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QUARTERLY MONITORING REPORT CALENDAR QUARTER: JULY - SEPTEMBER 1993

Parcel H Marina Village Development Alameda, California

Prepared for

Alameda Real Estate Investments 1150 Marina Village Parkway Alameda, California

September 1993 Project No. 1736.10

Geomatrix Consultants

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



7 October 1993 Project 1736.10

Mr. Kevin Tinsley 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 July - September 1993 Proposed Buildings 4 and 5, Parcel H

Marina Village Alameda, California

Dear Mr. Tinsley:

On behalf of Alameda Real Estate Investments, Inc. (AREI), Geomatrix Consultants, Inc. (Geomatrix), is submitting the subject report. If you have any questions regarding this report, please call either of the undersigned.

Sincerely,

GEOMATRIX CONSULTANTS, INC.

Jeff Nelson, P.E. Project Manager

Jeff Who

Gule Nixon

Senior Project Engineer

ICN/str 1736\PRCHQRT3.LTR

Enclosure

cc: Mr. Rahn Verhaeghe, AREI

Mr. Richard Hiett, Regional Water Quality Control Board



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QUARTERLY MONITORING REPORT CALENDAR QUARTER JULY - SEPTEMBER 1993

Parcel H
Marina Village
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), near the site of proposed Buildings 4 and 5, Parcel H, Marina Village Development, Alameda, California (Figure 1). These activities are part of a quarterly groundwater monitoring program initiated in January 1993 and conducted during July 1993. The purpose of this program is to comply with an Alameda County Department of Environmental Health (ACDEH) request to assess petroleum hydrocarbons in shallow groundwater downgradient of the property. Work at the site was completed in accordance with the proposed site management plan included in the January 1993 report entitled "Phase I and Phase II, Evaluation of Fill Material, Proposed Buildings 4 and 5 - Parcel H" submitted to ACDEH by Geomatrix.

2.0 QUARTERLY PROGRESS SUMMARY

The work performed during this quarter is summarized below:

- Water levels were measured in four monitoring wells in the vicinity of the site on 7 July 1993. Water-level measurements and procedures are described in Section 3.0.
- Geomatrix performed the third of four quarterly groundwater sampling events on 7 July 1993. Section 4.0 describes the groundwater sampling activities and 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 7 July 1993. Well construction data for these wells are summarized in Table 1. Monitoring well locations and water-level elevations are shown on Figure 2. Water levels were measured to the nearest 0.01 foot using a Sinco electric well sounder following the Geomatrix protocol 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; field notes are included in Appendix A.

Water-level elevations across the site ranged from -6.76 feet at well GMW-3 to -0.37 feet at well GMW-4 (City of Alameda Datum). Historical water-level elevation data suggest that localized hydraulic gradient direction varies in the site vicinity; this variability may be caused by tidal influences, recharge from surface irrigation, and/or the presence of relatively impermeable subsurface structures, particularly in the vicinity of the shipway structures (see Figure 2). Therefore, interpretation of the hydraulic gradient direction is somewhat uncertain in the immediate vicinity of the site and is not shown on Figure 2. However, based on previous experience in this area, the horizontal hydraulic gradient generally trends to the northwest. Based on this quarter's data, the horizontal hydraulic gradient in the site and vicinity ranges from about 0.002 to 0.04 feet per foot.

4.0 QUARTERLY GROUNDWATER SAMPLING AND ANALYSIS

Groundwater samples were collected from monitoring wells GMW-3 and GMW-5 on 7 July 1993. Samples were collected in accordance with the Geomatrix protocol previously submitted for this project. Immediately after collection, groundwater samples were placed in an ice-chilled cooler and transported under Geomatrix chain-of-custody procedures to American Environmental Network (AEN), formerly Quanteq Laboratories, of Pleasant Hill,



California, a state-certified analytical laboratory.

