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GEOMATRIX

Transmittal

94 DEC 30 PM 4:19

Date 29 December 1994

To Ms. Juliet Shin
ACHSC
1131 Harbor Bay Parkway
Alameda, CA 94502

Transmitted via
- ☐ Messenger
- ☒ U.S. Mail
- ☐ Overnight Mail
- ☐ Fax

Project Number 1736.11

Project Name Marina Village Development

Total Pages ___

Item	Description
1	Quarterly Monitoring Report - Oct-Dec 1993 - 1150 Marina Village Pkwy
2	Quarterly Monitoring Report - Oct-Dec 1993 - 1020 Atlantic Avenue
3	Quarterly Monitoring Report - Oct-Dec 1993 - 1301 Marina Village Parkway and Vicinity

Remarks

Please let me know if there is anything else you need. Best wishes for the holiday season.

From: Elizabeth Nixon

cc:

100 Pine Street, 10th Floor
San Francisco, CA 94111
(415) 434-9400 • FAX (415) 434-1365

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12 January 1994
Project 1736.11

Ms. Juliet Shin
Alameda County Health Care Services Agency
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Subject: Quarterly Monitoring Report
Calendar Quarter October - December 1993
1150 Marina Village Parkway
Marina Village Development
Alameda, California

Dear Ms. Shin:

On behalf of Alameda Real Estate Investments, Inc. (AREI), Geomatrix Consultants, Inc. (Geomatrix), is submitting the subject report. This is the final report for the four quarter monitoring events conducted in 1993. Based on results of the monitoring events, we are recommending discontinuation of the monitoring program and UST site closure. If you have any questions regarding this report, please call either of the undersigned.

Sincerely,

GEOMATRIX CONSULTANTS, INC.

Jeff Nelson, P.E.
Project Manager

Elizabeth Nixon
Senior Project Engineer

JCN/elr
1736\1150QRT4.LTR

Enclosure

cc: Ms. Kathy Luck, AREI
Mr. Richard Hiett, Regional Water Quality Control Board

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QUARTERLY MONITORING REPORT
CALENDAR QUARTER
OCTOBER - DECEMBER 1993

1150 Marina Village Parkway
Marina Village Development
Alameda, California

Prepared for

Alameda Real Estate Investments
1150 Marina Village Parkway
Alameda, California

December 1993
Project No. 1736.11

Geomatrix Consultants

GEOMATRIX

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QUARTERLY MONITORING REPORT
CALENDAR QUARTER OCTOBER - DECEMBER 1993

1150 Marina Village Parkway
Marina Village Development
Alameda, California

1.0 INTRODUCTION

This report presents a summary of groundwater monitoring activities conducted by Geomatrix Consultants, Inc. (Geomatrix), on behalf of Alameda Real Estate Investments, Inc. (AREI), at 1150 Marina Village Parkway, Alameda, California (Figure 1). These activities are part of a quarterly groundwater monitoring program initiated in January 1993 and conducted during October 1993. The purpose of this program is to comply with Alameda County Department of Environmental Health (ACDEH) requirements for closure of underground storage tank (UST) sites. Work at the site was completed in accordance with the scope of work submitted to ACDEH by Geomatrix on 29 December 1992.

1.1 BACKGROUND

One UST apparently was installed at the site in the 1940s by former property owners and was used to store diesel fuel. AREI removed the tank and associated petroleum-containing soil in 1989; the location of the former UST and soil excavation boundary are shown on Figure 2.

2.0 QUARTERLY PROGRESS SUMMARY

The work performed during this quarter is summarized below:

- Water levels were measured in four monitoring wells in the site vicinity on 15 October 1993. Water-level measurements and procedures are described in Section 3.0.

- Geomatrix performed the third of four quarterly groundwater sampling events on 15 October 1993. Section 4.0 describes the groundwater sampling activities, analytical procedures, and results.

