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September 19, 2006

MONITORING WELL INSTALLATION WORKPLAN

6310 Houston Place
Dublin, California

Project No. 261639
ACEHS Toxics Case # RO0002862

Prepared On Behalf Of

Mr. Cary Greyson
G&G International Holding
2413 Stirrup Court
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Prepared By

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September 19, 2005

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: **Work Plan – Monitoring Well Installation**
6310 Houston Place
Dublin, California
AEI Project # 261639
ACHCSA Fuel Leak No. RO0002862

Dear Mr. Chan:

The following work plan has been prepared on behalf of G&G International Holding (G&G) for the facility located at 6310 Houston Place in the City of Dublin, Alameda County, California (Figure 1). AEI Consultants (AEI) has been retained by G&G to provide environmental engineering and consulting services associated with a release of petroleum hydrocarbons from the former diesel underground storage tank (UST) system at the site.

This plan outlines a scope of work to install and monitor five (5) groundwater monitoring wells at the site and associated sampling and reporting. These activities were requested by Alameda County Health Care Services Agency (ACHCSA) to further evaluate impacted groundwater at the site in a letter dated July 31, 2006. The purpose of the monitoring wells is to investigate contaminant plume stability data and evaluate treatment options in preparation for remediation.

SITE DESCRIPTION AND BACKGROUND

The subject property is located in a commercial and light industrial area of Dublin, on the south side of Houston Place, just east of Dougherty Road. The subject property yard is currently vacant although the building is used for storage. Please refer to Figures 1 and 2 for the site location map and site plan details. According to records on file with the Dublin Building Department (DBD), three USTs (one 12,000-gallon diesel USTs, one 7,500-gallon gasoline UST, and one 2,000-gallon gasoline UST) were installed on the subject property in 1968.

Previous Releases

According to a case closure summary report prepared by Alameda County Health Care Services Agency (ACHCSA), a piping leak and a localized surface spill of used motor oil were discovered at the site prior to 1984. Following the release, 156 cubic yards of contaminated soil was removed from the site to the satisfaction of San Francisco Bay Regional Water Quality Control Board (SFRWQCB). On March 31, 1989, four USTs (one 500-gallon waste oil, two 12,000-gallon and one 8,000-gallon diesel tanks) were excavated, three of which were removed. One

12,000-gallon diesel UST was refinished internally with "Glass Armor" coating and was reinstalled for continued use. Soil samples collected from the sidewalls of the excavation during tank removal activities had concentrations of Total Petroleum Hydrocarbons as diesel (TPH-d) to 190 milligrams per kilogram (mg/kg) and Total Oil and Grease (TOG) up to 240 mg/kg. No concentrations of TPH as gasoline; Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX); or chlorinated hydrocarbons were detected in these samples. One grab groundwater sample was collected from the diesel UST excavation, which had concentrations of TPH-d and TOG up to 380,000 micrograms per liter (µg/L) and 50,000 µg/l, respectively.

Following removal of the three USTs, three groundwater monitoring wells (MW-1 through MW-3) were installed on August 9, 1989, and quarterly groundwater monitoring and sampling commenced. To further define the extent of the groundwater contamination plume, three additional wells (MW-4 through MW-6) were installed between May 1990 and March 1991. TPH-d and TOG were detected up to 22,000 µg/L and 8,600 µg/L, respectively, during initial sampling of these wells. Intermittent monitoring and sampling of the wells continued between August 1989 and October 1994. During the last sampling episode conducted in October 1994 concentrations of TPH-d and TOG were detected up to 850 µg/L and 600 µg/L, respectively. Refer to Appendix A for previous groundwater sample analytical results. Based on a recent site inspection, the former onsite monitoring wells had been decommissioned. Approximate former well locations are shown on Figure 2.

Based on the gradual decline of TPH-d and TOG in the groundwater, and the remaining low concentrations of these contaminants in groundwater and soil, the ACHCSA granted case closure in a letter dated February 28, 1995.

At the request of a prospective purchaser of the property, AEI collected samples from on-site monitoring wells MW-1, MW-2, and MW-5 on January 23, 2001. TPH-d was detected up to 5,200 µg/L in the samples. No concentrations of TOG were detected in these samples. Monitoring wells MW-1 through MW-6 have been decommissioned, although no information was available to AEI as to the date and methods of decommissioning.