Samples were analyzed by AEN for TPH as motor oil, according to Environmental Protection Agency (EPA) Method 3510 GCFID. Copies of chain-of-custody records are included in Appendix A. TPH as motor oil was detected at a concentration of 0.4 mg/l in the sample from well GMW-5; TPH as motor oil was not detected in the sample collected from well GMW-3. Laboratory results are presented in Table 3; laboratory reports are included in Appendix A.

5.0 RECOMMENDATIONS

We recommend that the groundwater monitoring program proceed as outlined in our January 1993 report. The monitoring plan includes quarterly monitoring for petroleum hydrocarbons for 1 year, then reducing the sampling frequency to annually or biennially, subject to the approval of the ACDEH and RWQCB.



TABLE 1

WELL CONSTRUCTION DATA

Parcel H Marina Village Alameda, Californía

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 ^{1,2} (feet)
GP-1	4/15/92	17	7-17	6-17	6.66	6.07
GMW-3	4/16/92	13.5	3.5-13.5	2.5-14	4.39	4.55
GMW-4	4/16/92	13.5	3.5-13.5	2.5-14	7.36	6.80
GMW-5	2/1/93	20	5-20	4-20	5.37	5.6 ²

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 Ground surface elevation is approximate.



TABLE 3

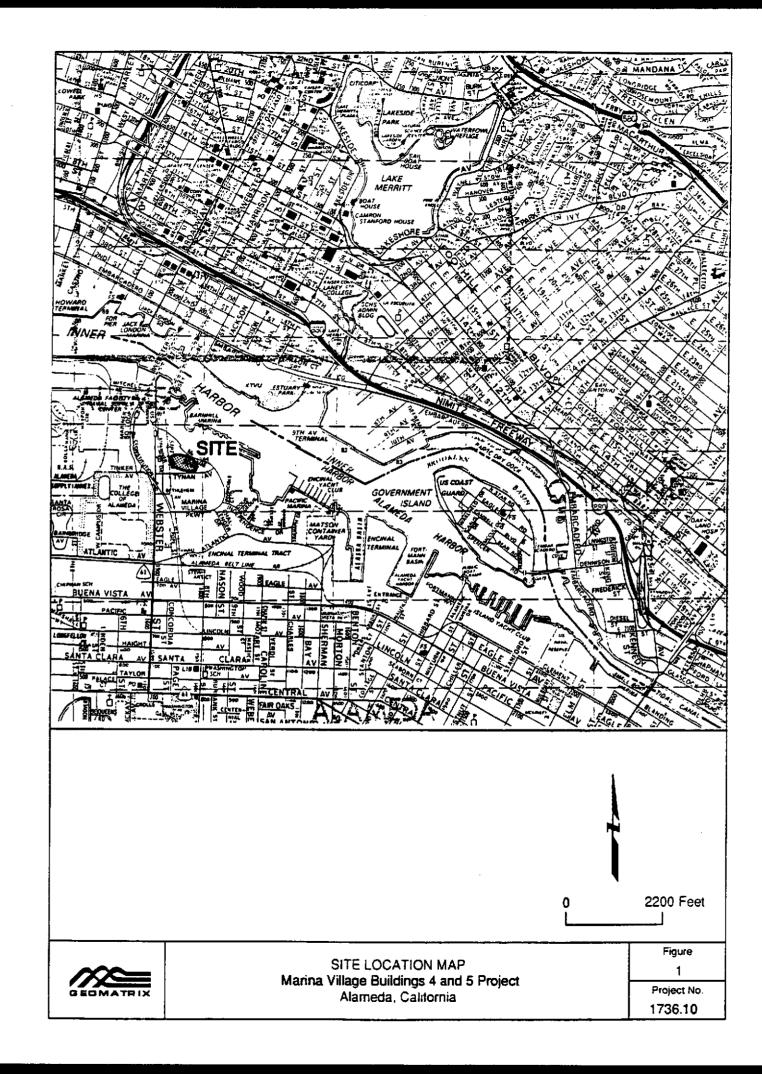
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