3.0 QUARTERLY WATER-LEVEL MEASUREMENTS

Geomatrix measured water levels in four groundwater monitoring wells at or near the site on 15 October 1993. Well construction data for these wells are summarized in Table 1. Monitoring well locations, water-level elevations, and horizontal hydraulic gradient direction are shown on Figure 2. Water levels were measured to the nearest 0.01 foot using a Sinco electric well sounder following Geomatrix protocols previously submitted with the initial quarterly monitoring report for this project. Equipment used by Geomatrix personnel was washed with a detergent-water solution and rinsed with deionized water, before each measurement was taken. Water-level measurements from this quarterly monitoring event are summarized in Table 2.

Water-level elevations at or near the site ranged from -5.32 feet at well WC-3 to -1.68 feet at well GMW-1 (City of Alameda Datum). Water-level elevation data near the vicinity of the former excavation suggest that the localized hydraulic gradient direction generally is to the west - northwest. Based on this gradient, well GMW-6 is down gradient of the former UST and soil excavation. The horizontal hydraulic gradient in the site and vicinity ranges from about 0.005 to 0.008 feet per foot.

4.0 QUARTERLY GROUNDWATER SAMPLING AND ANALYSIS

A groundwater sample was collected from monitoring well GMW-6 on 15 October 1993. Sample collection was in accordance with Geomatrix protocols previously submitted for this project. Sampling field notes are included in Appendix A. Immediately after collection, the groundwater sample was placed in an ice-chilled cooler and transported under Geomatrix

chain-of-custody procedures to American Environmental Network (AEN), of Pleasant Hill, California, a state-certified analytical laboratory.

The sample was analyzed by AEN for total petroleum hydrocarbons as diesel (TPHd), according to Environmental Protection Agency (EPA) Method 3520 GCFID, and benzene, toluene, ethylbenzene, and xylenes (BTEX) according to EPA Method 8020. Copies of chain-of-custody records are included in Appendix A.

The results of chemical analyses performed on the groundwater sample collected during this quarter are presented in Table 3. TPHd was detected in the groundwater sample at a concentration of 400 micrograms per liter (μg/l). No BTEX were detected in the groundwater sample. Laboratory reports are included in Appendix A.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the four quarterly groundwater monitoring events conducted in 1993, the following observations have been made:

- Groundwater elevation fluctuations have ranged from about 0.5 to 2.5 feet in the four wells monitored for groundwater levels. The groundwater hydraulic gradient has ranged from 0.001 to 0.02 foot/foot during the four sampling events. Hydraulic gradient direction has generally been to the west - northwest.
- Results of chemical analysis for TPHd in the downgradient well GMW-6 have ranged from non-detectable to 400 μg/l.
- BTEX have not been detected in the downgradient well GMW-6 during the four sampling events.

These observations indicate that hydraulic parameters and groundwater quality beneath the site have been sufficiently characterized to meet ACDEH requirements for UST site closure. Additionally, results of groundwater monitoring programs in other parts of the Marina Village Development suggest that the low concentrations of extractable petroleum

Village Development suggest that the low concentrations of extractable petroleum hydrocarbons detected at the site may be representative of general groundwater quality in the site vicinity rather than specifically related to the former USTs.

We recommend that the quarterly groundwater monitoring program be discontinued and UST site closure be granted by the ACDEH.

TABLE 1

WELL CONSTRUCTION DATA
1150 Marina Village Parkway
Marina Village
Alameda, California

Well Number	Date Constructed	Well Depth (ft. below grade)	Screened Interval (ft. below grade)	Filter Pack Interval (ft. below grade)	Measuring Point Elevation[1] (feet)	Ground Surface Elevation (feet)
LF-2[2]	1988	15	5-15	3-15	4.92	4.52
WC-3[3]	1987	14	7-14	unknown	3.66	4.21
GMW-1[4]	4/15/92	13.5	3.5-13.5	3-13.5	3.86	4.24
GMW-6[4]	2/1/93	18	4-18	3.5-18	3.98	4.2[5]

1 Top of PVC casing elevations were surveyed by Luk, Milani & Associates (formerly Stedman & Associates, Inc.) of Walnut Creek, California. Elevations are relative to City of Alameda Datum (6.4 feet above Mean Sea Level).
2 LF-2 was installed by Levine-Fricke, Inc. in 1988.
3 WC-3 was installed by Woodward-Clyde Consultants, Inc. in 1987.
4 GMW-1 and GMW-2 were installed by Geomatrix Consultants, Inc.
5 Ground surface elevation is approximate.

