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GEOMATRIX

ENVIRONMENTAL PROTECTION

95 OCT 19 PM 1:58

18 October 1995
Project 2868.02

Ms. Amy Leach
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Room 250
Alameda, California 94502

Subject: Quarterly Monitoring Report
July through September 1995
National Guard Organizational Maintenance Shop No. 35
16501 Ashland Avenue
San Lorenzo, California

Dear Ms. Leach:

On behalf of the Division of State Architect (DSA) and the National Guard, Geomatrix Consultants, Inc. (Geomatrix), is submitting the Groundwater Monitoring Report for the quarter July through September 1995 for the National Guard site at 16501 Ashland Avenue in San Lorenzo, California. This sampling event was performed in response to a 22 December 1994 letter from Alameda County Department of Environmental Health to the DSA.

If you have any questions or require additional information, please contact Mr. Homer Lin of the DSA at (916) 445-6939 or either of the undersigned.

Sincerely yours,

Geomatrix Consultants, Inc.

Lisa D. Rowles, R.G.
Project Manager

REGISTERED GEOLOGIST
LISA D. ROWLES
No. 4559
Exp 11/96
STATE OF CALIFORNIA

Sally E. Goodin, R.G.
Project Director

LDR/SEG/bab
CONTR\2868Q395.LTR

Attachment

cc: H. Lin, P.E. - Division of State Architect
Bernadet Shields, SFC - National Guard

GEOMATRIX

QUARTERLY MONITORING REPORT
JULY-SEPTEMBER 1995
National Guard
Organizational Maintenance Shop No. 35
16501 Ashland Avenue
San Lorenzo, California

Prepared for

Division of State Architect
1300 I Street
Sacramento, California 95814

October 1995
Project No. 2868

Geomatrix Consultants

GEOMATRIX

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDIX

QUARTERLY MONITORING REPORT
JULY-SEPTEMBER 1995
National Guard
Organizational Maintenance Shop No. 35
San Lorenzo, California

1.0 INTRODUCTION

This report summarizes groundwater monitoring activities performed by Geomatrix Consultants, Inc. (Geomatrix), on behalf of the Division of the State Architect (DSA), for the period July through September 1995, at the National Guard Organizational Maintenance Shop No. 35 located at 16501 Ashland Avenue, San Lorenzo, California (the Site; Figure 1). Geomatrix performed the sampling in response to a 22 December 1994 letter from Alameda County Department of Environmental Health.

This report contains the following information:

- a description of the methods used to measure groundwater levels and collect groundwater samples
- monthly groundwater level measurements
- potentiometric surface maps
- groundwater analytical data for samples collected on 11 August 1995
- a description of quality assurance/quality control procedures and results.

The locations of the monitoring wells at the site are shown on Figure 2.

2.0 WATER LEVEL MEASUREMENTS

Groundwater levels were measured in the three existing monitoring wells on 18 July, 11 August, and 9 September 1995. Groundwater level measurements and results are discussed below.

2.1 METHODS FOR MEASURING WATER LEVELS

Groundwater levels were measured monthly in the three on-site monitoring wells (MW-1, MW-2, and MW-3). Water levels were measured in the wells to the nearest 0.01 foot using an electric sounder. Prior to each measurement, the electric sounder was washed with laboratory-grade detergent, rinsed with deionized water, and wiped dry. The elevation of the water table was calculated by subtracting the depth to water from the elevations of the tops of the well casings.

2.2 RESULTS OF GROUNDWATER LEVEL MEASUREMENTS

The water-level elevations calculated from measurements collected by Geomatrix are presented in Table 1. In July, depth to water ranged from 6.55 to 9.0 feet below top of casing, and the groundwater elevation ranged from 25.54 to 28.98 feet above mean sea level. In September, depth to water ranged from 6.90 to 8.38 feet below top of casing and the groundwater elevation ranged from 27.64 to 27.94 feet above mean sea level. Since June of last quarter, the groundwater elevation has dropped 1.47 feet in MW-1, 1.46 feet in MW-2, and 1.39 feet in MW-1.

Potentiometric surface maps for July, August, and September 1995 are shown in Figures 3 through 6. These maps indicate that groundwater flow has consistently been towards the north during the third quarter. This general flow direction has been consistent since January 1995. The hydraulic gradient has ranged from approximately 0.07 foot per foot (ft/ft) in July 1995 to 0.006 ft/ft in September 1995.

3.0 QUARTERLY GROUNDWATER SAMPLING AND ANALYSIS

3.1 METHODOLOGY FOR SAMPLE COLLECTION

The three existing monitoring wells were sampled on 11 August 1995. Prior to sampling, a disposable polyethylene bailer and Flexi-Dip oil/water interface probe were used to detect whether free product was present in well MW-3. The probe was washed with laboratory-grade detergent, rinsed with deionized water, and wiped dry before the measurement. No free product was detected by either the bailer or the interface probe. To remove standing

water and obtain samples representative of the formation, at least four casing volumes were purged from each well before a groundwater sample was collected. The wells were purged with a diaphragm pump and PVC intake tubing. A new intake hose was used at each well. The temperature, pH, and specific conductance of the purged groundwater were measured periodically during purging. These parameters stabilized and the produced water was visually clear prior to sample collection.

Groundwater samples were collected with disposable polyethylene bailers rinsed with deionized water immediately before sampling. Samples were collected by lowering the bailer below the water surface to approximately mid-screen level. The bailer volume was then carefully poured into EPA-approved containers, properly labeled, placed in an ice-filled cooler, and delivered to a state-certified analytical laboratory under Geomatrix chain-of-custody procedures. The samples were analyzed by Chromalab of Pleasanton, California, for total petroleum hydrocarbons (TPH) as diesel according to Environmental Protection Agency (EPA) Method 8015 (modified); TPH as gasoline according to modified EPA Method 8015; and benzene, toluene, ethylbenzene, and xylenes (BTEX) according to EPA Method 8020. Copies of laboratory analytical results and chain-of-custody records are included in Appendix A.