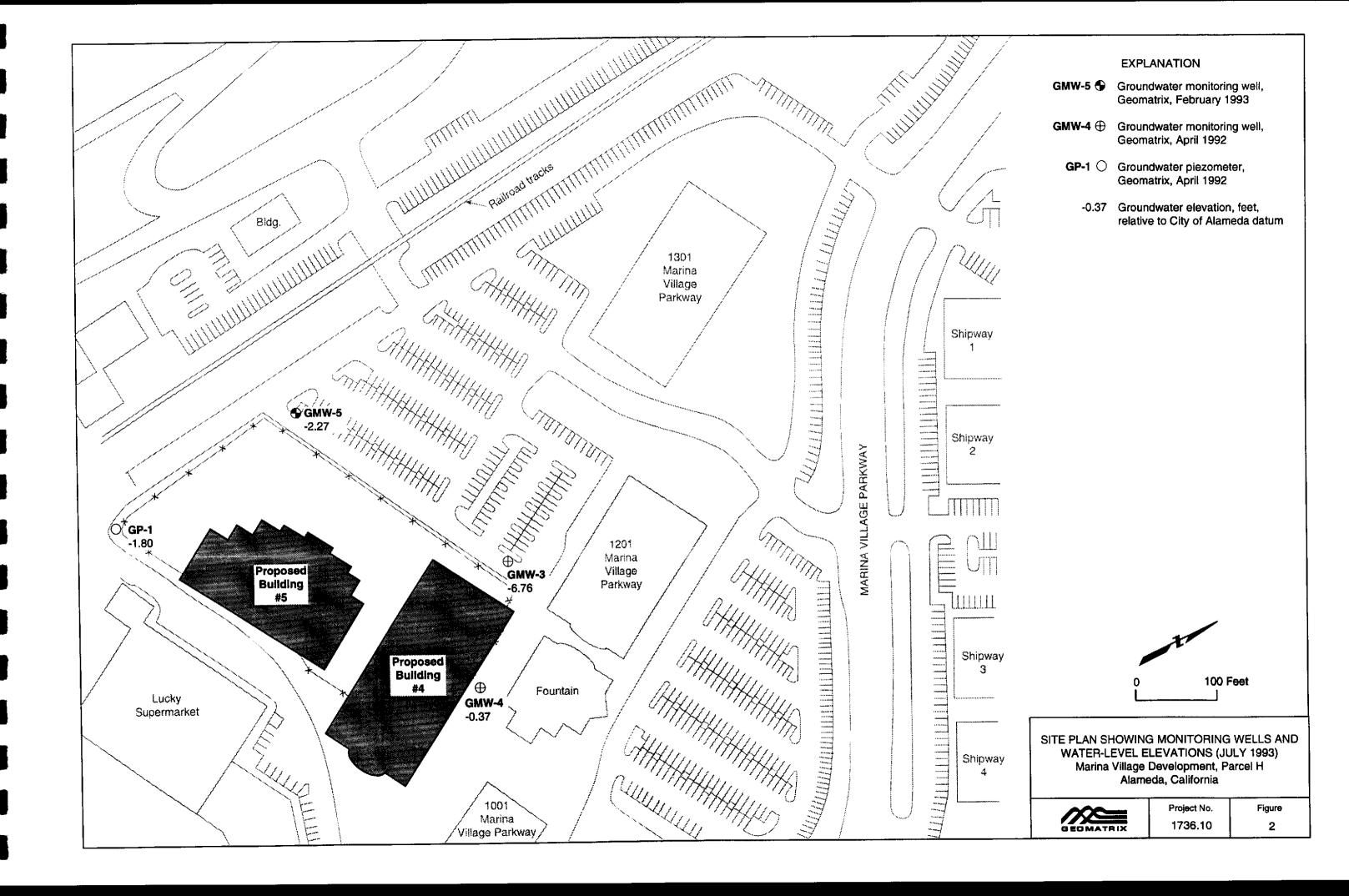
Parcel H Marina Village Alameda, California

Results in milligrams per liter (mg/l)

Well Number	Sample Date	Extractable Petroleum Hydrocarbons as Motor Oil ¹
GMW-3	2/11/93	0.2
GMW-5	2/11/93	0.4
GMW-3	4/5/93	0.4
GMW-5	4/5/93	0.4
GMW-3	7/7/93	<0.2
GMW-5	7/7/93	0.4

¹ Samples analyzed by American Environmental Network of Pleasant Hill, California according to EPA Methods 3510/3520 GCFID.