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TABLE 2

WATER-LEVEL MEASUREMENTS
1150 Marina Village Parkway
Marina Village
Alameda, California

Well Number	Date Water Level Measured	Measuring Point (MP) Elevation[1] (feet)	Depth to Water Below MP (feet)	Water-Level Elevation[1] (feet)
LF-2	2/8/93	4.92	8.83	-3.91
WC-3	2/8/93	3.66	8.57	-4.91
GMW-1	2/8/93	3.86	3.10	.76
GMW-6	2/8/93	3.98	3.33	.65
LF-2	4/5/93	4.92	9.25	-4.33
WC-3	4/5/93	3.66	9.37	-5.71
GMW-1	4/5/93	3.86	5.57	-1.71
GMW-6	4/5/93	3.98	5.89	-1.91
LF-2	7/7/93	4.92	9.01	-4.09
WC-3	7/7/93	3.66	9.43	-5.77
GMW-1	7/7/93	3.86	5.43	-1.57
GMW-6	7/7/93	3.98	5.66	-1.68

TABLE 2

WATER-LEVEL MEASUREMENTS
1150 Marina Village Parkway
Marina Village
Alameda, California

Well Number	Date Water Level Measured	Measuring Point (MP) Elevation[1] (feet)	Depth to Water Below MP (feet)	Water-Level Elevation[1] (feet)
LF-2	10/15/93	4.92	8.73	-3.81
WC-3	10/15/93	3.66	8.98	-5.32
GMW-1	10/15/93	3.86	5.54	-1.68
GMW-6	10/15/93	3.98	5.78	-1.80

[1] Top of PVC casing elevations were surveyed by Luk, Milani & Associates (formerly Stedman & Associates, Inc.) of Walnut Creek, California. Elevations are relative to City of Alameda Datum (6.4 feet above Mean Sea Level).

