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GEOMATRIX

June 9, 2000
Project 6262.000.0

Mr. Hugh J. Murphy
City of Hayward Fire Department
777 B Street
Hayward, California 94541-5007

Subject: Summary of Groundwater Conditions
Hayward Area Recreation District Property
Hayward, California

Dear Mr. Murphy:

As requested by the City of Hayward, Geomatrix Consultants, Inc. (Geomatrix) has prepared this letter to summarize available information on groundwater conditions at the Hayward Area Recreation District (HARD) property (Figure 1). The HARD property, located at 695 Industrial Parkway in Hayward, California, is approximately 4.5-acres. SummerHill Homes (SummerHIll) is in the process of acquiring 1.1 acres of the property for additional residential development; groundwater conditions for this portion of the property were evaluated previously.[1] On HARD's behalf, SummerHill will develop the remaining 3.4 acres as a park (HARD park property). The results described herein address these 3.4 acres.

PREVIOUS ASSESSMENT

Geomatrix reviewed a draft Phase II conducted for 695 Industrial Parkway (the southern section of the subject site) by Earth Systems Environmental, Inc. (ESE) for Hayward Area Recreation Department completed on June 17, 1991. ESE noted the following storage activities at the Park property: 50 truck trailers, 20 roll-off bins (some containing debris), 20 junk cars, 30 junk industrial vehicles, several 55-gallon drums with probable used motor oil, and mounds of soil and household debris on the northeastern third of the property. Numerous areas of stained soil were also observed.

Based on observations and the previous Phase I performed by CERTIFIED, ESE installed three soil borings (TH-1, TH-2, and TH-3) where surface staining was observed along the western property boundary. One monitoring well was installed at the northeast corner of the property. The ESE report did not provide a figure to show the locations of these samples.

ESE sampled soil at 2.5, 5, 10, 15, and 20 feet below ground surface (bgs). Six samples collected in the upper 10 feet (two from each location) were submitted for analysis for total recoverable petroleum hydrocarbons (TRPH) (U.S. EPA Method 418.1). Three soil samples from the shallowest depth (approximately 2.5 feet bgs) at each location were analyzed for total chromium and total lead. Also, the shallowest soil sample from one of the borings

[1] Geomatrix, 2000, Final Soil Sampling Results-Unoccupied Residential Lots, Canterbury Residential Development, April 28.

(TH-1 at 2.5 feet bgs) was analyzed for the presence of solvents (U.S. EPA Method 8010). TRPH was detected at two of the three shallow locations (40 and 80 mg/kg), but was not detected in any of the three deeper samples (approximately 10 feet bgs). Total lead and chromium were detected at concentrations representative of background. Solvents were not detected in the shallow soil sample analyzed. Results are provided in Table 1.

The monitoring well (MW-1) was drilled to a depth of 27 feet, and the well screen installed from 7 to 27 feet bgs (groundwater was encountered at 12 feet bgs). The groundwater sample was analyzed for the presence of TPH as gasoline (TPHg) and gasoline constituents (benzene, toluene, ethylbenzene and total xylenes [BTEX]). All groundwater results were below detection limits for these compounds; however, laboratory data sheets were not available to verify the detection limits. Records of well abandonment for this well were not identified; the well was not visible during the site visit or subsequent sampling activities by Geomatrix at the site.

SITE INVESTIGATION

On May 10, 2000, Geomatrix supervised the advancement of eight soil borings in accordance with the work plan developed for the project.[2] A 200-foot grid sampling approach was used to provide an aerial distribution of data across the site. Eight soil borings were advanced at the locations shown in Figure 2. Saturated clayey sand was observed at 5 of the 8 locations (GMX-HRD-3, GMX-HRD-4, GMX-HRD-6, GMX-HRD-7, and GMX-HRD-8) at approximately 6.5 to 7.5 feet bgs. Soil samples were collected for laboratory analyses (approximate depths of 1, 5, and 9 feet bgs). Samples from the 1- and 5-foot depth interval were analyzed for total petroleum hydrocarbons quantified as motor oil (TPHmo; U.S. EPA Method 8015 modified, after a silica gel cleanup), polycyclic aromatic hydrocarbons (PAHs; U.S. EPA Method 8270C SIM [selected ion mode]), volatile organic compounds (VOCs; U.S. EPA Method 8260), and organochlorine pesticides (U.S. EPA Method 8081). Samples from the 9-foot depth interval were placed on hold, pending shallow analysis results.

