Carbon Tetrachloride	ND<0.2	0.2
1,2-Dichloroethane	ND<0.2	0.2
Trichloroethene	ND<0.3	0.3
1,2-Dichloropropene	ND<0.3	0.3
2-chloro-vinyl ether	ND<0.4	0.4
Bromodichloromethane	ND<0.2	0.2
T-1,3-Dichloropropene	ND<0.3	0.3
Cis-1,3-Dichloropropene	ND<0.2	0.2
1,1,2-Trichloroethane	ND<0.3	0.3
Tetrachloroethene	ND<0.3	0.3
Dibromochloromethane	ND<0.3	0.3
Chlorobenzene	ND<0.2	0.2
Bromoform	ND<0.3	0.3
1,1,2,2-Tetrachloroethane	ND<0.3	0.3
1,3-Dichlorobenzene	ND<0.3	0.3
1,4-Dichlorobenzene	ND<0.2	0.2
1,2-Dichlorobenzene	ND<0.2	0.2

MDL: Method Detection Limit

Jaime Chow (Signature)

Jaime Chow
Laboratory Director

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Date Reported: 06/21/93
Job #: 74793

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

PURGEABLE HALOCARBONS
EPA Method 8010
µg/L

Lab I.D.:	74793-3	
<u>Client I.D.:</u>	<u>3174-MW3</u>	<u>MDL</u>
Bromomethane & Chloroethane	ND<2.0	2.0
Vinyl Chloride & Chloromethane	ND<1.0	1.0
Freon 113	ND<1.0	1.0
1,1-Dichloroethene	ND<0.4	0.4
Methylene Chloride	ND<1.0	1.0
Trans-1,2-Dichloroethene	ND<0.2	0.2
1,1-Dichloroethane	ND<0.3	0.3
Cis-1,2-Dichloroethene	ND<0.3	0.3
Chloroform	0.90	0.2
1,1,1-Trichloroethane	ND<0.3	0.3
Carbon Tetrachloride	ND<0.2	0.2
1,2-Dichloroethane	ND<0.2	0.2
Trichloroethene	ND<0.3	0.3
1,2-Dichloropropene	ND<0.3	0.3
2-chloro-vinyl ether	ND<0.4	0.4
Bromodichloromethane	ND<0.2	0.2
T-1,3-Dichloropropene	ND<0.3	0.3
Cis-1,3-Dichloropropene	ND<0.2	0.2
1,1,2-Trichloroethane	ND<0.3	0.3
Tetrachloroethene	ND<0.3	0.3
Dibromochloromethane	ND<0.3	0.3
Chlorobenzene	ND<0.2	0.2
Bromoform	ND<0.3	0.3
1,1,2,2-Tetrachloroethane	ND<0.3	0.3
1,3-Dichlorobenzene	ND<0.3	0.3
1,4-Dichlorobenzene	ND<0.2	0.2
1,2-Dichlorobenzene	ND<0.2	0.2

MDL: Method Detection Limit

Jaime Chow (For)

Jaime Chow
Laboratory Director

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San Francisco, CA 94124

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
µg/L

Lab I.D.: 74793-1

Client I.D.: 3174-MW1

<u>ACID COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenol	ND<5	5
2-chlorophenol	ND<3	3
2-nitrophenol	ND<2	2
2,4-dimethylphenol	ND<2	2
2,4-dichlorophenol	ND<3	3
4-chloro-3-methylphenol	ND<4	4
2,4,6-trichlorophenol	ND<3	3
2,4-dinitrophenol	ND<5	5
4-nitrophenol	ND<6	6
2-methyl-4,6-dinitrophenol	ND<3	3
Pentachlorophenol	ND<5	5
2-methyl phenol	ND<3	3
4-methyl phenol	ND<3	3

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodimethylamine	ND<4	4
Bis(2-chloroethyl)ether	ND<4	4
1,3-dichlorobenzene	ND<2	2
1,4-dichlorobenzene	ND<3	3
1,2-dichlorobenzene	ND<3	3
Bis-(2-chloroisopropyl)ether	ND<8	8

ND = Not Detected

Jaime Chow
Jaime Chow
Laboratory Director

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Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
µg/L