3.2 RESULTS OF CHEMICAL ANALYSIS

The analytical results for groundwater samples from MW-1, MW-2, and MW-3 are presented in Table 2. No TPH as diesel, TPH as gasoline, or BTEX were detected in the samples from wells MW-1 and MW-2. In the samples collected from monitoring well MW-3, TPH as gasoline was detected at 710 micrograms per liter (μg/l); benzene was detected at 11 μg/l; toluene at 3.2 μg/l; xylenes at 23 μg/l; and ethyl benzene at 110 μg/l; no TPH-diesel was detected. These concentrations are significantly lower than the samples previously collected from well MW-3 on 14 July 1993 when TPH-gasoline was detected at 4100 μg/l and xylenes were detected at 640 μg/l. In comparison to the most recent sampling event of 3 May 1995, the concentrations have not changed significantly (Table 3). Monitoring well sample results for 11 August 1995 are presented on Figure 6.

4.0 QUALITY ASSURANCE AND QUALITY CONTROL

4.1 QA/QC PROCEDURES

Quality control samples were collected during the investigation and well sampling activities to provide quality assurance. These procedures are a part of Geomatrix's standard practice during hydrogeological investigations, and are conducted so that the data generated represent actual field conditions. For this sampling round, Geomatrix collected a field blank, and the laboratory analyzed three method blanks and one matrix spike/matrix spike duplicate to access precision, accuracy, and completeness.

4.2 QA/QC REVIEW RESULTS

Toluene was detected at 0.7 μg/l in the field blank collected during the sampling activities. Therefore, the toluene detected in the sample from well MW-3 may not be representative of actual groundwater conditions at that well. The discrepancy is probably low however given the fact that the detection in the field blank was low.

The laboratory quality control sample results are presented in Table 4. All laboratory matrix spike and surrogate recoveries were within quality control limits and the data has met the requirements of precision, accuracy, and completeness as defined by Geomatrix. The data generated are considered complete in that these data are considered to adequately represent groundwater conditions during this quarter.

TABLES

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TABLE 1

WATER LEVEL MEASUREMENTS
National Guard Organizational Maintenance Shop
San Lorenzo, California

Well No.	Date	Depth Below TOC[1] (feet)	TOC Elevation (feet, msl[2])	Groundwater Elevation (feet, msl)
MW-1	11/22/94	8.92	35.53	26.61
	1/6/95	8.31	35.53	27.22
	4/20/95	5.12	35.53	30.41
	5/3/95	5.34	35.53	30.19
	6/9/95	6.14	35.53	29.39
	7/18/95	6.55	35.53	28.98
	8/11/95	7.13	35.53	28.40
	9/8/95	7.61	35.53	27.92
MW-2	11/22/94	9.41	36.32	26.91
	1/6/95	8.50	36.32	27.82
	4/20/95	6.16	36.32	30.16
	5/3/95	6.13	36.32	30.19
	6/9/95	6.92	36.32	29.40
	7/18/95	7.47	36.32	28.85
	8/11/95	7.90	36.32	28.42
	9/8/95	8.38	36.32	27.94
MW-3	11/22/95	7.89	34.54	26.65
	1/6/95	7.03	34.54	27.51
	4/20/95	4.55	34.54	29.99
	5/3/95	4.70	34.54	29.84
	6/9/95	5.51	34.54	29.03
	7/18/95	9.00	34.54	25.54
	8/11/95	6.48	34.54	28.06
	9/8/95	6.90	34.54	27.64

Note:

1 TOC = Top of casing (measuring point).
2 msl = Above mean sea level.

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TABLE 2

GROUNDWATER ANALYTICAL RESULTS[1]
AUGUST 1995
National Guard Organizational Maintenance Shop
San Lorenzo, California

Concentrations in micrograms per liter (µg/l)

Sample No.	Date Collected	TPH-d[2]	TPH-g[3]	Benzene	Toluene	Xylenes	Ethylbenzene
MW-1	8/11/95	<50	<50	<0.5	<0.5	<0.5	<0.5
MW-2	8/11/95	<50	<50	<0.5	<0.5	<0.5	<0.5
MW-3	8/11/95	<50	710	11	3.2	23	110

Notes:

1 Chemical analyses performed by Chromalab, Inc., of Pleasanton, California. Laboratory analytical reports detailing the analyses performed, method detection limits for each constituent, and analytical results are included in Appendix A.

2 TPH-d = total petroleum hydrocarbons as diesel. Analysis by modified EPA Method 8015.

3 TPH-g = total petroleum hydrocarbons as gasoline. Analysis by modified EPA Method 8015.

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TABLE 3

HISTORICAL GROUNDWATER ANALYTICAL RESULTS[1]

National Guard Organizational Maintenance Shop
San Lorenzo, California

Concentrations in micrograms per liter (μg/l)

Sample No.	Date Collected	TPH-d[2]	TPH-g[3]	Benzene	Toluene	Xylenes	Ethylbenzene
MW-1	7/14/93	ND[4]	ND	ND	ND	ND	ND
	5/3/95	<50	<50	<0.5	<0.5	<0.5	<0.5
	8/11/95	<50	<50	<0.5	<0.5	<0.5	<0.5
MW-2	7/14/93	ND	ND	ND	ND	ND	ND
	5/3/95	<50	<50	<0.5	<0.5	<0.5	<0.5
	8/11/95	<50	<50	<0.5	<0.5	<0.5	<0.5
MW-3	7/14/93	<200	4100	<5	<5	640	<5
	5/3/95	<50	600	18	4.2	27	110
	8/11/95	<50	710	11	3.2	23	110

Notes:

1 Chemical analyses performed by Chromalab, Inc., of Pleasanton, California. Laboratory analytical reports detailing the analyses performed, method detection limits for each constituent, and analytical results are included in Appendix A.

2 TPH-d = total petroleum hydrocarbons as diesel. Analysis by modified EPA Method 8015.

3 TPH-g = total petroleum hydrocarbons as gasoline. Analysis by modified EPA Method 8015.

4 ND = not detected at or above detection limit; detection limit for these samples is unknown; sampling conducted and reported by TetraTech, Inc.

