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December 27, 2002  
Project H9042:C/Q

Mr. Jerry Harbert  
46765 Mountain Cove Drive  
Indian Wells, California 92210

**Subject: Proposed Site-Specific Cleanup Goals  
Groundwater Monitoring Report - Third Quarter 2002  
Harbert Transportation  
19984 Meekland Avenue, Hayward, California**

Dear Mr. Harbert:

This report presents proposed site-specific cleanup goals and documents groundwater monitoring activities conducted by Weber, Hayes and Associates at the former Harbert Transportation facility, 19984 Meekland Avenue, Hayward, California, during the third quarter 2002. This report has been prepared pursuant to a directive from the Alameda County Health Care Services Agency/Environmental Health Services (Environmental Health) regarding a release of petroleum hydrocarbons from underground storage tanks at the site.

#### **EXECUTIVE SUMMARY**

This quarter we completed calculations of site-specific cleanup goals for those petroleum hydrocarbons (PHCs) which had not yet had cleanup levels set (ethylbenzene, xylenes, and TPH-g, see Weber, Hayes and Associates, June 18, 2001, Environmental Health/Regional Board Memo, August 8, 2000). We then compared the calculated cleanup goals with residual concentrations of PHCs in soil and groundwater. **This comparison indicates that concentrations of PHCs in soil and groundwater are below the calculated cleanup goals.**

If concentrations of PHCs in groundwater remain below cleanup goals for one more quarter, we recommend that the fuel leak investigation and cleanup at the site be closed. This report also presents the results of the third quarter of post-cleanup groundwater monitoring which indicates that PHC concentrations in groundwater are below the proposed cleanup goals.

The groundwater monitoring event for the third quarter 2002 took place on August 27, 2002. Groundwater elevations at the site fell an average of approximately 0.90 feet since the previous quarter (June 2002). The calculated groundwater flow direction on August 27, 2002 was to the west, which appears to be generally consistent with historical data. Groundwater analytical results from the third quarter 2002 indicate that dissolved PHCs remain in groundwater, but at concentrations that are below the proposed site-specific cleanup goals.

**Methyl - tert - Butyl Ether (MTBE) was not detected in the groundwater samples collected this quarter. MTBE has not been detected in soil or groundwater at the site.** Groundwater samples in the third quarter 2000 were analyzed for the fuel oxygenates Di-isopropyl Ether, tertiary Butyl

Alcohol, Ethyl tertiary Butyl Ether, and tertiary Amyl Methyl Ether. No fuel oxygenates were detected in the groundwater samples.

The Alameda County Health Care Services Agency/Environmental Health agreed with our first quarter 2002 recommendation to decrease the sampling frequency of selected site monitoring wells. The revised sampling schedule will comprise sampling monitoring wells MW-3, 5, 6, 9, and 10 quarterly, monitoring well MW-7 semi-annually (second and fourth quarters only), and all of the wells annually in the fourth quarter.

At this time we recommend:

- Continuing quarterly groundwater monitoring of dissolved PHC concentrations at the site for one more quarter (three quarters of post cleanup groundwater monitoring have been completed since excavation of PHC-impacted soil in January 2002, and dissolved PHC concentrations have been below cleanup goals).
- Closing the fuel leak investigation and cleanup if PHC concentrations in groundwater remain below cleanup goals next quarter.

## INTRODUCTION

This report presents proposed cleanup goals and documents groundwater monitoring activities at the former Harbert Transportation facility, 19984 Meekland Avenue, Hayward, California (the site) during the third quarter 2002. This report has been prepared pursuant to a directive from the Alameda County Health Care Services Agency/Environmental Health Services (Environmental Health, August 8, 2000) regarding a release of petroleum hydrocarbons (PHCs) from underground storage tanks (USTs) at the site.

This quarter we completed calculations of cleanup goals for those PHCs which had not yet had cleanup levels set (ethylbenzene, xylenes, and TPH-g, see Weber, Hayes and Associates, June 18, 2001, Environmental Health/Regional Board Memo, August 8, 2000). We then compared the calculated cleanup goals with residual concentrations of PHCs in soil and groundwater.