Lab I.D.: 74793-1

Client I.D.: 3174-MW1

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodi-n-propylamine	ND<5	5
Hexachloroethane	ND<3	3
Nitrobenzene	ND<3	3
Isophorone	ND<2	2
Bis-(2-chloroethoxy)methane	ND<2	2
1,2,4-trichlorobenzene	ND<3	3
Napthalene	ND<2	2
Hexachlorobutadiene	ND<2	2
2-chloronapthalene	ND<3	3
2-methylnapthalene	ND<2	2
4-chloroaniline	ND<3	3
2-nitroaniline	ND<4	4
3-nitroaniline	ND<5	5
4-nitroaniline	ND<9	9
Hexachlorocyclopentadiene	ND<4	4
Dimethyl phthalate	ND<3	3
Acenaphthylene	ND<2	2
Acenaphthene	ND<2	2
2,4-dinitrotoluene	ND<5	5
2,6-dinitrotoluene	ND<3	3
Diethyl phthalate	ND<2	2
4-chlorophenylphenylether	ND<2	2
Fluorene	ND<3	3
N-nitrosodiphenylamine	ND<2	2
4-bromophenylphenylether	ND<2	2
Hexachlorobenzene	ND<2	2

ND = Not Detected

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Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
 $\mu\text{g/L}$

Lab I.D.: 74793-1

Client I.D.: 3174-MW1

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenanthrene	ND<2	2
Anthracene	ND<2	2
Di-n-butylphthalate	ND<2	2
Fluoranthene	ND<3	3
Pyrene	ND<5	5
Benzylbutylphthalate	ND<1	1
3,3'-dichlorobenzidine	ND<40	40
Benzo(a)anthracene	ND<2	2
Bis-(2-ethylhexyl)phthalate	ND<30	30
Chrysene	ND<1	1
Di-n-octylphthalate	ND<2	2
Benzo(b)fluoranthene	ND<5	5
Benzo(k)fluoranthene	ND<4	4
Benzo(a)pyrene	ND<2	2
Indeno(1,2,3-cd)pyrene	ND<5	5
Dibenzo(a,h)anthracene	ND<8	8
Benzo(ghi)perylene	ND<8	8

ND = Not Detected

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Date Received: 06/18/93

Date Reported: 06/21/93

Job #: 74793

Attn: George Wilson
L&W Environmental Services, Inc.
2111 Jennings Street
San Francisco, CA 94124

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
µg/L

Lab I.D.: 74793-2

Client I.D.: 3174-MW2

<u>ACID COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenol	ND<5	5
2-chlorophenol	ND<3	3
2-nitrophenol	ND<2	2
2,4-dimethylphenol	ND<2	2
2,4-dichlorophenol	ND<3	3
4-chloro-3-methylphenol	ND<4	4
2,4,6-trichlorophenol	ND<3	3
2,4-dinitrophenol	ND<5	5
4-nitrophenol	ND<6	6
2-methyl-4,6-dinitrophenol	ND<3	3
Pentachlorophenol	ND<5	5
2-methyl phenol	ND<3	3
4-methyl phenol	ND<3	3
<u>BASE/NEUTRAL COMPOUNDS</u>		
N-nitrosodimethylamine	ND<4	4
Bis(2-chloroethyl) ether	ND<4	4
1,3-dichlorobenzene	ND<2	2
1,4-dichlorobenzene	ND<3	3
1,2-dichlorobenzene	ND<3	3
Bis-(2-chloroisopropyl) ether	ND<8	8

ND = Not Detected

Jaime Chow (For)
Jaime Chow
Laboratory Director

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Acid & Base/Neutral Extractables
µg/L

Lab I.D.: 74793-2

Client I.D.: 3174-MW2

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodi-n-propylamine	ND<5	5
Hexachloroethane	ND<3	3
Nitrobenzene	ND<3	3
Isophorone	ND<2	2
Bis-(2-chloroethoxy)methane	ND<2	2
1,2,4-trichlorobenzene	ND<3	3
Napthalene	ND<2	2
Hexachlorobutadiene	ND<2	2
2-chloronapthalene	ND<3	3
2-methylnapthalene	ND<2	2
4-chloroaniline	ND<3	3
2-nitroaniline	ND<4	4
3-nitroaniline	ND<5	5
4-nitroaniline	ND<9	9
Hexachlorocyclopentadiene	ND<4	4
Dimethyl phthalate	ND<3	3
Acenaphthylene	ND<2	2
Acenaphthene	ND<2	2
2,4-dinitrotoluene	ND<5	5
2,6-dinitrotoluene	ND<3	3
Diethyl phthalate	ND<2	2
4-chlorophenylphenylether	ND<2	2
Fluorene	ND<3	3
N-nitrosodiphenylamine	ND<2	2
4-bromophenylphenylether	ND<2	2
Hexachlorobenzene	ND<2	2