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TABLE 3

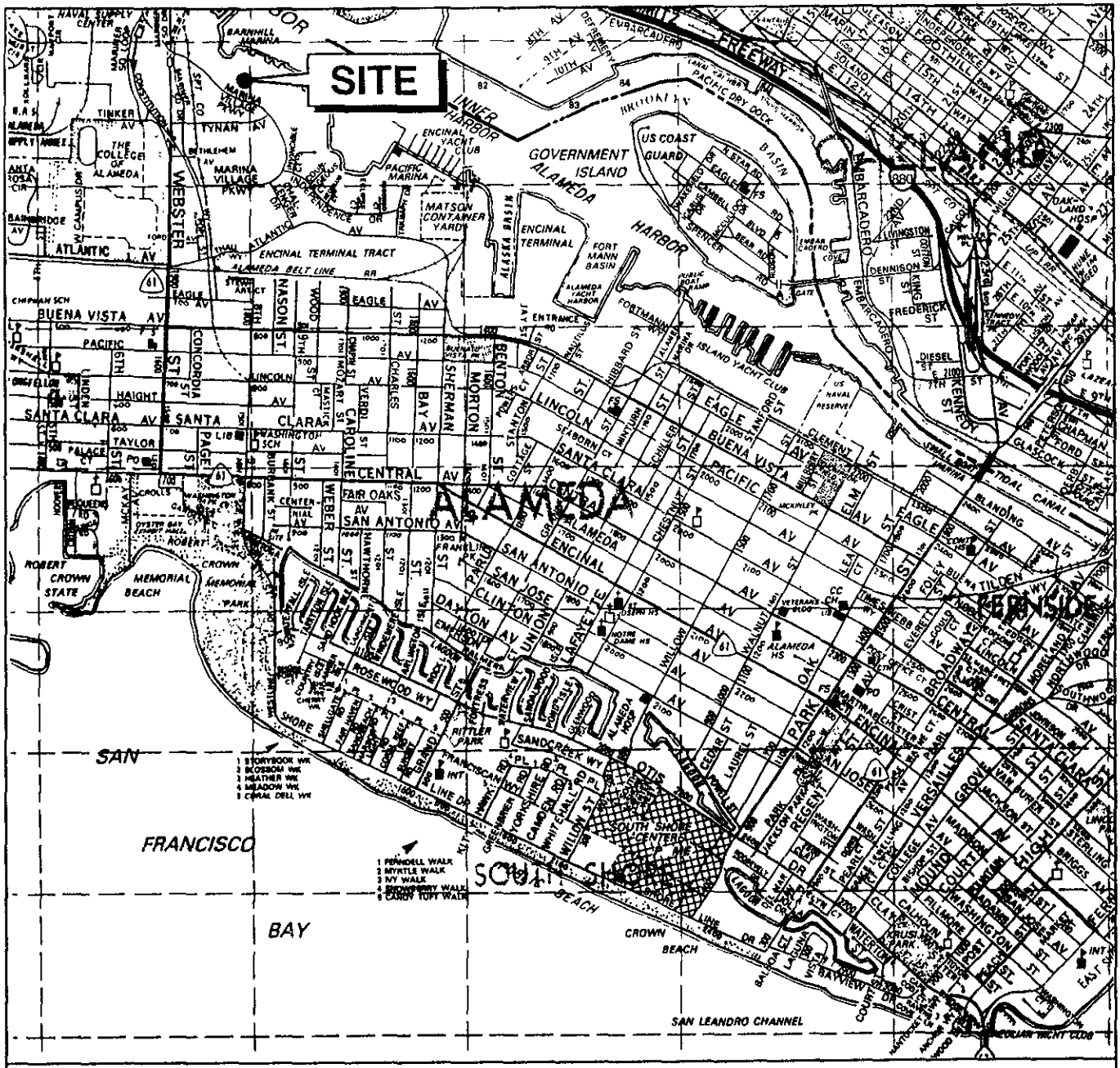
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES[1]

1150 Marina Village Parkway
Marina Village
Alameda, California

Results in micrograms per liter (μg/l)

Well Number	Sample Date	Extractable Petroleum Hydrocarbons as Diesel	Benzene	Toluene	Ethylbenzene	Xylenes (Total)
GMW-6	2/11/93	<50	<0.5	<0.5	<0.5	<2.0
GMW-6	4/5/93	300[2]	<0.5	<0.5	<0.5	<2.0
GMW-6	7/7/93	100	<0.5	<0.5	<0.5	<2.0
GMW-6	10/15/93	400	<0.5	<0.5	<0.5	<2.0

[1] Samples analyzed by American Environmental Network (formerly Quanteq Laboratorics) of Pleasant Hill, California.
[2] Hydrocarbon pattern resembles a weathered diesel or a light oil.