**Residual concentrations of PHCs in soil and groundwater at the site are BELOW the proposed cleanup goals.**

Groundwater samples are collected and analyzed for PHCs according to the following schedule (Alameda County Health Care Services Agency Case Officer communication, July 29, 2002).

Quarterly:	Wells MW- 3, 5, 6, 9, and 10.
Semi-Annually	Well MW- 7 (second and fourth quarter).
Annually:	All Wells (MW-3 - 12, fourth quarter).

Groundwater monitoring activities conducted during this quarter included:

1. Measuring groundwater levels and checking for the presence of free product in all of the monitoring wells associated with the site
2. Measuring the physical parameters of pH, temperature, electrical conductivity, and dissolved oxygen concentration in each well
3. Collecting groundwater samples from each of the appropriate monitoring wells
4. Submitting the groundwater samples to a state-certified analytical laboratory for analysis of dissolved PHC concentrations following proper chain-of-custody procedures
5. Determining groundwater elevations, flow direction, and gradient in the vicinity of the site
6. Mapping the extent of the dissolved PHC plume in groundwater beneath the site
7. Preparing this technical report

### Site Description And Background

The site is located at the corner of Meekland Avenue and Blossom Way in Alameda County California, at an elevation of approximately 55 feet above sea level (Figure 1). The site is relatively flat and is currently vacant.

The site was operated as a motor vehicle fueling station since the 1940's. Harbert Transportation used the site as a vehicle and fueling yard before selling the site to Durham Transportation in 1986.

In August 1989, four underground storage tanks (USTs) were removed from the site and properly disposed of. Soil and groundwater investigations at the site, conducted by Applied Geosystems, CTTS, and AGI Technologies, indicated that PHCs were present in soil and groundwater at the site. A list of reports documenting the soil and groundwater investigations is included in the Reference section. Ten groundwater monitoring wells currently exist at the site. Groundwater samples were not collected from these wells between September 1996 and September 2000. Documentation indicates that excavated soil from the UST removals was returned to the (reportedly plastic-lined) excavations (CTTS, November 1, 1992).

Documentation also indicates that two USTs were removed from the site in the early 1950's (CTTS, November 27, 1990). These USTs were located near the dispensers for the USTs removed in 1989.

On February 14, 2001, we collected soil samples from the site to determine the extent of PHCs remaining in the unsaturated zone in accordance with our September 7, 2000 Work Plan. Analysis of the data collected indicated the predominant soil types were sandy clay and clay (see Figures 2 and 3), and confirmed that significant concentrations of PHCs remained in soils beneath the former dispensers and in the 1989 UST excavation *which was backfilled with the excavated material*. We recommended excavation of these residual PHCs as an Interim Remedial Action (Weber, Hayes and Associates, June 18, 2001). Environmental Health concurred with this recommendation in a letter dated June 26, 2001.

On January 7 - 10, 2002 we conducted an interim remedial action excavation using six foot diameter augers to remove contaminated soils from the subsurface. Approximately 594 yds<sup>3</sup> of PHC-impacted soil was removed from the subsurface and transported to an appropriate landfill facility for disposal. A pump was installed in one of the large diameter boreholes and 3,000-gallons of PHC impacted water was removed from the subsurface and disposed of properly. Oxygen Release Compound® (ORC) was added to the saturated zone in each borehole to promote microbial growth and enhance the ability of aerobic microbes to degrade contaminants. Each borehole was backfilled with control density fill and clean fill soil to ground surface (Weber, Hayes and Associates, *Large Diameter Excavation and 4th Quarter 2001 Quarterly Groundwater Monitoring*, February 8, 2002 ).

In the first quarter 2002, we recommend that the frequency of sampling in monitoring well MW-7 be reduced to semi-annually (second and fourth quarters) and that the frequency of sampling in monitoring wells MW-4, 8, 11 and 12 be reduced to annually (fourth quarter only). Alameda County Environmental Health concurred with our recommendations in a telephone conversation on July 29, 2002.