ND = Not Detected

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Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
 $\mu\text{g/L}$

Lab I.D.: 74793-2

Client I.D.: 3174-MW2

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenanthrene	ND<2	2
Anthracene	ND<2	2
Di-n-butylphthalate	ND<2	2
Fluoranthene	ND<3	3
Pyrene	ND<5	5
Benzylbutylphthalate	ND<1	1
3,3'-dichlorobenzidine	ND<40	40
Benzo(a)anthracene	ND<2	2
Bis-(2-ethylhexyl)phthalate	ND<30	30
Chrysene	ND<1	1
Di-n-octylphthalate	ND<2	2
Benzo(b)fluoranthene	ND<5	5
Benzo(k)fluoranthene	ND<4	4
Benzo(a)pyrene	ND<2	2
Indeno(1,2,3-cd)pyrene	ND<5	5
Dibenzo(a,h)anthracene	ND<8	8
Benzo(ghi)perylene	ND<8	8

ND = Not Detected

Precision Analytical Laboratory, Inc.

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CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Date Received: 06/18/93

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Job #: 74793

Attn: George Wilson
L&W Environmental Services, Inc.
2111 Jennings Street
San Francisco, CA 94124

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
µg/L

Lab I.D.: 74793-3

Client I.D.: 3174-MW3

<u>ACID COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenol	ND<5	5
2-chlorophenol	ND<3	3
2-nitrophenol	ND<2	2
2,4-dimethylphenol	ND<2	2
2,4-dichlorophenol	ND<3	3
4-chloro-3-methylphenol	ND<4	4
2,4,6-trichlorophenol	ND<3	3
2,4-dinitrophenol	ND<5	5
4-nitrophenol	ND<6	6
2-methyl-4,6-dinitrophenol	ND<3	3
Pentachlorophenol	ND<5	5
2-methyl phenol	ND<3	3
4-methyl phenol	ND<3	3

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodimethylamine	ND<4	4
Bis(2-chloroethyl) ether	ND<4	4
1,3-dichlorobenzene	ND<2	2
1,4-dichlorobenzene	ND<3	3
1,2-dichlorobenzene	ND<3	3
Bis-(2-chloroisopropyl) ether	ND<8	8

ND = Not Detected

Jaime Chow
Jaime Chow
Laboratory Director

Precision Analytical Laboratory, Inc.

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Date Received: 06/18/93

Date Reported: 06/21/93

Job #: 74793

Attn: George Wilson
L&W Environmental Services, Inc.

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
µg/L

Lab I.D.: 74793-3

Client I.D.: 3174-MW3

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodi-n-propylamine	ND<5	5
Hexachloroethane	ND<3	3
Nitrobenzene	ND<3	3
Isophorone	ND<2	2
Bis-(2-chloroethoxy)methane	ND<2	2
1,2,4-trichlorobenzene	ND<3	3
Napthalene	ND<2	2
Hexachlorobutadiene	ND<2	2
2-chloronapthalene	ND<3	3
2-methylnapthalene	ND<2	2
4-chloroaniline	ND<3	3
2-nitroaniline	ND<4	4
3-nitroaniline	ND<5	5
4-nitroaniline	ND<9	9
Hexachlorocyclopentadiene	ND<4	4
Dimethyl phthalate	ND<3	3
Acenaphthylene	ND<2	2
Acenaphthene	ND<2	2
2,4-dinitrotoluene	ND<5	5
2,6-dinitrotoluene	ND<3	3
Diethyl phthalate	ND<2	2
4-chlorophenylphenylether	ND<2	2
Fluorene	ND<3	3
N-nitrosodiphenylamine	ND<2	2
4-bromophenylphenylether	ND<2	2
Hexachlorobenzene	ND<2	2

ND = Not Detected

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Job #: 74793

Attn: George Wilson
L&W Environmental Services, Inc.