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TABLE 4

SUMMARY OF PRECISION AND ACCURACY DATA
AUGUST 1995
National Guard Organizational Maintenance Shop
San Lorenzo, California

Matrix Spike/Matrix Spike Duplicates[1]	Constituent	Precision Data		Accuracy Data	
		RPD[2]	QA Goal[3]	Recovery[4] %	QA Goal[3]
Monitoring Well Sampling Event	Diesel	3.5%	±20%	90-93	60-130
	Gasoline	NA[5]	±20%	98	80-118
	Benzene	2.9%	±20%	102-105	80-127
	Toluene	1.0%	±20%	102-103	80-122
	Ethylbenzene	0.0%	±20%	106-106	81-119
	Xylenes	1.0%	±20%	99-100	83-125

Notes:

1 Matrix spike and spike duplicate analyses were performed on samples from monitoring well MW-1.

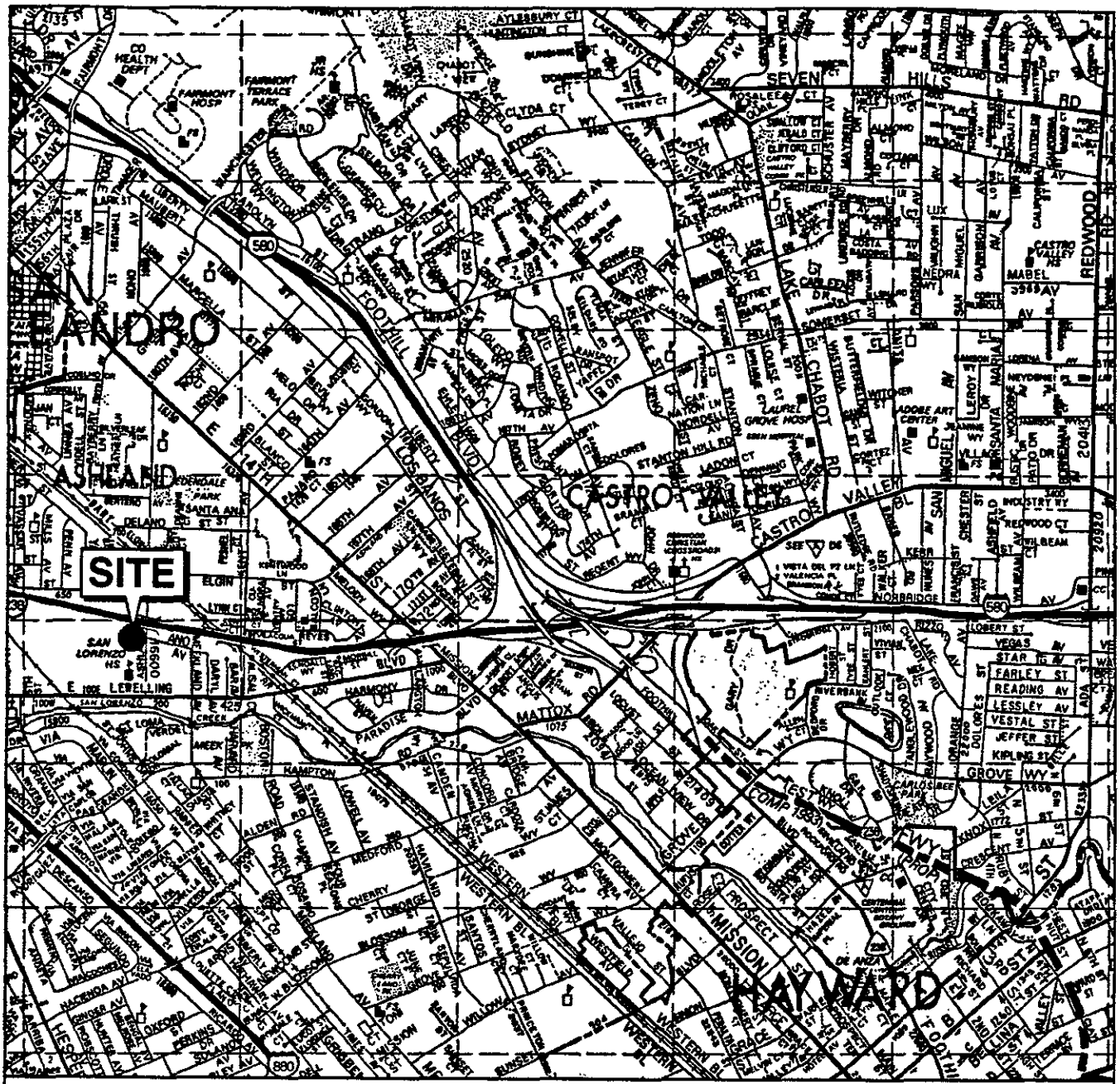
2 RPD = Relative percent difference. $RPD = \frac{2(C_1 - C_2)}{(C_1 + C_2)} \times 100$

3 QA Goal = Quality assurance goal established by laboratory.

4 Recovery = [(A-B)x100]T, where A = measured concentration after spiking, B = background concentration (laboratory or as measured in sample duplicate), and T = known true value of spike.