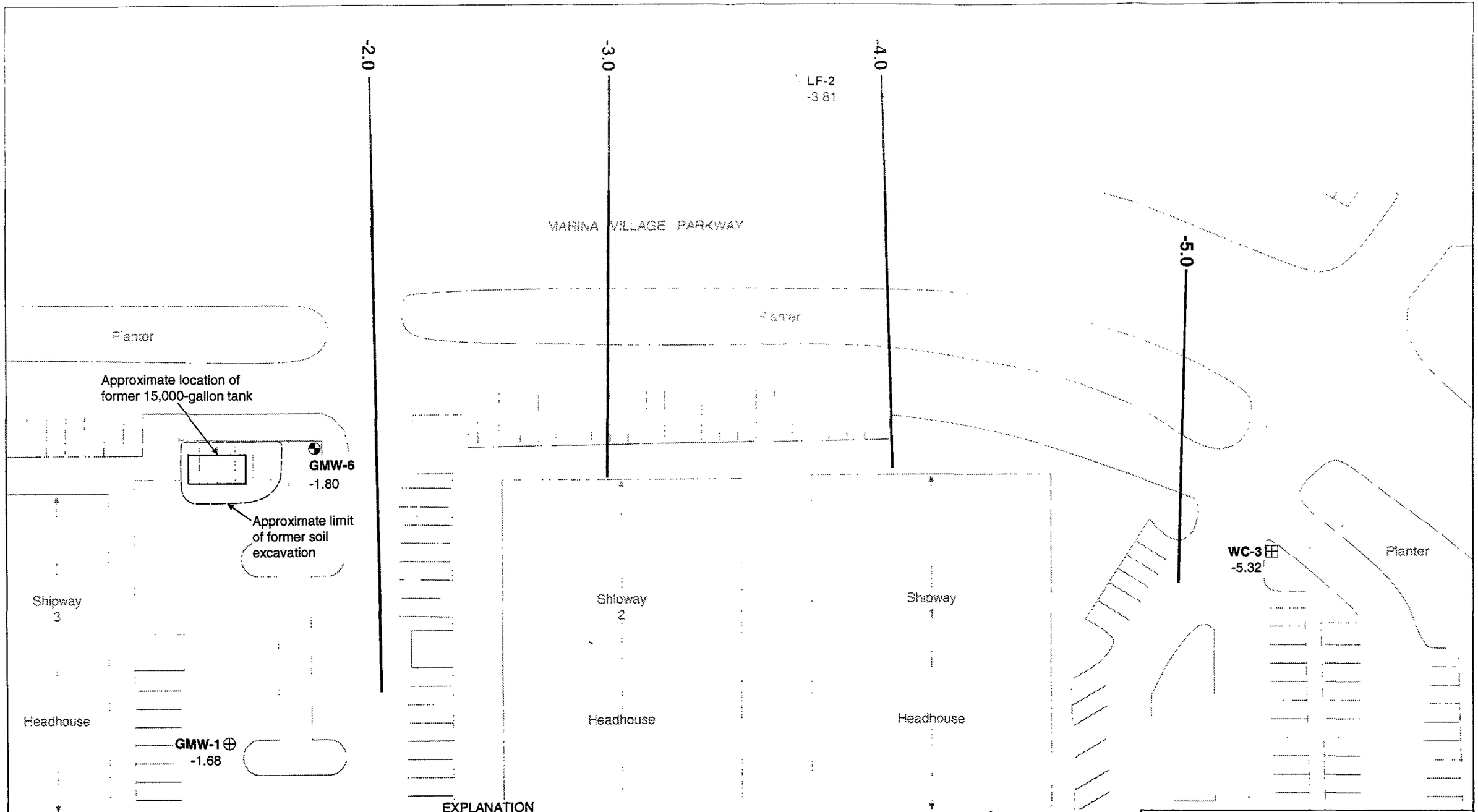


GEOMATRIX

SITE VICINITY MAP
1150 Marina Village Parkway
Marina Village Development
Alameda, California

Figure
1

Project No.
1736.11



EXPLANATION

- **GMW-6** — Groundwater monitoring well, Geomatrix, February 1993
- **GMW-1** — Groundwater monitoring well, Geomatrix, April 1992
- **LF-2** — Groundwater monitoring well, Levine•Fricke, 1988
- **WC-3** — Groundwater monitoring well, Woodward-Clyde, 1987
- -1.68 — Water-level elevation, in feet (City of Alameda Datum)

Lines of equal water-level elevation; based on interpretation of available data and are not intended to imply certainty

SITE PLAN SHOWING MONITORING WELLS AND WATER-LEVEL ELEVATIONS (OCTOBER 1993)
1150 Marina Village Parkway
Marina Village Development
Alameda, California