12,000-gallon diesel UST Removal

On October 27, 2004, the remaining 12,000-gallon diesel UST, fuel dispensers, and product piping were removed from the subject property by Golden Gate Tank Removal, Inc. (GGTR). Following excavation, GGTR collected a total of seven soil and two groundwater samples from the UST excavation bottom and sidewall, overburden stockpile, and areas in the vicinity of the fuel dispensers and product piping. These samples were analyzed for TPH-d, MTBE, and BTEX. TPH-d was detected at concentrations of 6 mg/kg and 197 mg/kg in stockpile soil samples and at a concentration of 1 mg/kg in a soil sample obtained from the UST excavation sidewall. TPH-d was detected in the water sample collected from the UST pit at 0.3 mg/L and at 23.8 mg/L in water that was present in the shallow excavation beneath the dispenser. Locations of the samples collected by GGTR are shown on Figure 2 and a summary of sample analytical data from the tank removal is presented in Tables 3 and 4. The excavation was backfilled with the stockpiled soil and imported fill.

Upon reviewing the GGTR Tank Closure Report, the ACHCSA issued a letter dated April 12, 2005 requesting additional investigation regarding the release of petroleum hydrocarbons from the 12,000-gallon UST. On March 14, 2006, AEI performed a Soil and Groundwater Investigation consisting of the collection and analysis of soil and groundwater samples at the site. Five soil borings were advanced in the areas of the former 12,000-gallon diesel UST, the former dispenser island and products lines, and down-gradient from the former diesel UST. TPH-d was detected in the soil up to a concentration of 53 mg/kg. TPH-d and MTBE were detected in the groundwater samples up to concentrations of 580,000 µg/L and 2.6 µg/L, respectively. The findings of this investigation concluded that the release of TPH-d originated from the 12,000-gallon diesel UST, as the diesel release post-dates the previous releases at the property.

Upon reviewing the *Soil and Groundwater Investigation Report*, the ACHCSA issued a letter, dated July 31, 2006, requesting the workplan presented in this report.

CONTAMINANT OF CONCERN

The investigation efforts performed to date have identified that the material released from the site is consistent with mid-range (diesel) fuel hydrocarbons.

Exhibit 1: Identified Contaminant of Concern

Contaminant	Maximum Concentration (Sample ID)	
	Soil in mg/kg	Groundwater in µg/l
TPH-d	53 (SB-4-8')	580,000 (SB-5-W)

LDL – Laboratory Detection Limit

In addition to the diesel contaminant above, MTBE and xylenes have been analyzed for and detected, but do not appear to be significant at the site.

ENVIRONMENTAL SETTING

Geology and Hydrology

Based on a review of the United States Geological Survey (USGS) Dublin, California Quadrangle topographic map, the site is situated in the southeast end of the San Ramon Valley, and is located approximately ¾-mile south/southeast of the Dougherty Hills, which are foothills of Mount Diablo. The site is situated east of Dougherty Creek, which is located approximately ½-mile from the site. The site is relatively flat and at an elevation of approximately 335 feet above mean sea level (amsl). Any apparent slope throughout the surface of the site was likely produced to manage surface water drainage.

Based on the USGS Quaternary Geology of Alameda County, and Parts of Contra Costa, Santa Clara, San Mateo, San Francisco, Stanislaus, and San Joaquin Counties, California: A Digital Database, surface deposits in the vicinity of the site consist of Holocene Age Basin Deposits. These are identified as by very fine silty clay to clay deposits occupying flat-floored basins at the distal

edge of alluvial fans.

During previous investigations, groundwater has been encountered at depth of approximately 12 feet below ground surface (bgs). Previous monitoring identified a southeasterly groundwater flow direction with a hydraulic gradient of 10^{-3} ft/ft.