5 NA = Duplicate sample not analyzed; RPD not calculated.

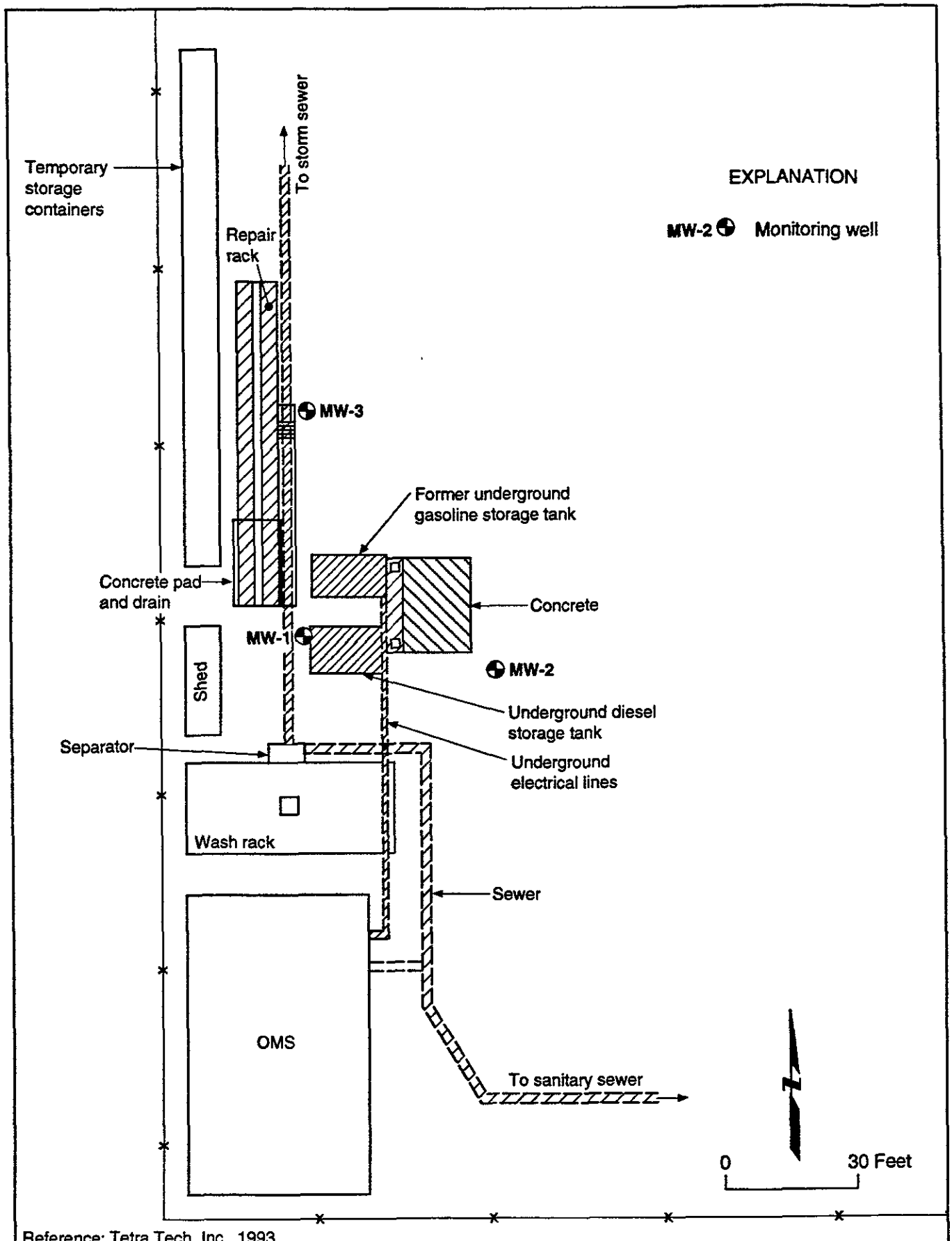
FIGURES



Reference: Thomas Brothers Maps, Alameda County, 1993.

GEOMATRIX	SITE LOCATION MAP National Guard Organizational Maintenance Shop No. 35 16501 Ashland Avenue San Lorenzo, California	Figure 1 Project No. 2868D

2868D.014



Reference: Tetra Tech, Inc., 1993

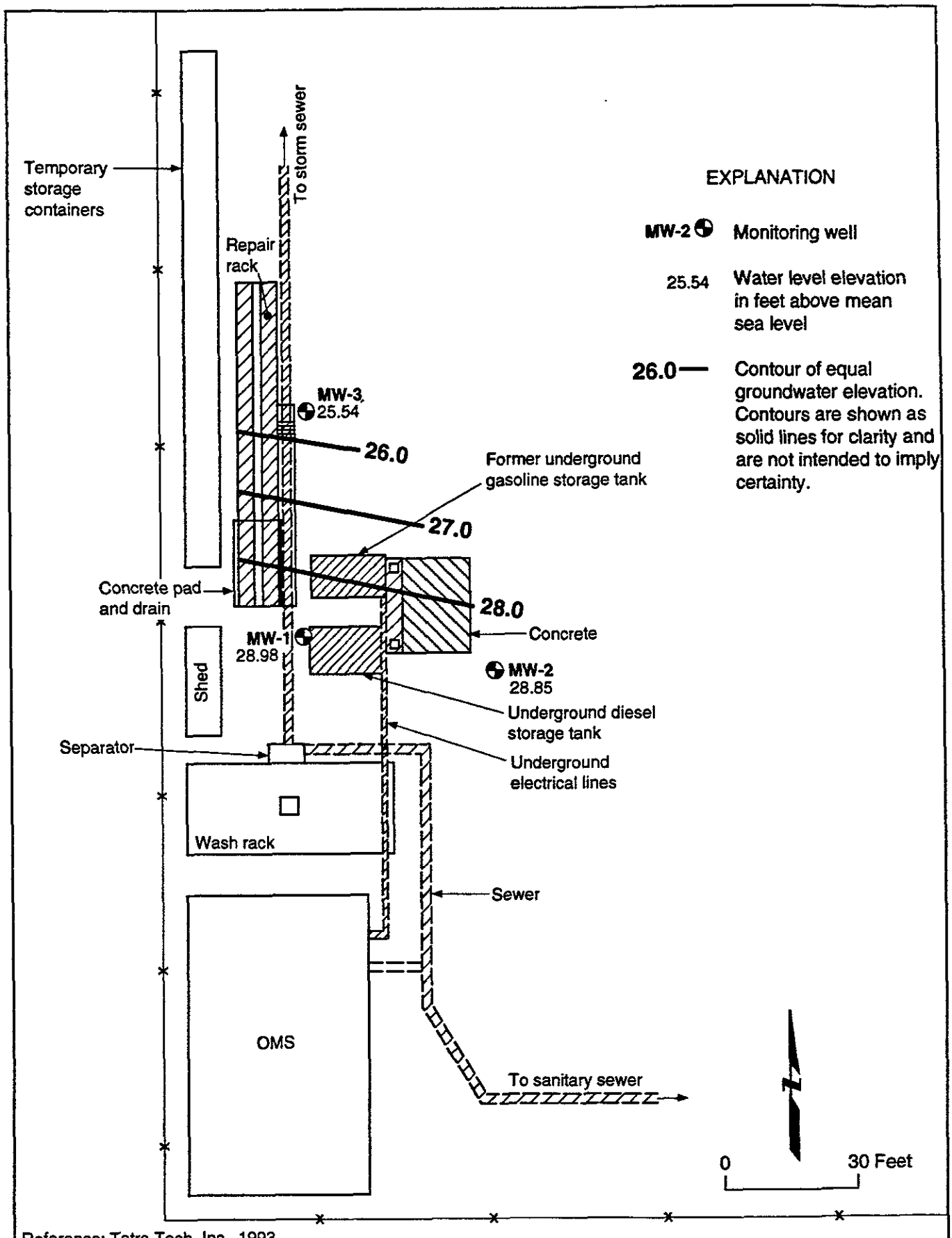
GEOMATRIX

SITE PLAN
National Guard Organizational Maintenance Shop No. 35
16501 Ashland Avenue
San Lorenzo, California