GEOMATRIX	Project No. 1736.11	Figure 2

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APPENDIX A

Laboratory Analytical Results and Chain-of-Custody Records for Groundwater Sampling Analyses; Field Notes

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172

AIHA Accreditation: 94523-001

GEOMATRIX CONSULTANTS
100 PINE ST., 10TH FLOOR
SAN FRANCISCO, CA 94111

ATTN: JEFF NELSON

CLIENT PROJ. ID: 1736.11
C.O.C. NO: 3908

REPORT DATE: 11/05/93

DATE SAMPLED: 10/15/93

DATE RECEIVED: 10/15/93

AEN JOB NO: 9310162

PROJECT SUMMARY:

On October 15, 1993, this laboratory received one (1) water sample.

Client requested the sample be analyzed for Extractable Hydrocarbons as Diesel by EPA Method 3510 GCFID and Benzene, Toluene, Ethylbenzene and Total Xylenes by EPA Method 8020. Sample identification, results and dates analyzed are summarized on the following pages.

All laboratory quality control parameters were found to be within established limits. Batch QC data is included at the end of this report.

If you have any questions, please contact Client Services at (510) 930-9090.

Andrew Bradley for

Larry Klein
General Manager

Results FAXed 10/27/93

GEOMATRIX CONSULTANTS

SAMPLE ID: GMW-6
AEN LAB NO: 9310162-01
AEN WORK ORDER: 9310162
CLIENT PROJ. ID: 1736.11

DATE SAMPLED: 10/15/93
DATE RECEIVED: 10/15/93
REPORT DATE: 11/05/93

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8020 for BTEX	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	10/25/93
Toluene	108-88-3	ND	0.5	ug/L	10/25/93
Ethylbenzene	100-41-4	ND	0.5	ug/L	10/25/93
Xylenes, total	1330-20-7	ND	2	ug/L	10/25/93
#Extraction for Diesel/Oil	EPA 3510			Extrn Date	10/22/93
TPH as Diesel	GC-FID	0.4 *	0.05	mg/L	10/24/93

ND = Not detected
* = Indicates value above reporting limit

QUALITY CONTROL DATA

DATE EXTRACTED: 10/22/93
DATE ANALYZED: 10/24/93
CLIENT PROJ. ID: 1736.11

AEN JOB NO: 9310162
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: C

MATRIX SPIKE RECOVERY SUMMARY
TPH EXTRACTABLE WATER
METHOD: EPA 3510 GCFID

ANALYTE	Spike Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Diesel	2.04	ND	2.01	1.88	95.3	6.7

CURRENT QC LIMITS (Revised 10/18/93)

Analyte	Percent Recovery	RPD
Diesel	(55-119)	8

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

QUALITY CONTROL DATA

CLIENT PROJ. ID: 1736.11

AEN JOB NO: 9310162

INSTRUMENT: F

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8020
(WATER MATRIX)

Date Analyzed	SAMPLE IDENTIFICATION Client Id.	Lab Id.	SURROGATE RECOVERY (PERCENT) Fluorobenzene
10/25/93	GMW-6	01	99.2

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
Fluorobenzene	(70-115)

QUALITY CONTROL DATA

DATE ANALYZED: 10/25/93
SAMPLE SPIKED: 9310160-01
CLIENT PROJ. ID: 1736.11

AEN JOB NO: 9310162
INSTRUMENT: F

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8020
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
Benzene	9.8	ND	9.4	9.6	96.9	2.1
Toluene	34.9	ND	35.9	36.8	104.0	2.5

CURRENT QC LIMITS (Revised 05/14/92)

Analyte	Percent Recovery	RPD
Benzene	(81.4-115.3)	10.2
Toluene	(85.3-112.4)	9.4

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected

*** END OF REPORT ***

R-1, S-D
R-3, S-1

9310162

Chain-of-Custody Record

No 3908

Date: 10/15/93

Page 1 of 1

Project No.: 1736.11

Samplers (Signatures): James M Carolan

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 8020	Cooled	Soil (S) or water (W)	Acidified	Number of containers
10/15	1115	GMW-6						X	X	X	W	X	5