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
 $\mu\text{g/L}$

Lab I.D.: 74793-3

Client I.D.: 3174-MW3

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenanthrene	ND<2	2
Anthracene	ND<2	2
Di-n-butylphthalate	ND<2	2
Fluoranthene	ND<3	3
Pyrene	ND<5	5
Benzylbutylphthalate	ND<1	1
3,3'-dichlorobenzidine	ND<40	40
Benzo(a)anthracene	ND<2	2
Bis-(2-ethylhexyl)phthalate	ND<30	30
Chrysene	ND<1	1
Di-n-octylphthalate	ND<2	2
Benzo(b)fluoranthene	ND<5	5
Benzo(k)fluoranthene	ND<4	4
Benzo(a)pyrene	ND<2	2
Indeno(1,2,3-cd)pyrene	ND<5	5
Dibenzo(a,h)anthracene	ND<8	8
Benzo(ghi)perylene	ND<8	8

ND = Not Detected

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Attn: George Wilson
L&W Environmental Services, Inc.
2111 Jennings Street
San Francisco, CA 94124

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
µg/L

Lab I.D.: 74793-Method Blank

Client I.D.: Method Blank

<u>ACID COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenol	ND<5	5
2-chlorophenol	ND<3	3
2-nitrophenol	ND<2	2
2,4-dimethylphenol	ND<2	2
2,4-dichlorophenol	ND<3	3
4-chloro-3-methylphenol	ND<4	4
2,4,6-trichlorophenol	ND<3	3
2,4-dinitrophenol	ND<5	5
4-nitrophenol	ND<6	6
2-methyl-4,6-dinitrophenol	ND<3	3
Pentachlorophenol	ND<5	5
2-methyl phenol	ND<3	3
4-methyl phenol	ND<3	3
<u>BASE/NEUTRAL COMPOUNDS</u>		
N-nitrosodimethylamine	ND<4	4
Bis(2-chloroethyl) ether	ND<4	4
1,3-dichlorobenzene	ND<2	2
1,4-dichlorobenzene	ND<3	3
1,2-dichlorobenzene	ND<3	3
Bis-(2-chloroisopropyl) ether	ND<8	8

ND = Not Detected

Jaime Chow
Jaime Chow

Laboratory Director

JC/td

Precision Analytical Laboratory, Inc.

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L&W Environmental Services, Inc.

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
 $\mu\text{g/L}$

Lab I.D.: 74793-Method Blank

Client I.D.: Method Blank

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodi-n-propylamine	ND<5	5
Hexachloroethane	ND<3	3
Nitrobenzene	ND<3	3
Isophorone	ND<2	2
Bis-(2-chloroethoxy)methane	ND<2	2
1,2,4-trichlorobenzene	ND<3	3
Napthalene	ND<2	2
Hexachlorobutadiene	ND<2	2
2-chloronapthalene	ND<3	3
2-methylnapthalene	ND<2	2
4-chloroaniline	ND<3	3
2-nitroaniline	ND<4	4
3-nitroaniline	ND<5	5
4-nitroaniline	ND<9	9
Hexachlorocyclopentadiene	ND<4	4
Dimethyl phthalate	ND<3	3
Acenaphthylene	ND<2	2
Acenaphthene	ND<2	2
2,4-dinitrotoluene	ND<5	5
2,6-dinitrotoluene	ND<3	3
Diethyl phthalate	ND<2	2
4-chlorophenylphenylether	ND<2	2
Fluorene	ND<3	3
N-nitrosodiphenylamine	ND<2	2
4-bromophenylphenylether	ND<2	2
Hexachlorobenzene	ND<2	2

ND = Not Detected

Precision Analytical Laboratory, Inc.

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Date Received: 06/18/93

Date Reported: 06/21/93

Job #: 74793

Attn: George Wilson
L&W Environmental Services, Inc.

Project: CDM/San Antonio Pump Station
5555 Calaveras Road
Sunol, CA

Matrix: Water

EPA Method 625 - Water
Acid & Base/Neutral Extractables
 $\mu\text{g/L}$

Lab I.D.: 74793-Method Blank

Client I.D.: Method Blank

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenanthrene	ND<2	2
Anthracene	ND<2	2
Di-n-butylphthalate	ND<2	2
Fluoranthene	ND<3	3
Pyrene	ND<5	5
Benzylbutylphthalate	ND<1	1
3,3'-dichlorobenzidine	ND<40	40
Benzo(a)anthracene	ND<2	2
Bis-(2-ethylhexyl)phthalate	ND<30	30
Chrysene	ND<1	1
Di-n-octylphthalate	ND<2	2
Benzo(b)fluoranthene	ND<5	5
Benzo(k)fluoranthene	ND<4	4
Benzo(a)pyrene	ND<2	2
Indeno(1,2,3-cd)pyrene	ND<5	5
Dibenzo(a,h)anthracene	ND<8	8
Benzo(ghi)perylene	ND<8	8