Figure 2

Project No. 2868D

2868D.002



Reference: Tetra Tech, Inc., 1993

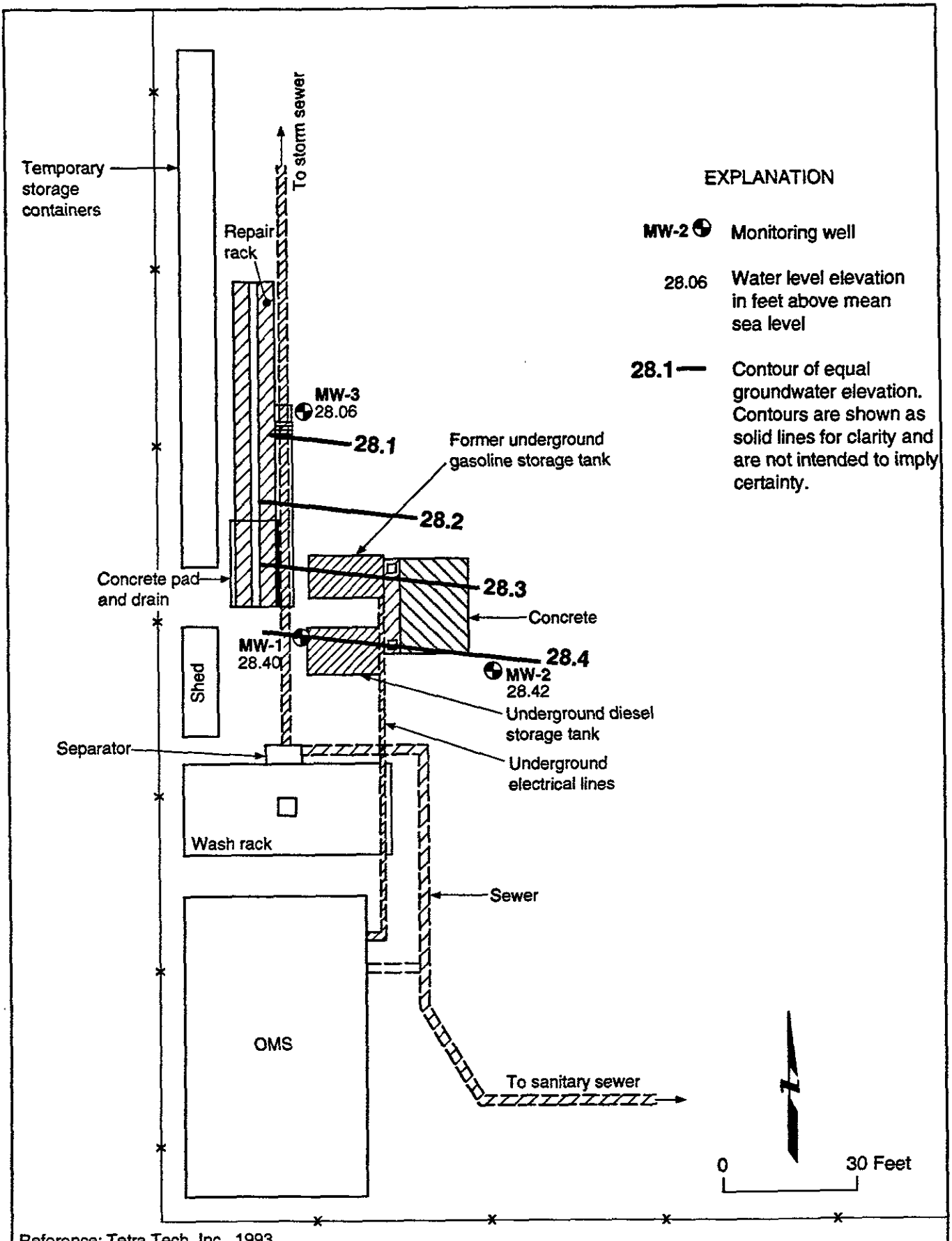
GEOMATRIX

POTENTIOMETRIC SURFACE MAP - 18 JULY 1995
National Guard Organizational Maintenance Shop No. 35
16501 Ashland Avenue
San Lorenzo, California