CONDUIT AND RECEPTOR SURVEY

During site reconnaissance activities, AEI inspected the property for evidence of utilities and other subsurface conduits. A storm drain was identified just east of the property boundary, approximately 15 feet from the former UST area. Along the northern boundary of the property, telecommunications and electrical service lines were apparent. Natural gas and water lines were observed entering the property from the northwest corner, running to the western side of the property building. The location of sewer lines could not be ascertained. Locations of the identified utilities are shown on Figure 2. The depth of the storm drain appeared to be approximately 2 to 4 feet. The depth of the other utilities is assumed to be 3 to 8 feet, based on construction standards. With the possible exception of the storm drain east of the former tank hold, there were no utility conduits that are likely to provide preferential pathways for contaminant migration.

The Department of Water Resources (DWR) and Alameda County Public Works Agency (ACPWA) have both been contacted for well records for the area. As of the date of this document, these record searches are not yet complete. This information will be incorporated into the forthcoming report.

GROUNDWATER INVESTIGATION

To continue assessment of the release in preparation for remediation, AEI proposes installing five groundwater monitoring wells (DW-1 through DW-5). The locations of the wells were chosen to assess the extent and stability of the plume. A summary of the proposed wells is presented below, along with completion details and an explanation of the purpose of each. Proposed well locations are shown on Figure 2.

Exhibit 1: Proposed Wells

Well ID	*Location / Purpose*	*Casing Diameter (inches)*	*Screen interval (ft bgs)*
DW-1	Up gradient of former tank hold, assess any up-gradient pollution contribution	2	5 – 15
DW-2	Near former tank hold, assess source area of contamination	2	5 – 15
DW-3	Near former product lines, assess cross-gradient extent of contamination	2	5 – 15
DW-4	Near former dispensing island, assess cross-gradient extent of contamination	2	5 – 15
DW-5	Down gradient of former tank hold, assess down-gradient extent of contamination	2	5 – 15

Final well construction details (exact screen interval, slot size, etc.) will be determined in the field.

Well Installation

The wells will be installed in borings drilled with a standard rotary drilling rig, running 8¼ diameter hollow stem augers. The boreholes will be advanced to depths of approximately 17 feet bgs. The wells will be constructed with 2" diameter well casing, with 10' of factory slotted 0.010 or 0.020 inch well screen. The screen interval of 5 feet to 15 feet bgs has been selected based on existing logs, and selected to cross the upper-most permeable zone only and to straddle the water table. The screen interval has been selected to cross first groundwater with sufficient length in accord for possible water level changes and to detect any LNAPL that may be present.

Soil samples will be collected at approximately 5' intervals, or at closer intervals, during drilling with a split spoon sampler advanced ahead of the auger bit. Samples will be utilized to characterize the sediments beneath the site and for possible chemical analyses. Selected samples will be analyzed for the following analyses:

- TPH-multi-range (g/d/mo) by EPA Method 8015C
- Grain size distribution (select soil samples only)

The well casings will be installed through the augers. The casing will be flush threaded PVC and fitted with a bottom sump. A annular sand pack will be installed through the augers, which will be lifted from the borehole in 1-foot lifts. A bentonite seal will be placed above the sand and the remainder of the boring will be sealed with cement grout. The drilling and well installation work will be performed under Alameda County Public Works Agency permit. DWR well registration forms (DWR Form 188) will be completed for each of the wells upon installation.

The wells will be developed no sooner than 3 days after setting the well seals by surging, bailing, and purging to stabilize the sand pack and remove accumulated fines from the casing and sand pack.

Each well will be surveyed relative to each other and mean sea level by a California licensed land surveyor for the Geotracker database and hydrologic calculations.

Quarterly Monitoring Activities
Monitoring and sampling of the resulting network of wells will occur on a quarterly basis for a period of one year under this work plan, with the first episode to occur within approximately one week of well development.

During each monitoring event, water levels will be measured in each well. Wells will be purged of at least 3 well volumes of water prior to sample collection. During purging the following water quality measurements will be collected: temperature, pH, specific conductivity, dissolved oxygen (DO) and oxidation-reduction potential (ORP).

Groundwater samples will be collected with new, unused disposable bailers into appropriate laboratory-supplied containers. During the first monitoring event, the groundwater samples will be analyzed for the following:

- TPH-multi-range (g/d/mo) by EPA Method 8015C - All
- BTEX by EPA Method 8015C/8021B (1st event only) - All
- Nine fuel oxygenates by EPA Method 8260B (1st event only) - All
- SVOCs and PNA (2 select wells / 1st event only) – 2 selected
- Chemical and biological oxygen demand (1st event only) - All
- Nitate and Nitrite (1st event only) - All

Recommendations for the subsequent groundwater monitoring analytical suite will be presented in the forthcoming report, based on the findings of the initial groundwater monitoring samples.