ND = Not Detected

CHAIN OF CUSTODY

REG RUSH

24-hr

SAMPLERS: (Signature) *Edmund Jones*

PROJECT NAME: (Print) *CDM San Antonio Pump Station* JOB NUMBER: *3174*

DESCRIPTION: *Groundwater Monitoring*

ADDRESS: *5555 Calaveras Road, Sunol, CA*

ANALYSIS REQUESTED		TOTAL PETROLEUM HYDROCARBONS	BTEX	VOC - EPA 8240	TOTAL OIL AND GREASE	TETRAETHYL LEAD EPA - 8270	METALS	8010	8020	REMARKS
X	X	X	X	X	X	X	X	X	X	<i>2 lbs 6 vials</i>
X	X	X	X	X	X	X	X	X	X	<i>3 lbs 6 vials</i>
X	X	X	X	X	X	X	X	X	X	<i>3 lbs 6 vials</i>

RELINQUISHED BY: (Signature) <i>Edmund Jones</i>	DATE <i>6-18-93</i>	RECEIVED BY: (Signature) <i>Kukwinder Sidhu</i>	DATE <i>6-18-93</i>
	TIME <i>2:25 pm</i>		TIME <i>2:25 pm</i>
RELINQUISHED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
	TIME		TIME
RELINQUISHED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
	TIME		TIME
RELINQUISHED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
	TIME		TIME
RELINQUISHED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
	TIME		TIME

APPENDIX B

**LW ENVIRONMENTAL -
GROUNDWATER MONITORING
WELL SAMPLING PROCEDURE**



Environmental Services, Inc.

2111 Jennings Street, San Francisco, CA 94124-3224, Phone (415) 822-4555 FAX (415) 822-5290

**GROUNDWATER SAMPLING
JUNE 1993
SAN ANTONIO PUMP STATION
5555 CALAVERAS ROAD
SUNOL, CALIFORNIA**

JUNE 25, 1993

LWES PROJECT NUMBER 3174


Prepared for:

Mr. Ben Swann
Camp Dresser & McKee
100 Pringle Avenue, Suite 300
Walnut Creek, California 94596

Prepared by:



Sudhir Avalakki
Environmental Engineer



Ron Collings
Project Manager

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1.0 INTRODUCTION	1
2.0 SITE DESCRIPTION	1
3.0 GROUNDWATER SAMPLING	1
4.0 GROUNDWATER ELEVATION AND FLOW	2
5.0 LABORATORY ANALYSES	2
6.0 LABORATORY ANALYTICAL RESULTS	2
7.0 DISCUSSION	3
8.0 EXCLUSION	3

TABLES

APPENDIX A: CHAIN-OF-CUSTODY FORM
LABORATORY CERTIFICATES

LIST OF TABLES

<u>NUMBER</u>	<u>TITLE</u>
1	Laboratory Analytical Results for TPHg, TPHd, BTEX, and Total Oil & Grease Detected in Groundwater
2	Laboratory Analytical Results for Purgeable Halocarbons Detected in Groundwater
3	Laboratory Analytical Results for Acid & Base/Neutral Extractables Detected in Groundwater
4	Groundwater Measurements

**GROUNDWATER SAMPLING
JUNE 1993
SAN ANTONIO PUMP STATION
5555 CALAVERAS ROAD
SUNOL, CALIFORNIA**

1.0 INTRODUCTION

At the request of Camp Dresser & McKee ("the Client"), L & W Environmental Services, Inc. (LWES) performed groundwater sampling of three monitoring wells installed at the San Antonio Pump Station. The pump station is located at 5555 Calaveras Road, Sunol, California ("the Site"). The work was performed in accordance with the recommendations of the California Regional Water Quality Control Board's document entitled "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites."

The proposed groundwater monitoring activities were performed to assess groundwater conditions below the Site.

2.0 SITE DESCRIPTION

The Site is located on the north side of Calaveras Road, approximately 2 miles of I-680 South. The Site is occupied by a building, paved area and several planting areas.

3.0 GROUNDWATER SAMPLING

Groundwater samples were collected on June 18, 1993. Depth-to-groundwater was measured using an electric water level meter prior to groundwater sampling activities. Groundwater sampling was initiated using a pre-cleaned pump to purge water from the wells prior to sampling. Since sufficient head was not available, purging was performed manually (hand-bailed) from each monitoring well using a Teflon bailer. Approximately five to six well casing volumes of water was bailed out of the wells prior to sampling. Parameters such as water clarity, color, odor, and volume extracted were noted during purging. Parameters such as pH, temperature, and specific conductance were not measured since purging was done manually. The wells were purged nearly continuously until all stagnant water was removed.