Figure 3

Project No. 2868D

2868D.016



Reference: Tetra Tech, Inc., 1993

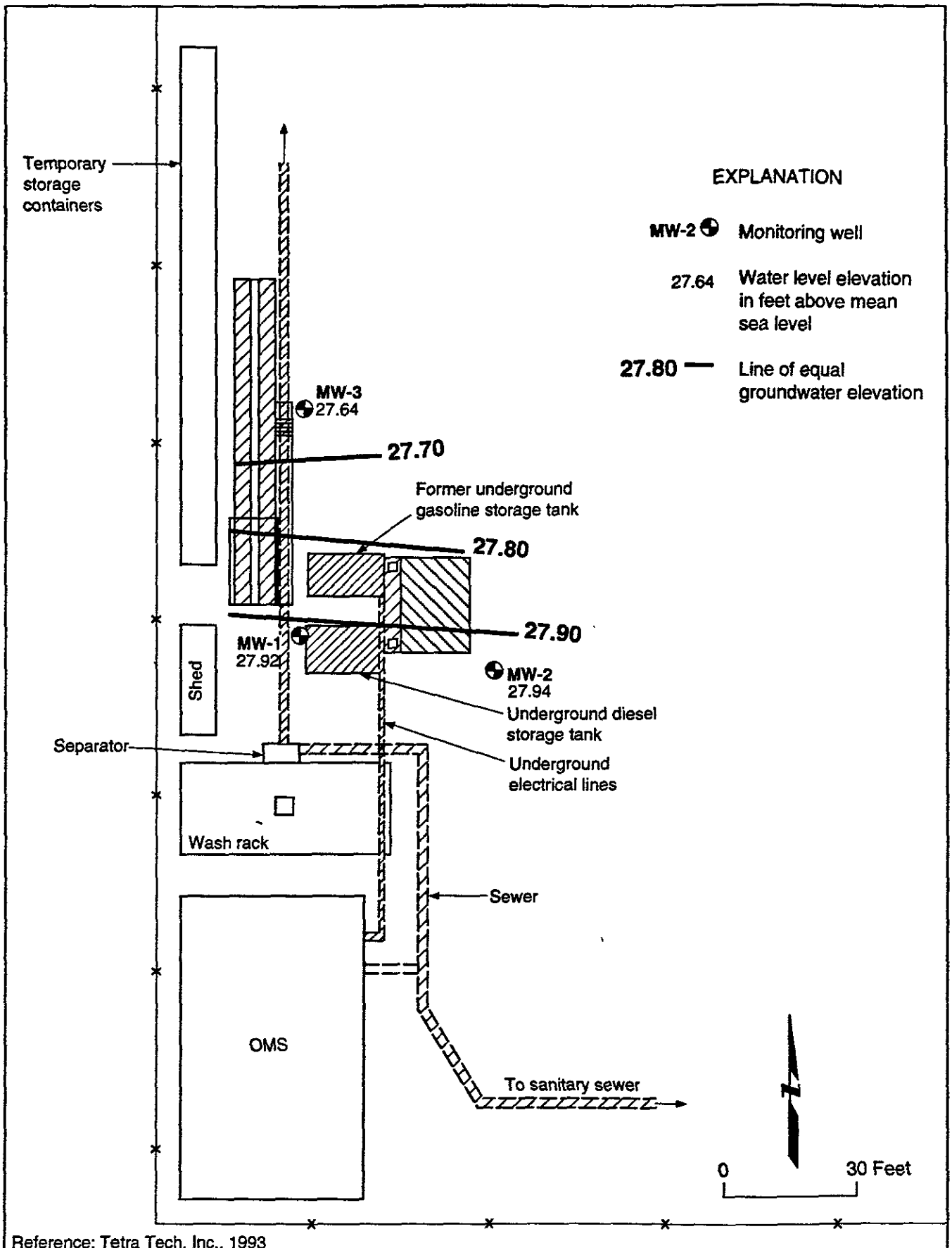
GEOMATRIX

POTENTIOMETRIC SURFACE MAP - 11 AUGUST 1995
National Guard Organizational Maintenance Shop No. 35
16501 Ashland Avenue
San Lorenzo, California

Figure 4

Project No. 2868D

2868D.016



Reference: Tetra Tech, Inc., 1993

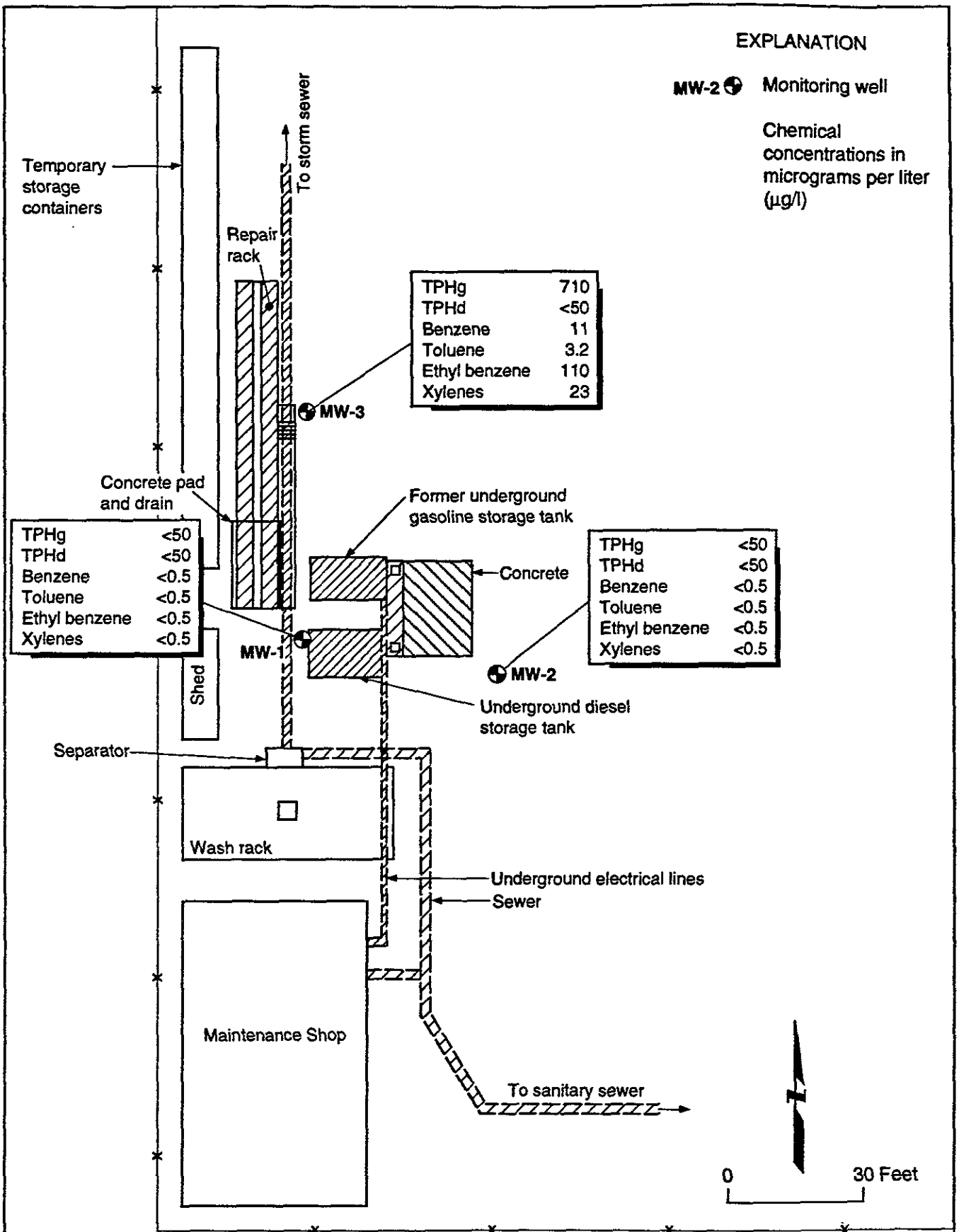
GEOMATRIX

POTENTIOMETRIC SURFACE MAP - 8 SEPTEMBER 1995
National Guard Organizational Maintenance Shop No. 35
16501 Ashland Avenue
San Lorenzo, California

Figure 5

Project No. 2868D

2868D.017



Reference: Tetra Tech, Inc., 1993

GEOMATRIX

MONITORING WELL SAMPLE RESULTS - AUGUST 1995
National Guard Organizational Maintenance Shop No. 35
San Lorenzo, California

Figure 6

Project No. 2868D

2868D.012

GEOMATRIX

APPENDIX A

Laboratory Analytical Results and Chain-of-Custody Records

CHROMALAB, INC.

Environmental Services (SDB)

August 21, 1995 Submission #: 9508181

GEOMATRIX CONSULTANTS
100 Pine St., Suite 1000
San Francisco, CA 94111

Attn: Lisa Rowles

RE: Analysis for project 2868.03.