At least one PAH was detected in three of the 8 shallow samples, up to four VOCs were detected in five of the 8 shallow samples, and one pesticide was detected in one of the 8 shallow soil samples. None of the compounds analyzed were detected in the 5-foot depth interval samples; therefore, the 9-foot samples were not analyzed.

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[2] Geomatrix, 2000, Results of Phase II Investigation, Hayward Area Recreation District Property, 695 Industrial Parkway, Hayward, California, June 1.

CONCLUSION

Based on these results, it is unlikely that activities at the HARD property have impacted groundwater.

Sincerely yours,
GEOMATRIX CONSULTANTS, INC.

Thomas H. Gavigan, R.G., C.HG.
Project Hydrogeologist

Ann M. Holbrow
Senior Scientist

THG/AMH/pp
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Attachments: Table 1 – ESE's Soil and Groundwater Analytical Results for the HARD Park Property
Table 2 – Geomatrix's Soil Analytical Results for Total Petroleum Hydrocarbons as Motor Oil, Pesticides, Volatile Organic Compounds, and Polycyclic Aromatic Hydrocarbons
Figure 1 – Site Vicinity Map
Figure 2 – Site Plan with Boring Locations

cc: Kimberly Brandt – LFR Levine-Fricke
Mark Beskind – SummerHill Homes
Susan Hugo – Alameda County Health Care Services
Denise Tsuji – Department of Toxic Substances Control
Roger Brewer – RWQCB, San Francisco Bay Region

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TABLE 1

ESE's SOIL AND GROUNDWATER ANALYTICAL RESULTS FOR THE HARD PARK PROPERTY[1]

Canterbury Residential Development
Hayward, California

SOIL RESULTS

(reported in milligrams per kilograms; mg/kg)

Sample No.	Depth (feet bgs)	TRPH	Total Chromium	Total Lead	HVOCs
TH-1	2.5'	80	22.0	42.3	<0.0005
TH-1	10.5'	<20	NA	NA	NA
TH-2	1'	40	16.4	9.32	NA
TH-2	10'	<20	NA	NA	NA
TH-3	2.5'	<20	18.5	8.92	NA
TH-3	10'	<20	NA	NA	NA

GROUNDWATER RESULTS[2]

(reported in micrograms per liter; µg/L)

Sample No.	Depth to Water (feet bgs)	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes
TH-1	9.8	ND	ND	ND	ND	ND

Notes:

[1] Earth Systems Environmental Inc., 1991, "Phase II Environmental Site Assessment, 695 Industrial Parkway, Hayward, California," June 17.

[2] Laboratory data sheet not provided to specify detection limits.

NA – Not analyzed

ND – Not detected

HVOCs – Halogenated volatile organic compounds by U.S. EPA Method 8010.

TPHg – Total petroleum hydrocarbons as gasoline.

TRPH – Total recoverable petroleum hydrocarbons by U.S. Method 418.1.