One groundwater sample was collected manually (hand-bailed) from each well using a Teflon bailer from each monitoring well. The sample was transferred into 40-mL VOA vials with Teflon septa and 1-liter amber-colored glass bottles. The samples were stored in a chilled cooler containing crushed ice to preserve the sample at 4°C during

delivery to the laboratory. Strict chain-of-custody protocols were followed in all phases of sample handling.

All equipment used during this investigation which might come into contact with contaminated materials were thoroughly cleaned before and after each use. This was accomplished by washing with Alconox (a laboratory-grade detergent) and/or cleaning with high-pressure hot water (steam cleaning).

4.0 GROUNDWATER ELEVATION AND FLOW

Groundwater level measurements were recorded using an electronic water-level probe attached to an engineer's measuring tape graduated to 0.01-foot intervals. Measurements were recorded from the top of the groundwater surface to the top of the well casing. The difference between the top of the well elevation and the depth to the top of the groundwater surface is a measurement of the potentiometric surface of the groundwater table. By establishing the potentiometric surface of each well, the Client can predict the direction of the groundwater flow at the Site.

Table 4 lists the groundwater elevations, the measured well depth, well volume, and the amount of water purged for the three monitoring wells.

5.0 LABORATORY ANALYSES

The groundwater samples were analyzed by Precision Analytical Laboratory of Richmond, California, a state-certified laboratory. The groundwater samples collected from the three monitoring wells were analyzed for:

- TPHg using EPA Method 5030;
- TPHd using the DHS Extraction Method (LUFT);
- BTEX using EPA Method 602;
- Total Oil and Grease using Standard Method, 17th Edition 5520B;
- Purgeable Halocarbons using EPA Method 8010; and
- Acid & Base/Neutral Extractables using EPA Method 625.

The samples were analyzed on a 24-hour turnaround basis.

6.0 LABORATORY ANALYTICAL RESULTS

The laboratory analytical results are summarized in Tables 1 through 3. Copies of the Chain-of-Custody form and laboratory certificates are included in Appendix A. The results are as follows:

Analysis of groundwater samples taken on June 18, 1993, indicated:

- TPHg concentrations were less than 0.05 mg/L (not detected);
- TPHd concentrations were less than 0.05 mg/L (not detected);
- Benzene concentrations were less than 0.0003 mg/L (not detected);
- Toluene concentrations were less than 0.0003 mg/L (not detected);
- Ethylbenzene concentrations were less than 0.0003 mg/L (not detected);
- Xylene concentrations were less than 0.0006 mg/L (not detected);
- Total oil & grease concentrations were less than 5 mg/L (not detected);
- Chloroform concentrations ranged from less than 0.0002 mg/L (not detected) to 0.0037 mg/L;
- Concentration of all purgeable halocarbons except chloroform were less than the Method Detection Limit (MDL); and
- Concentration of all acid & base/neutral extractables were less than the MDL.

7.0 DISCUSSION

Laboratory analytical results indicated non-detectable concentrations of TPHg, TPHd, BTEX, total oil & grease, acid & base/neutral extractables, and purgeable halocarbons (except for low concentrations of chloroform) in the groundwater samples collected from monitoring wells at the Site. Low concentrations of chloroform were detected in groundwater samples obtained from monitoring well MW2 (3.7 µg/L) and monitoring well MW3 (0.90 µg/L). Chloroform was not detected in the groundwater sample collected from monitoring well MW1.

8.0 EXCLUSION

LWES assumes no responsibility or liability for the reliance hereon or use hereof of the information contained in this report by anyone other than the party to whom it is addressed.

TABLE 1

LABORATORY ANALYTICAL RESULTS FOR
 TPHg, TPHd, BTEX, and TOTAL OIL & GREASE DETECTED IN
 GROUNDWATER
 JUNE 1993
 SAN ANTONIO PUMP STATION
 SUNOL, CALIFORNIA

(concentration expressed in mg/L)

Compound	MW1	MW2	MW3
TPHg	ND<.05	ND<.05	ND<.05
TPHd	ND<.05	ND<.05	ND<.05
Benzene	ND<.0003	ND<.0003	ND<.0003
Toluene	ND<.0003	ND<.0003	ND<.0003
Ethylbenzene	ND<.0003	ND<.0003	ND<.0003
Xylene	ND<.0006	ND<.0006	ND<.0006
Total Oil and Grease	ND<5	ND<5	ND<5

ND Not Detected

TABLE 2

**LABORATORY ANALYTICAL RESULTS FOR
PURGEABLE HALOCARBONS DETECTED IN GROUNDWATER
JUNE 1993
SAN ANTONIO PUMP STATION
SUNOL, CALIFORNIA**