REPORTING INFORMATION

Samples were received cold and in good condition on August 11, 1995. They were refrigerated upon receipt and analyzed as described in the attached report. ChromaLab followed EPA or equivalent methods for all testing reported.

No discrepancies were observed or difficulties encountered with the testing.

Please call us if you have questions regarding them.

SAMPLES SUBMITTED IN THIS REPORT

Client Sample ID	Matrix	Date collected	Sample #
MW-1	WATER	August 11, 1995	99048
MW-2	WATER	August 11, 1995	99049
MW-3	WATER	August 11, 1995	99050
MW-4	WATER	August 11, 1995	99051
MW-5	WATER	August 11, 1995	99052
D-1	WATER	August 11, 1995	99053
D-2	WATER	August 11, 1995	99054
D-3	WATER	August 11, 1995	99055

Jill Thomas
Quality Assurance Manager

Eric Tam
Laboratory Director

CHROMALAB, INC.

Environmental Services (SDB)

August 18, 1995 *Submission #:* 9508181

GEOMATRIX CONSULTANTS

Atten: Lisa Rowles

Project: 2868.03
Received: August 11, 1995

re: 3 samples for Diesel analysis.
Method: EPA 3510/8015M

Sampled: August 11, 1995 *Matrix:* WATER *Extracted:* August 15, 1995
Run: 8051-D *Analyzed:* August 16, 1995

Spl #	Sample ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
99048	MW-1	N.D.	50	N.D.	90
99049	MW-2	N.D.	50	N.D.	90
99050	MW-3	N.D.	50	N.D.	90

Dennis Mayugba for
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

August 21, 1995 *Submission #:* 9508181

GEOMATRIX CONSULTANTS

Atten: Lisa Rowles

Project: 2868.03
Received: August 11, 1995

re: **Blank spike and duplicate** report for 3 samples for Diesel analysis.

Matrix: WATER *Extracted:* August 15, 1995
Lab Run#: 8051 *Analyzed:* August 16, 1995
Method: EPA 3510/8015M

Analyte	Spike Amt	% Spike Rec	Dup Spike Rec	Control Limits	% RPD	RPD Lim
DIESEL	200 ug/L	90.0	93.0	60-130	3.3	25

Reagent spike sample#: 99294
Duplicate spike sample#: 99295

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Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

August 21, 1995 *Submission #:* 9508181

GEOMATRIX CONSULTANTS

Atten: Lisa Rowles

Project: 2868.03
Received: August 11, 1995

re: **Surrogate** report for 3 samples for Diesel analysis.

Matrix: WATER *Extracted:* August 15, 1995
Lab Run#: 8051 *Analyzed:* August 16, 1995
Method: EPA 3510/8015M

Sample#	Client Sample ID	Surrogate	% Recovered
99048	MW-1	O-TERPHENYL	83
99049	MW-2	O-TERPHENYL	95
99050	MW-3	O-TERPHENYL	91

Sample#	QC Sample Type	Surrogate	% Recovered
99293	*Method blank (MDB)*	O-TERPHENYL	94
99294	*Blank Spike (BSP)*	O-TERPHENYL	66
99295	*Blank Spike Duplicate (BSD)*	O-TERPHENYL	83

OCSU89 JILL 21-Aug-95 10:47:33

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Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

August 17, 1995 *Submission #:* 9508181

GEOMATRIX CONSULTANTS

Atten: Lisa Rowles

Project: 2868.03
Received: August 11, 1995

re: 6 samples for Gasoline and BTEX analysis.
Method: EPA 5030/8015M/602/8020

Sampled: August 11, 1995 *Matrix:* WATER
Run: 8057-2 *Analyzed:* August 16, 1995

Spl #	Sample ID	Gasoline (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
99048	MW-1	N.D.	N.D.	N.D.	N.D.	N.D.
99049	MW-2	N.D.	N.D.	N.D.	N.D.	N.D.
99050	MW-3	0.71	11	3.2	110	23
99053	D-1 } Purge water drums	N.D.	N.D.	N.D.	N.D.	N.D.
99054	D-2 }	0.13	2.5	N.D.	25	3.3
99055	D-3 }	N.D.	N.D.	N.D.	N.D.	N.D.
	For above sample:	*Compounds in the Gasoline range do not match any of our petroleum hydrocarbon standard profiles. Compared to our Gasoline standard, amount is 0.062 mg/L.*				
Reporting Limits		0.05	0.5	0.5	0.5	0.5
Blank Result		N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)		98	104	101	104	97

Jack Kelly
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

August 23, 1995

Submission #: 9508181

GEOMATRIX CONSULTANTS

Atten: Lisa Rowles

Project: 2868.03
Received: August 11, 1995

re: **Matrix spike** report for Gasoline and BTEX analysis.

Matrix: WATER
Lab Run#: 8057 *Instrument:* GC1-2 *Analyzed:* August 16, 1995
Method: EPA 5030/8015M/602/8020

Analyte	Spiked Sample Result	Spike Amt	% Spike Rec	Dup Spike Rec	Control Limits	% RPD	% RPD Lim
GASOLINE	N.D. mg/L	0.50 mg/L	98	--	80-118	N/A	N/A
BENZENE	N.D. ug/L	20 ug/L	102	105	80-127	2.9	20
TOLUENE	N.D. ug/L	20 ug/L	102	103	80-122	1.0	20
ETHYL BENZENE	N.D. ug/L	20 ug/L	106	106	81-119	0.0	20
XYLENES	N.D. ug/L	60 ug/L	99.0	100	83-125	1.0	20

Sample Spiked: 99048
Submission #: 9508181
Client Sample ID: MW-1

SPK1

GCMSPK RUDD 23-Aug-95 07:43:17

CHROMALAB, INC.

Environmental Services (SDB)

August 17, 1995 *Submission #:* 9508181

GEOMATRIX CONSULTANTS

Atten: Lisa Rowles

Project: 2868.03
Received: August 11, 1995

re: **Surrogate** report for 6 samples for Gasoline and BTEX analysis.