Sample ID	TPHmo EPA Method 8015M	4,4'-DDE EPA Method 8081	Acetc	Fluoran-thene	Indeno (1,2,3-cd) pyrene	Phenan-threne	Pyrene
GMX-HRD1-1.0	<50[2]	NA	**310[3]/2**	60	<50	<50	<50
GMX-HRD1-1.5	NA	**8.1**	NA	NA	NA	NA	NA
GMX-HRD1-5.0	<50	NA	<5(	<5	<5	<5	<5
GMX-HRD1-5.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD2-1.0	<50	NA	**110**	**56**	**28**	**26**	**56**
GMX-HRD2-1.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD2-5.0	<50	NA	<5(	<5	<5	<5	<5
GMX-HRD2-5.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD3-1.0	<50	NA	**60[4]**	<5	<5	<5	<5
GMX-HRD3-1.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD3-5.0	<50	NA	<5(	<5	<5	<5	<5
GMX-HRD3-5.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD4-1.0	<50	NA	<5(	<50	<50	<50	<50
GMX-HRD4-1.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD4-5.0	<50	NA	<5(	<5	<5	<5	<5
GMX-HRD4-5.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD5-1.0	<50	NA	**56[5]**	<50	<50	<50	<50
GMX-HRD5-1.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD5-5.0	<50	NA	<5(	<5	<5	<5	<5
GMX-HRD5-5.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD6-1.0	**130**	NA	**300**	**76**	<50	<50	**76**
GMX-HRD6-1.5	NA	<20	NA	NA	NA	NA	NA
GMX-HRD6-5.0	<50	NA	<5(	<5	<5	<5	<5
GMX-HRD6-5.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD7-1.0	<50	NA	<5(	<50	**58**	<50	<50
GMX-HRD7-1.5	NA	<2	NA	NA	NA	NA	NA
GMX-HRD7-5.0	<50	NA	<5(	<5	<5	<5	<5
GMX-HRD7-5.5	NA	<2	NA	NA	NA	NA	NA

TABLE 2

GEOMATRIX's SOIL ANALYTICAL RESULTS FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL, PESTICIDES, VOLATILE ORGANIC COMPOUNDS, AND POLYCYCLIC AROMATIC HYDROCARBONS[1]

Canterbury Residential Development
Hayward, California

All concentrations are reported in micrograms per kilogram (µg/kg), except for TPHmo which is reported in milligrams per kilogram (mg/kg).

			Volatile Organic Compounds EPA Method 8260B					Polycyclic Aromatic Hydrocarbons EPA Method 8270C SIM										
Sample ID	TPHmo EPA Method 8015M	4,4'-DDE EPA Method 8081	Acetone	2-Butanone (MEK)	Methylene chloride	p-Iso-propyl-toluene	Toluene	Benz(a) anthracene	Benzo(b) fluoran-thene	Benzo(k) fluoran-thene	Benzo (g,h,i) perylene	Benzo(a) pyrene	Chrysene	Dibenzo (a,h) anthracene	Fluoran-thene	Indeno (1,2,3-cd) pyrene	Phenan-threne	Pyrene
GMX-HRD8-1.0	<50	NA	<50	<50	**52**[5]	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD8-1.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GMX-HRD8-5.0	<50	NA	<50	<50	**84**[5]	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GMX-HRD8-5.5	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRGs	--[7]	1700	1,600,000	7,300,000	8900	--[7]	520,000	620	620	6200	3,700,000[8]	62	6100	62	2,300,000	620	22,000,000[8]	2,300,000

Notes:

[1] Only compounds detected are shown in table.

[2] < = Not detected above laboratory reporting limit indicated.

[3] The analyte indicated was found in the blank. A small percentage of the material present may be due to laboratory contamination.

[4] Sample was analyzed a second time after 10-fold dilution to bring toluene concentration within reporting limits. Results presented after " / " were from diluted sample.