Waste Storage
Drill cuttings and other investigation-derived waste (IDW) will be stored onsite in sealed 55-gallon drums, pending the results of sample analyses. Equipment rinse water and well purge water will be stored in 55-gallon drums. Upon receipt of necessary analytical results, the waste will be profiled for disposal and transported from the site under appropriate manifest to approved disposal or recycling facility(s).

REPORTING

Following completion of field work, AEI will prepare a report detailing the methods and findings of the installation and sampling of the wells. Following receipt of all analytical and well survey data, a technical report will be prepared. The final report will include a Site Conceptual Model, figures, data tables, logs of borings and well construction details, and interpretation of the contaminant distributions. Quarterly monitoring reports will be submitted within approximately one month of monitoring and sample collection activities. The entire project will be overseen by and all reports will be reviewed and stamped by a State of California Registered Geologist or Professional Civil Engineer. Following completion of the report, relevant site data will be uploaded to the State of California's Geotracker database.

SITE SAFETY

Prior to commencement of field activities, a site safety meeting will be held at a designated command post near the working area. Emergency procedures will be outlined at this meeting, including an explanation of the hazards of the known or suspected chemicals of interest. All site personnel will be in Level D personal protection equipment, which is the anticipated maximum amount of protection needed. A working area will be established with barricades and warning tape to delineate the zone where hard hats and steel-toed shoes must be worn, and where unauthorized personnel will not be allowed. A site safety plan conforming to Part 1910.120 (i) (2) of 29 CFR will be on site at all times during the project.

ESTIMATED SCHEDULE

The permitting process will begin promptly following the agreement on and approval of a scope of work by the ACHCSA. Laboratory analytical results will be obtained within approximately one week of sample collection. A final report will be prepared and submitted to the client and the ACHCSA within approximately 1 month of sample collection.

AEI requests your approval to proceed with this project. Please contact me at (925) 283-6000 if you have any questions or need any additional information.

Sincerely,
AEI Consultants

Adrian M. Angel
Project Geologist

Peter McIntyre, PG, REA
Senior Project Manager

REGISTERED GEOLOGIST
PETER J. MCINTYRE
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No 7102
STATE OF CALIFORNIA

FIGURES
Figure 1 – Site Map
Figure 2 – Site Plan, with proposed well locations
Figure 3 – Previous Groundwater Sample Data (March 14, 2006)

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Table 2 – Groundwater Sample Analytical Data (March 14, 2006)
Table 3 – 2004 Tank Removal Soil Sample Data
Table 4 – 2004 Tank Removal Groundwater Sample Data

APPENDICES
Appendix A – Groundwater Gradient Map (April 24, 2001),
Appendix B – Groundwater Levels, Analytical Data (April 24, 2001)

Distribution :