Matrix: WATER
Lab Run#: 8057 *Analyzed:* August 16, 1995
Method: EPA 5030/8015M/602/8020

Sample#	Client Sample ID	Surrogate	% Recovered	
99048	MW-1	TRIFLUOROTOLUENE	81	
99049	MW-2	TRIFLUOROTOLUENE	92	
99050	MW-3	TRIFLUOROTOLUENE	99	
99053	D-1	TRIFLUOROTOLUENE	94	
99054	D-2	TRIFLUOROTOLUENE	94	
99055	D-3	TRIFLUOROTOLUENE	93	

Sample#	QC Sample Type	Surrogate	% Recovered	
99344	*Method blank (MDB)*	TRIFLUOROTOLUENE	93	
99345	*Blank Spike (BSP)*	TRIFLUOROTOLUENE	96	
99348	*Matrix spike (MS)*	TRIFLUOROTOLUENE	91	SPK1
99347	*Matrix spike duplicate (MSD)*	TRIFLUOROTOLUENE	94	SPK2

QCSURR JACK 17-Aug-95 12:57:46

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Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

August 17, 1995,

Submission #: 9508181

GEOMATRIX CONSULTANTS

Atten: Lisa Rowles

Project: 2868.03
Received: August 11, 1995

re: 1 sample for BTEX analysis.
Method: EPA 8020

Sampled: August 11, 1995 *Matrix:* WATER
Run: 8057-2 *Analyzed:* August 16, 1995

Spl #	Sample ID	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
99051	MW-4 (FIELD BLANK)	N.D.	0.7	N.D.	N.D.
	Reporting Limits	0.5	0.5	0.5	0.5
	Blank Result	N.D.	N.D.	N.D.	N.D.
	Blank Spike Result (%)	104	101	104	97

Jack Kelly
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

August 17, 1995 *Submission #:* 9508181

GEOMATRIX CONSULTANTS

Atten: Lisa Rowles

Project: 2868.03
Received: August 11, 1995

re: **Matrix spike** report for BTEX analysis.

Matrix: WATER
Lab Run#: 8057 *Instrument:* GC1-2 *Analyzed:* August 16, 1995
Method: EPA 8020

Analyte	Spiked Sample Result	Spike Amt	% Spike Rec	Dup Spike Rec	Control Limits	% RPD	% RPD Lim
BENZENE	N.D. ug/L	5.0 ug/L	102	105	80-127	2.9	20
TOLUENE	N.D. ug/L	5.0 ug/L	102	103	80-122	1.0	20
ETHYL BENZENE	N.D. ug/L	5.0 ug/L	106	106	81-119	0.0	20
XYLENES	N.D. ug/L	15 ug/L	99.0	100	83-125	1.0	20

Sample Spiked: 99048
Submission #: 9508181
Client Sample ID: MW-1

SPK1

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

GCMSPK.JACK 17-AUG-95 12:57:28

CHROMALAB, INC.

Environmental Services (SDB)

August 17, 1995 *Submission #:* 9508181

GEOMATRIX CONSULTANTS

Atten: Lisa Rowles

Project: 2868.03
Received: August 11, 1995

re: **Surrogate** report for 1 sample for BTEX analysis.

Matrix: WATER
Lab Run#: 8057
Method: EPA 8020

Analyzed: August 16, 1995

Sample#	Client Sample ID	Surrogate	% Recovered	
99051	MW-4	TRIFLUOROTOLUENE	91	
Sample#	**QC Sample Type**	**Surrogate**	**% Recovered**	
99344	*Method blank (MDB)*	TRIFLUOROTOLUENE	93	
99345	*Blank Spike (BSP)*	TRIFLUOROTOLUENE	96	
99348	*Matrix spike (MS)*	TRIFLUOROTOLUENE	91	SPK1
99347	*Matrix spike duplicate (MSD)*	TRIFLUOROTOLUENE	94	SPK2

QCSURR JACK 17-Aug-95 12:57:46

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.
SAMPLE RECEIPT CHECKLIST

Client Name GEOMATRIX

Project 2868.03

Reference/Subm # 23352/9508181

Checklist completed by: Signature / Date 8/4/95

Date/Time Received 8/11/95 (Date) / 1579 (Time)

Received by B Morrow

Carrier name

Logged in by (Initials) / (Date)

Matrix

Shipping container in good condition?			NA___	Yes___ No___
Custody seals present on shipping container?	Intact___	Broken___		Yes___ No___
Custody seals on sample bottles?	Intact___	Broken___		Yes___ No___
Chain of custody present?				Yes✓ No___
Chain of custody signed when relinquished and received?				Yes✓ No___
Chain of custody agrees with sample labels?				Yes✓ No___
Samples in proper container/bottle?				Yes✓ No___
Samples intact?				Yes✓ No___
Sufficient sample volume for indicated test?				Yes✓ No___
VOA vials have zero headspace?			NA___	Yes✓ No___
Trip Blank received?			NA___	Yes___ No✓
All samples received within holding time?				Yes✓ No___

Container temperature?_____

pH upon receipt _____ pH adjusted_____ Check performed by:_____ NA___

Any NO response must be detailed in the comments section below. If items are not applicable, they should be marked NA.

Client contacted?_____ Date contacted?_____

Person contacted?_____ Contacted by?_____

Regarding?_____

Comments:_____

Corrective Action:_____

181/99048-99055

Chain-of-Custody Record

№ 5538

Date: 8-11-95

Page 1 of 1

Project No.: 2868.03

Samplers (Signatures):

Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX			Hold							Cooled	Soil (S) or water (W)	Acidified	Number of containers
	1200	MW-1					X	X	X										Y	W	Y/N	6
	1250	MW-2					X	X	X													6
	1255	MW-4							X													3
	1240	MW-5										X										2
	1410	MW-3					X	X	X													6
	1425	D-1					X		X													3
	1430	D-2					X		X													3
	1435	D-3					X		X													3

REMARKS

Additional comments

SUBM #: 9508181 REP: PM
CLIENT: GEOMATRIX
DUE: 08/18/95
REF #:23356

Turnaround time: Normal

Results to: Lisa Rowles

Total No. of containers: 32

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:
Signature:		Signature:		Signature:	
Printed name: Jeffrey A. Austin		Printed name:		Printed name:	
Company: Geomatrix	8-11-95	Company:		Company:	
Received by:	Time:	Received by:	Time:	Received by:	Time:
Signature:	1519	Signature:		Signature	
Printed name:		Printed name:		Printed name	
Company: Chromalab		Company:		Company	

Method of shipment: Courier p.u.

Laboratory comments and Log No :

Geomatrix Consultants
100 Pine St. 10th Floor
San Francisco, CA 94111
(415) 434-9400