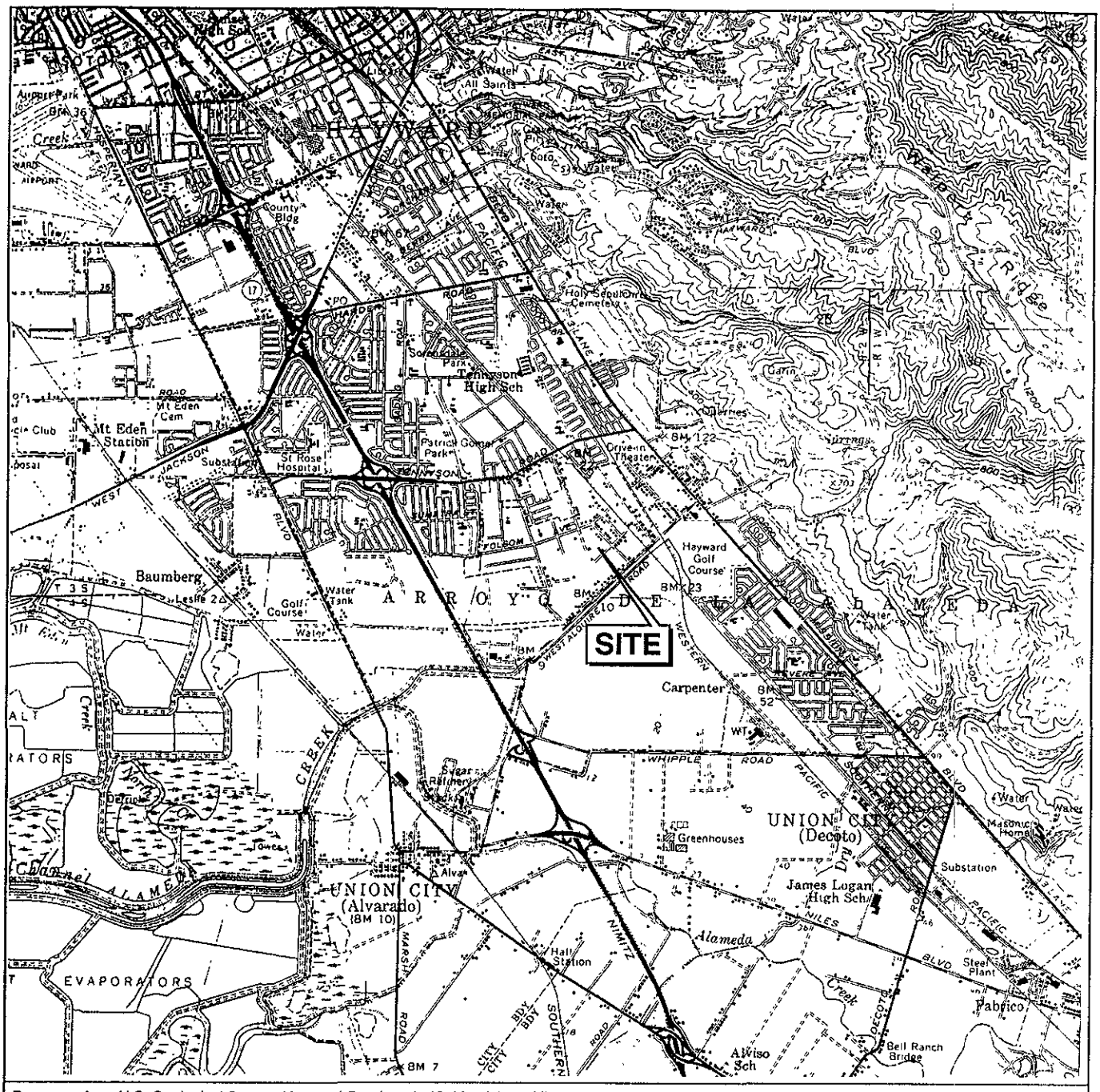
[5] The analyte indicated was found in the blank. Its presence may be due to laboratory contamination.

[6] The internal standard associated with the analyte is out of control limits. The reporting limit or reported concentration is an estimate.

[7] PRG not available.

[8] A surrogate PRG was used because a PRG was not available for this compound. The surrogate was selected based on physico-chemical properties:

Acenaphthene for benzo(g,h,i)perylene
Anthracene for phenanthrene



Base map from U.S. Geological Survey; Hayward Quadrangle (California), 15 Minute series (topographic), 1959.