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FIGURES

USGS DUBLIN, CALIFORNIA
QUADRANGLE TOPOGRAPHIC MAP
Created 1979, Revised 1980

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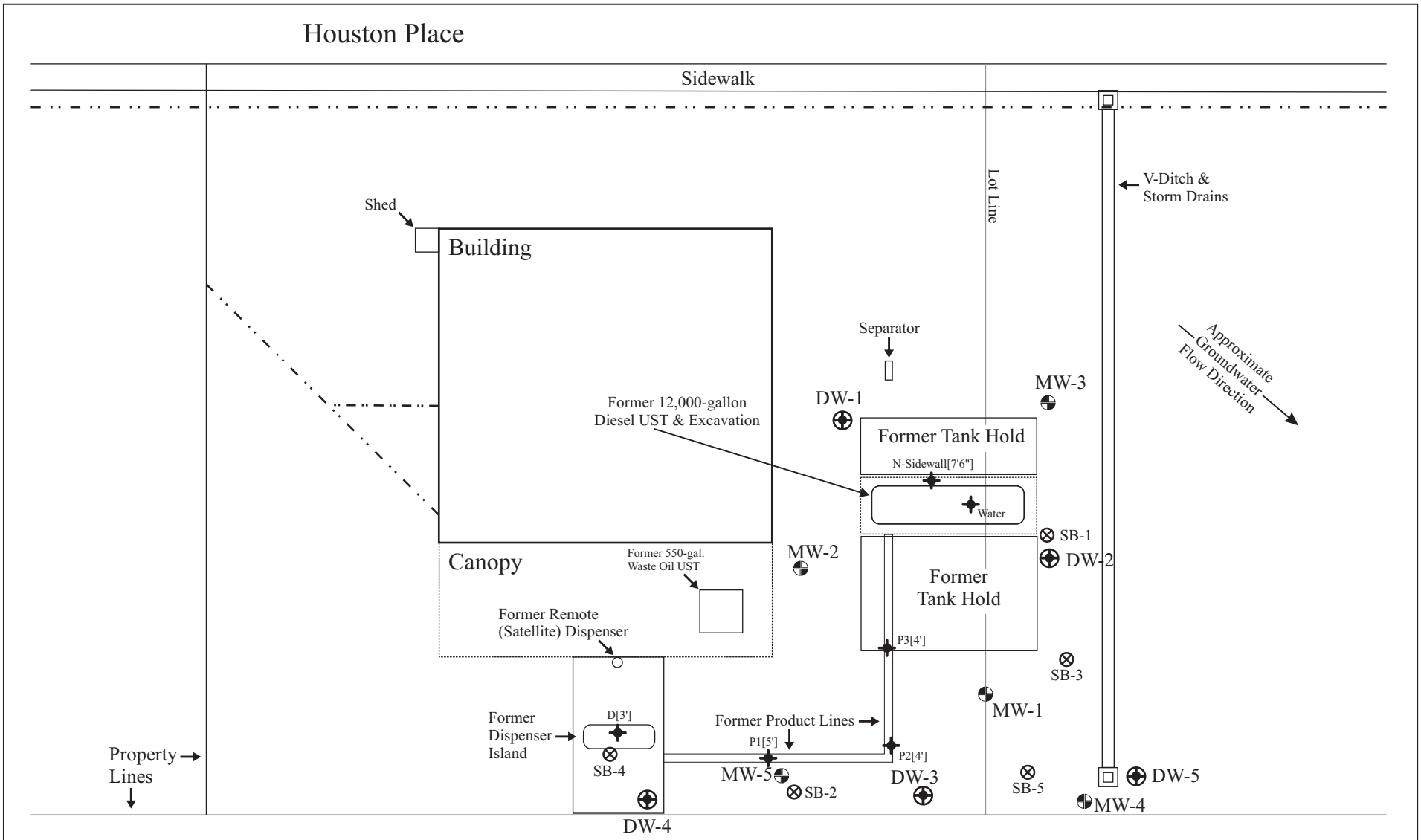
SITE LOCATION MAP

6310 HOUSTON PLACE
DUBLIN, CA 94568

FIGURE 1
PROJECT No. 261639



LEGEND

- Proposed Monitoring Well Location
- Former Monitoring Well Location
- Tank Removal Sample Locations (GGTR, 2004)
- Boring Location (3/14/06)
- Approximate Location of Subsurface Utilities

MW-6

0' 10' 20' 30'