(concentration expressed in mg/L)

Compound	MW1	MW2	MW3
Bromomethane and Chloroethane	ND<.002	ND<.002	ND<.002
Vinyl Chloride & Chloromethane	ND<.001	ND<.001	ND<.001
Freon 113	ND<.001	ND<.001	ND<.001
1,1-Dichloroethene	ND<.0004	ND<.0004	ND<.0004
Methylene Chloride	ND<.001	ND<.001	ND<.001
Trans-1,2-Dichloroethene	ND<.0002	ND<.0002	ND<.0002
1,1-Dichloroethene	ND<.0003	ND<.0003	ND<.0003
Cis-1,2-Dichloroethene	ND<.0003	ND<.0003	ND<.0003
Chloroform	ND<.0002	ND<.0002	ND<.0002
1,1,1-Trichloroethane	ND<.0003	ND<.0003	ND<.0003
Carbon Tetrachloride	ND<.0002	ND<.0002	ND<.0002
1,2-Dichloroethane	ND<.0002	ND<.0002	ND<.0002
Trichloroethane	ND<.0003	ND<.0003	ND<.0003
1,2-Dichloropropene	ND<.0003	ND<.0003	ND<.0003
2-chloro-vinyl ether	ND<.0004	ND<.0004	ND<.0004
Bromo-dichloromethane	ND<.0002	ND<.0002	ND<.0002
T-1,3-Dichloropropene	ND<.0003	ND<.0003	ND<.0003
Cis-1,3-Dichloropropene	ND<.0002	ND<.0002	ND<.0002
1,1,2-Trichloroethane	ND<.0003	ND<.0003	ND<.0003
Tetra-chloroethene	ND<.0003	ND<.0003	ND<.0003
Dibromo-chloromethane	ND<.0003	ND<.0003	ND<.0003
Chlorobenzene	ND<.0002	ND<.0002	ND<.0002
Bromoform	ND<.0003	ND<.0003	ND<.0003
1,1,2,2-Tetra-chloroethane	ND<.0003	ND<.0003	ND<.0003
1,3-Dichlorobenzene	ND<.0003	ND<.0003	ND<.0003
1,4-Dichlorobenzene	ND<.0002	ND<.0002	ND<.0002
1,2-Dichlorobenzene	ND<.0002	ND<.0002	ND<.0002

ND Not Detected

TABLE 3

**LABORATORY ANALYTICAL RESULTS FOR
ACID & BASE/NEUTRAL EXTRACTABLES DETECTED IN
GROUNDWATER**

JUNE 1993

**SAN ANTONIO PUMP STATION
SUNOL, CALIFORNIA**

(concentration expressed in mg/L)

Acid Compound	MW1	MW2	MW3	Blank
Phenol	ND<.005	ND<.005	ND<.005	ND<.005
2-chlorophenol	ND<.003	ND<.003	ND<.003	ND<.003
2-nitrophenol	ND<.002	ND<.002	ND<.002	ND<.002
2,4-dimethylphenol	ND<.002	ND<.002	ND<.002	ND<.002
2,4-dichlorophenol	ND<.003	ND<.003	ND<.003	ND<.003
4-chloro-3-methylphenol	ND<.004	ND<.004	ND<.004	ND<.004
2,4,6-trichlorophenol	ND<.003	ND<.003	ND<.003	ND<.003
2,4-trichlorophenol	ND<.005	ND<.005	ND<.005	ND<.005
4-nitrophenol	ND<.006	ND<.006	ND<.006	ND<.006
2-methyl-4,6-dinitrophenol	ND<.003	ND<.003	ND<.003	ND<.003
Pentachlorophenol	ND<.005	ND<.005	ND<.005	ND<.005
2-methyl phenol	ND<.003	ND<.003	ND<.003	ND<.003
4-methyl phenol	ND<.003	ND<.003	ND<.003	ND<.003
Base/Neutral Compounds				
N-nitrosodimethylamine	ND<.004	ND<.004	ND<.004	ND<.004
Bis(2-chloroethyl) ether	ND<.004	ND<.004	ND<.004	ND<.004
1,3-dichlorobenzene	ND<.002	ND<.002	ND<.002	ND<.002
1,4-dichlorobenzene	ND<.003	ND<.003	ND<.003	ND<.003
1,2-dichlorobenzene	ND<.003	ND<.003	ND<.003	ND<.003
Bis-(2-chloroisopropyl) ether	ND<.008	ND<.008	ND<.008	ND<.008
N-nitrosodi-n-propylamine	ND<.005	ND<.005	ND<.005	ND<.005
Hexachloroethane	ND<.003	ND<.003	ND<.003	ND<.003
Nitrobenzene	ND<.003	ND<.003	ND<.003	ND<.003
Isophorone	ND<.002	ND<.002	ND<.002	ND<.002
Bis-(2-chloroethoxy) methane	ND<.002	ND<.002	ND<.002	ND<.002
1,2,4-trichlorobenzene	ND<.003	ND<.003	ND<.003	ND<.003
Napthalene	ND<.002	ND<.002	ND<.002	ND<.002
Hexachlorobutadiene	ND<.002	ND<.002	ND<.002	ND<.002
2-chloronaphtalene	ND<.003	ND<.003	ND<.003	ND<.003