APPENDIX A

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

American Environmental Network

A See Configuration And Secretary

DOHS Certification: 1172

MHA Accreditation: 94523-001

PAGE 1 OF 3

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

ATTN: JEFF NELSON

CLIENT PROJ. ID: 1736.10

C.O.C. NO: 3091

REPORT DATE: 07/21/93

DATE SAMPLED: 07/07/93

DATE RECEIVED: 07/07/93

AEN JOB NO: 9307066

PROJECT SUMMARY:

On July 7, 1993, this laboratory received two (2) water samples.

Client requested samples be analyzed for Total Petroleum Hydrocarbons as Oil by EPA Method 3520 GCFID. Sample identification, results and dates analyzed are summarized on the following pages.

Sample extracts for Extractable Hydrocarbons as Oil were treated with silica gel prior to analysis.

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.

andlem for Larry Klein General Manager

Results FAXed 07/16/93

PAGE 2 OF 3

GEOMATRIX CONSULTANTS

DATE SAMPLED: 07/07/93 DATE RECEIVED: 07/07/93

CLIENT PROJ. ID: 1736.10

REPORT DATE: 07/21/93

AEN JOB NO: 9307066

Client Sample Id.	AEN Lab Id.	Extractable Hydrocarbons as Oil (mg/L)
GMW-3 GMW-5	01A 02A	ND 0.4
Reporting Li	0.2	

Method: 3520 GCFID

Instrument: C

Date Extracted: 07/09,14/93 Date Analyzed: 07/13-14/93

ND = Not Detected

PAGE 3 OF 3

QUALITY CONTROL DATA

DATE EXTRACTED: 07/09/93 DATE ANALYZED: 07/13/93 CLIENT PROJ. ID: 1736.10

AEN JOB NO: 9307066

SAMPLE SPIKED: D.I. WATER

INSTRUMENT: C

MATRIX SPIKE RECOVERY SUMMARY TPH EXTRACTABLE WATER METHOD: EPA 3520 GCFID

ANALYTE	Spike Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Diesel	2.02	ND	1_75	1.62	83.4	7.7

CURRENT QC LIMITS (Revised 06/22/92)

<u>Analyte</u>	Percent Recovery	<u>RPD</u>
Diesel	(45.0-103.3)	25

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

ND = Not Detected

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WATER LEVEL MONITORING RECORD



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29:39	GMW-3	<u> </u>	(1.15						7
09:43	GMW-4	<u></u>	7.73						1
09:31	GMW-5		7.64						7
39704	OMW-6		5.66						7
09-26	GMW-7		7.99			_			7
39:12	LF-3	·	9.01						7
J9 ⁻ 22	wc-3		9.43						7
(0:07	GMW-8		3.33			5.64			1
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Geometrix Consultants

100 Fine Street, 10th Ficor San Francisco, California, 94111 (415) 434-5400

MONITORING WELL SAMPLING RECORD AND WELL DEVELOPMENT DATA

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				ID		Depth to Water after Purging:					
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					4 Casing Voli	umes = 14 gallonit 3 o	<u> </u>				
Sample	d Sy:	-JWC			Method of Purging: Disphrasim Pomp						
					·	Method of Sa	moting: Teffen Ball-v				
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Geomatrix Consultants

100 Fine Street, 10th Floor San Francisco, California, 94111 (415) 434-8400

MONITORING WELL SAMPLING RECORD AND WELL DEVELOPMENT DATA

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							4 Casing Volumes = 2 gallons					
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