Scale: 1 in = 30 ft
Revised Sept. 2006

N

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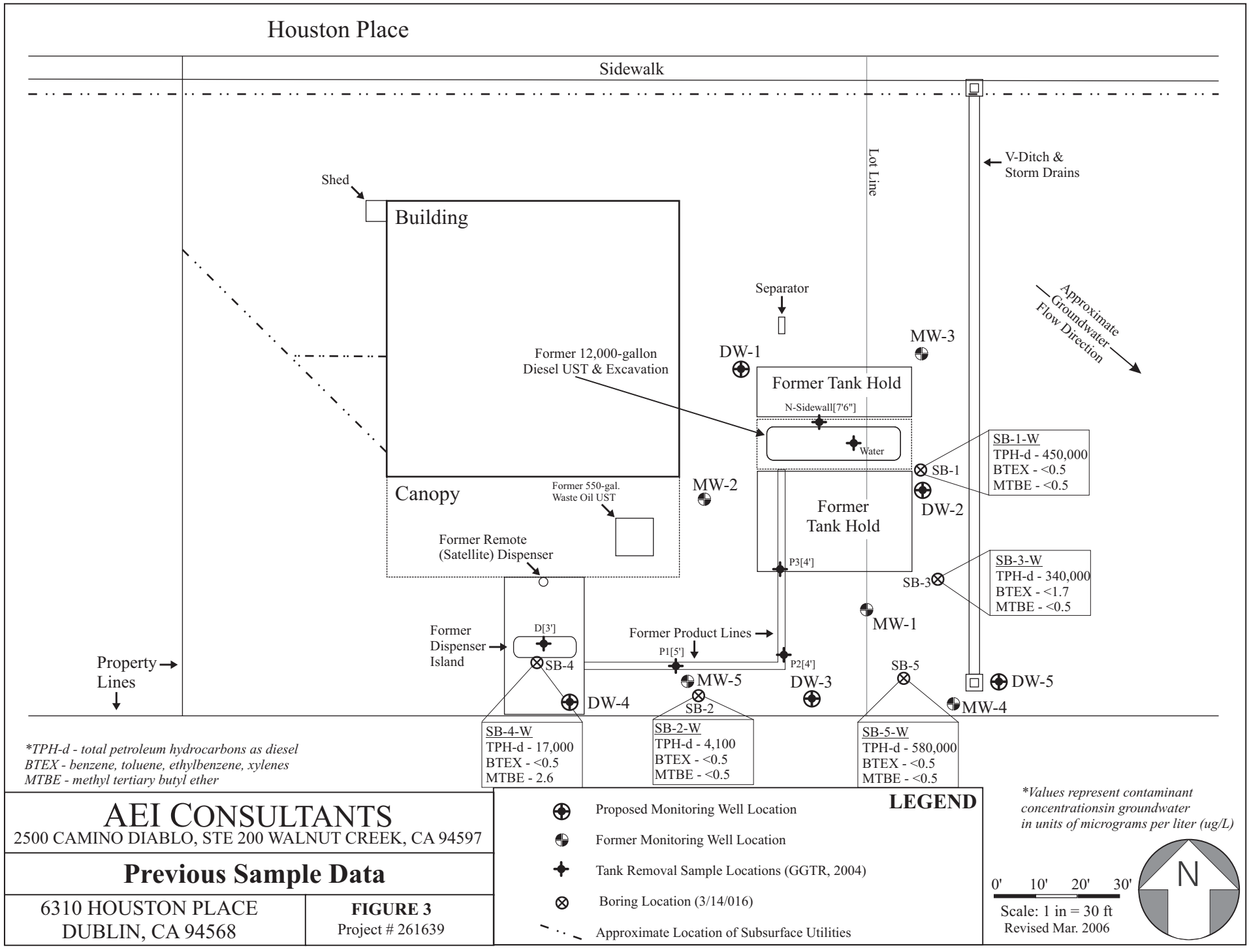
2500 CAMINO DIABLO, STE 200 WALNUT CREEK, CA 94597

Site Plan

6310 HOUSTON PLACE
DUBLIN, CA 94568

FIGURE 2
Project # 261639



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Previous Sample Data

6310 HOUSTON PLACE
DUBLIN, CA 94568

FIGURE 3
Project # 261639

TABLES

Table 1
Soil Sample Analytical Data
Diesel, BTEX, & MTBE

Sample ID	Date	TPH-d	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		EPA Method 8021B/8015C					*EPA Method 8260B*
SB-1-8'	3/14/06	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
SB-2-8'	3/14/06	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
SB-3-8'	3/14/06	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
SB-4-8'	3/14/06	53	<0.005	<0.005	<0.005	<0.005	<0.005
SB-5-8'	3/14/06	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
LDL		1.0	0.005	0.005	0.005	0.005	0.005

TPH-d - total petroleum hydrocarbons as diesel
MTBE - methyl tertiary butyl ether
LDL = laboratory detection limit (with no dilution) - see laboratory reports for sample specific dilution factors
SB - Soil boring