ANALYSES

REMARKS

Additional comments

Turnaround time: Standard

Results to: Jeff Nelson

Total No. of containers: 5

Relinquished by:	Date	Relinquished by:	Date:	Relinquished by:	Date:
Signature: James M Carolan	10/15/93	Signature: Thomas R Jones	10/15/93	Signature: Ron Stallings	
Printed name: Jim Carolan		Printed name: THOMAS R JONES		Printed name: Ron Stallings	
Company: Geomatrix		Company: GEOMATRIX		Company: AEN.	
Received by:	**Time**	**Received by:** Jon Hedlund	**Time:**	**Received by:** Kevin Mclander	**Time:**
Signature: Thomas R Jones	1530	Signature: Ron Stallings	1615	Signature:	1710
Printed name: THOMAS R JONES		Printed name:		Printed name: Kevin Mclander	10-15-93
Company: GEOMATRIX		Company: AEN		Company: AEN	

Method of shipment: Lab Pickup

Laboratory comments and Log No

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

WATER LEVEL MONITORING RECORD

GEOMATRIX

Project 1736.11 Project No. Marina Village

Date 10/15/93 Recorded By Jim Carolan

Note: Use these abbreviations to make your life easier:
P = Pumping SC = Specific Conductance Measured
I = Inaccessible WS = Water Sample Collected

Well No.	Date	Water Level Below MP (feet)	Corrections (feet)	~~Water Level~~ Previous Below GL (feet)	Water Level Elevation (feet, MSL)	Remarks
GP-1	10/15/93	9.00		8.46		
GMW-3		6.88		11.15		
GMW-4		7.57		7.73		
GMW-5		7.75		7.64		
GMW-6		5.74		5.66		
GMW-7		7.24		7.99		
LF-2		8.73		9.01		
WC-3		8.98		9.43		
GMW-8		3.24		3.33		
GMW-9		4.09		3.87		
GMW-10		3.20		3.27		
GMW-1		5.54		5.43		
		7.88		8.01		North of LF-2 1301 Marina Village

Geomatrix Consultants
100 Pine Street, 10th Floor
San Francisco, California 94111
(415) 434-9400

MONITORING WELL SAMPLING RECORD AND WELL DEVELOPMENT DATA

Well ID: GMW - 6
Sample ID.: GMW - 6 Duplicate ID.:
Sample Depth: 12'
Project No: 1736.11
Project Name: Marina Village
Date: 10/13/93
Sampled By: JMS

Initial Depth to Water: 5.66' T.O.C.
Depth to Water after Purging:
Total Depth of Well: 18' T.O.C.
Well Diameter: 2"
1 Casing Volume = 2.01 gallons
4 Casing Volumes = 8 gallons
Method of Purging: Diaphragm Pump
Method of Sampling: Teflon Bailer

TIME	INTAKE DEPTH	RATE (gpm)	CUM. VOL. (gal)	TEMP. (°C)	pH (units)	CONDUCTIVITY (umhos/cm)	REMARKS (color, turbidity & sediment)
1051	16'		2	21.5	7.0	>19,000	Clear
1052	16'		4	21.8	7.0	>19,000	Clear
1053	16'		6	21.9	7.0	>19,000	Clear, pumped dry
1055	16'		8	22.1	7.0	>19,000	Clear, pumped dry
1115	12' SAMPLE			22.2	7.0	>19,000	Clear

pH CALIBRATION (CHOOSE TWO)				Model or Unit No.:
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Temp. °C				
Instrument Reading				

SPECIFIC CONDUCTANCE - CALIBRATION:						Model or Unit No.:
KCL Solution (umhos/cm at 25°C	1409	12856				
Temp. °C						
Instrument Reading						

Notes