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SITE VICINITY MAP
Canterbury Residential Development
Olympic Avenue
Hayward, California

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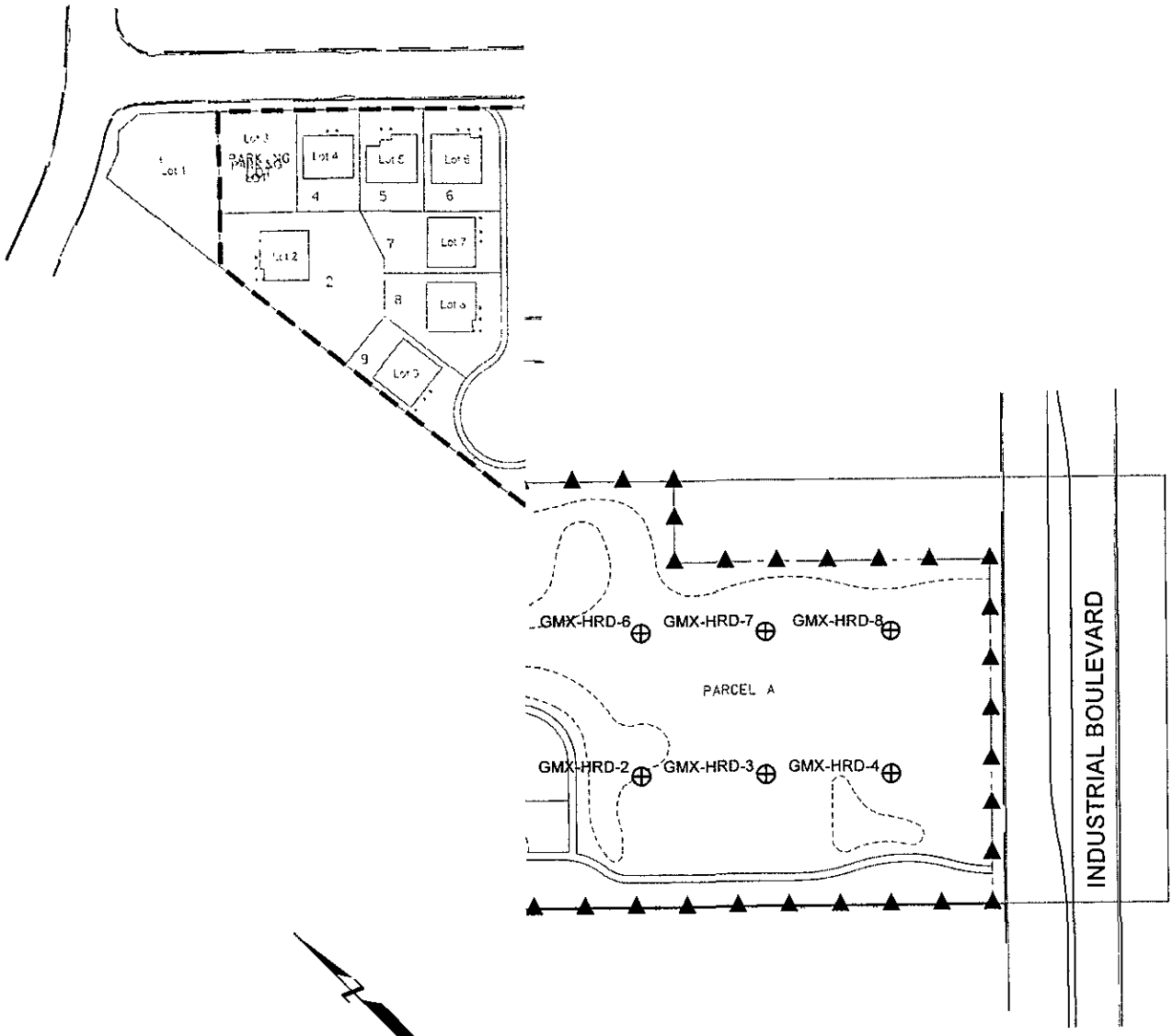
Figure
1



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SCALE IN FEET

EXPLAN

HARD P.

BORING

TRACT

TRACT

SITE PLAN WITH BORING LOCATIONS
695 Industrial Parkway (HARD Park Property)
Hayward, California

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