Table 2
Groundwater Sample Analytical Data
Diesel, BTEX, & MTBE

Sample ID	Date	TPH-d µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MTBE µg/L
		EPA Method 8021B/8015C					*EPA Method 8260B*
SB-1-W	3/14/06	450,000	<0.5	<0.5	<0.5	<0.5	<0.5
SB-2-W	3/14/06	4,100	<0.5	<0.5	<0.5	<0.5	<0.5
SB-3-W	3/14/06	340,000	<0.5	<0.5	<0.5	<0.5	<0.5
SB-4-W	3/14/06	17,000	<0.5	<0.5	<0.5	<0.5	2.6
SB-5-W	3/14/06	580,000	<0.5	<0.5	<0.5	<0.5	<0.5
LDL		1.0	0.5	0.5	0.5	0.5	0.5

TPH-d - total petroleum hydrocarbons as diesel
MTBE - methyl tertiary butyl ether
LDL = laboratory detection limit (with no dilution) - see laboratory reports for sample specific dilution factors
SB - Soil boring

Table 3
Tank Removal Data
Soil Sample Analytical Results

Sample ID	Sample Date	Sample Location	TPH-d mg/kg *EPA Method 8015M*	MtBE µg/kg	Benzene µg/kg	Toluene µg/kg *EPA Methods 5030 / 8020F*	Ethylbenzene µg/kg	Xylenes µg/kg
8559-SP1	10/27/2004	Stockpile	6	<5	<5	<5	<5	<10
8559-SP2	10/27/2004	Stockpile	<1	<5	<5	<5	<5	<10
8559-SP3	10/27/2004	Stockpile	197	<5	<5	<5	<5	<10
8559-P1[5']	10/27/2004	Product Piping	<1	<5	<5	<5	<5	<10
8559-P2[4']	10/27/2004	Product Piping	<1	<5	<5	<5	<5	<10
8559-P3[4']	10/27/2004	Product Piping	<1	<5	<5	<5	<5	<10
8559-N-Sidewall[7'6"]	10/27/2004	UST Excavation	1	<5	<5	<5	<5	<10
		RL	1	5	5	5	5	10

TPH-d = Total Petroleum Hydrocarbons as diesel
MtBE = Methyl tertiary-Butyl Ether
RL = Laboratory reporting limit
mg/kg = milligrams per kilogram (equivalent to parts per million)
µg/kg = micrograms per kilogram (equivalent to parts per billion)
UST = Underground Storage Tank

UST excavation and sampling routine performed by Golden Gate Tank Removal, Inc., October 2004.