TABLE 3 (CONTINUED)

Base/Neutral Compounds	MW1	MW2	MW3	Blank
2-methylnaphthalene	ND<.002	ND<.002	ND<.002	ND<.002
4-chloroaniline	ND<.003	ND<.003	ND<.003	ND<.003
2-nitroaniline	ND<.004	ND<.004	ND<.004	ND<.004
3-nitroaniline	ND<.005	ND<.005	ND<.005	ND<.005
4-nitroaniline	ND<.009	ND<.009	ND<.009	ND<.009
Hexachlorocyclo pentadiene	ND<.004	ND<.004	ND<.004	ND<.004
Dimethyl Phthalate	ND<.003	ND<.003	ND<.003	ND<.003
Acenaphthylene	ND<.002	ND<.002	ND<.002	ND<.002
Acenaphthene	ND<.002	ND<.002	ND<.002	ND<.002
2,4-dinitrotoluene	ND<.005	ND<.005	ND<.005	ND<.005
2,6-dinitrotoluene	ND<.003	ND<.003	ND<.003	ND<.003
Diethyl phthalate	ND<.002	ND<.002	ND<.002	ND<.002
4-chlorophenyl phenylether	ND<.002	ND<.002	ND<.002	ND<.002
Flourene	ND<.003	ND<.003	ND<.003	ND<.003
N-nitrosodi phenylamine	ND<.002	ND<.002	ND<.002	ND<.002
4-bromophenyl phenylether	ND<.002	ND<.002	ND<.002	ND<.002
Hexachlorobenzene	ND<.002	ND<.002	ND<.002	ND<.002
Phenanthrene	ND<.002	ND<.002	ND<.002	ND<.002
Anthracene	ND<.002	ND<.002	ND<.002	ND<.002
Di-n-butylphthalate	ND<.002	ND<.002	ND<.002	ND<.002
Fluoranthene	ND<.003	ND<.003	ND<.003	ND<.003
Pyrene	ND<.005	ND<.005	ND<.005	ND<.005
Benzylbutyl phthalate	ND<.001	ND<.001	ND<.001	ND<.001
3,3'- dichlorobenzidine	ND<.040	ND<.040	ND<.040	ND<.040
Benezo(a) anthracene	ND<.002	ND<.002	ND<.002	ND<.002
Bis-(2-ethylhexyl) phthalate	ND<.030	ND<.030	ND<.030	ND<.030
Chrysene	ND<.001	ND<.001	ND<.001	ND<.001
Di-n-octylphthalate	ND<.002	ND<.002	ND<.002	ND<.002
Benzo(b) fluoranthene	ND<.005	ND<.005	ND<.005	ND<.005
Benzo(k) fluoranthene	ND<.004	ND<.004	ND<.004	ND<.004
Benzo(a) pyrene	ND<.002	ND<.002	ND<.002	ND<.002
Indeno- (1,2,3- cd)pyrene	ND<.005	ND<.005	ND<.005	ND<.005
Dibenzo(a,h) anthracene	ND<.008	ND<.008	ND<.008	ND<.008
Benzo(ghi) perylene	ND<.008	ND<.008	ND<.008	ND<.008

ND Not Detected

TABLE 4
GROUNDWATER MEASUREMENTS
JUNE 1993
SAN ANTONIO PUMP STATION
SUNOL, CALIFORNIA

Well	Depth to Groundwater (feet)	Measured Well Depth (feet)	Well Volume (gallons)	Amount Purged (gallons)
MW1	14.28	16.00	1.12	8
MW2	14.62	21.42	4.43	30
MW3	15.30	21.44	3.96	20

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