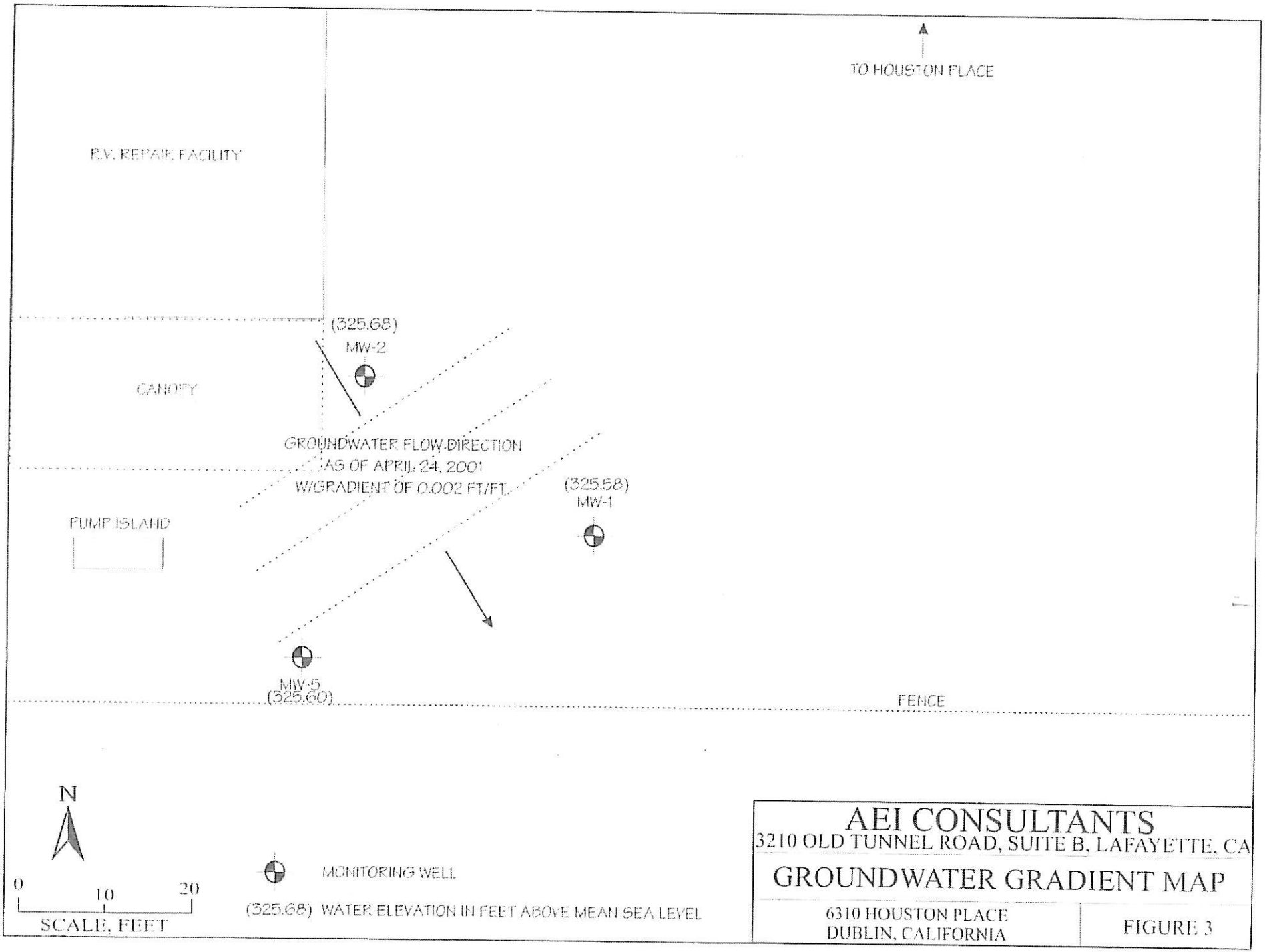
Table 4
Tank Removal Data
Groundwater Sample Analytical Results

Sample ID	Sample Date	Sample Location	TPH-d mg/L *EPA Method 8015M*	MtBE µg/L	Benzene µg/L	Toluene µg/L *EPA Methods 5030 / 8020F*	Ethylbenzene µg/L	Xylenes µg/L
8559-D[3']	10/27/2004	Dispenser	23.8	1.1	<0.5	<0.5	<0.5	1.8
8559-Water	10/27/2004	UST Excavation	0.3	3.8	<0.5	<0.5	<0.5	<1.0
		RL	0.05	0.5	0.5	0.5	0.5	1.0

TPH-d = Total Petroleum Hydrocarbons as diesel
MtBE = Methyl tertiary-Butyl Ether
RL = Laboratory reporting limit
mg/L = milligrams per liter (equivalent to parts per million)
µg/L = micrograms per kilogram (equivalent to parts per billion)
UST = Underground Storage Tank

UST excavation and sampling routine performed by Golden Gate Tank Removal, Inc., October 2004.

APPENDIX A



AEI CONSULTANTS

3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

GROUNDWATER GRADIENT MAP

6310 HOUSTON PLACE
DUBLIN, CALIFORNIA

FIGURE 3

APPENDIX B

Table 1
Groundwater Levels

Well ID	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	04/24/01	332.47	6.89	325.58
MW-2	04/24/01	332.58	6.9	325.68
MW-5	04/24/01	332.49	6.89	325.60

Table 2
Groundwater Sample Analytical Data

Well ID	Date	Consultant/ Lab	TPHd (ug/l)	TOG (mg/l)
MW - 1	04/24/01	AEI/MAI	2,400	ND
MW-2	04/24/01	AEI/MAI	340	ND
MW-5	04/24/01	AEI/MAI	390	ND
MRL			50	5

TPHd = Total Petroleum Hydrocarbons as diesel
AEI = All Environmental Inc.
MAI = McCampbell Analytical Inc.
ug/l = Micrograms per liter
MRL= Maximum Reporting Limit
ND = Non Detect