## SUMMARY OF QUARTERLY ACTIVITIES

### Proposed Cleanup Goals

On August 8, 2000, we met with Environmental Health and San Francisco Regional Water Quality Control Board (Regional Board) staff to discuss the site status and future work. Environmental Health and Regional Board staff agreed with our recommendations for soil sampling and groundwater monitoring, and suggested developing soil and groundwater cleanup goals for all PHCs detected at the site. Environmental Health and Regional Board staff approved the following cleanup goals for the site:

Approved Soil Cleanup Goals (mg/kg, ppm)

Chemical	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes
Surface Soil	--	0.118	150	--	--
Sub-Surface Soil	1,000	0.118	150	--	--

This quarter we completed calculations of cleanup goals for those PHCs which had not yet had cleanup levels set (ethylbenzene, xylenes, and TPH-g, see Weber, Hayes and Associates, June 18, 2001, Environmental Health/Regional Board Memo, August 8, 2000). Cleanup Goals were not developed for Methyl tert Butyl Ether (MTBE) because it has not been detected in soil or groundwater at the site. We then compared the calculated cleanup goals with residual concentrations of PHCs in soil and groundwater.

We calculated cleanup goals for PHCs using Groundwater Services, Inc.'s (GSI's) *RBCA Tool Kit for Chemical Releases*, Version 1.3 (RBCA Toolkit). This software is designed to complete all calculations required for Tiers 1 and 2 of the Risk-Based Corrective Action (RBCA) planning process as defined in the American Society for Testing and Materials (ASTM) PS-104 *Standard Provisional Guide for Risk-Based Corrective Action*. We used the RBCA Toolkit to calculate Site-Specific Target Levels (SSTLs) - the maximum concentrations of a chemical contaminant that may be left at a site that will not exceed the acceptable risk to human health (acceptable risk is defined as one excess cancer per million population,  $1 \times 10^{-6}$ ).

We used the following characteristics of the site in our calculations:

- Predominant soil type Sandy Clay, Clay
- Contaminated soil area (see Figure 4) 1,600 sq. ft.
- Length of contaminated soil parallel to wind (maximum assumed) 40 ft.
- Length of contaminated soil parallel to groundwater (maximum assumed) 40 ft.
- Soil porosity 0.38
- Depth to groundwater 23 ft.
- On-site/local shallow groundwater not used for drinking water (drinking water supplied by utilities from off-site sources)
- Site use Residential
- Distance to closest off-site residence 75 ft.
- Distance to closest off-site groundwater receptor (assumed) 250 ft.

The Site-Specific Target Levels (SSTLs) we calculated for PHCs are summarized below. The RBCA Toolkit output tables for the calculations are presented as Appendix A.

Proposed Site Specific Cleanup Goals  
 (soil in mg/kg, ppm; groundwater in  $\mu\text{g/L}$ , parts per billion)

Chemical	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes
Surface Soil	38	0.118	150	87	480
Sub-Surface Soil	1,000	0.118	150	87	480
Groundwater	7,000	210	26,000	27,000	200,000

### **Comparison of Residual PHC Concentrations in Soil with Cleanup Goals**

Residual concentrations of PHCs in soil are summarized on Figure 4 and in Table 1. Concentrations of PHCs in groundwater are summarized in Table 2.

*The residual concentrations of PHCs in soil and groundwater at the site are below the proposed cleanup goals and fall within the limits of acceptable risk to human health and the environment.*

If one more quarter of post-cleanup groundwater monitoring (this report documents the third quarter of post-cleanup monitoring, see below) indicates that PHC concentrations in groundwater remain below cleanup goals, we recommend that the fuel leak investigation and cleanup at the site be closed.

### **Groundwater Monitoring**

The groundwater monitoring event for the third quarter 2002 took place on August 27, 2002. Field methods followed Weber, Hayes and Associates' standard field methodology for groundwater monitoring, which is described in Appendix B. Groundwater samples were collected from the appropriate monitoring wells at the site in accordance with directives from Environmental Health, and analyzed for Total Petroleum Hydrocarbons as gasoline (TPH-g) by EPA Method 8015M, and benzene, toluene, ethylbenzene, and xylenes (BTEX), and Methyl tert Butyl Ether (MTBE) by EPA Method 8020. Samples with elevated detection limits or detections of MTBE were analyzed by EPA Method 8260 to confirm the presence of MTBE and provide the proper detection limit. Field data forms are also presented in Appendix B.

#### Free Product

Free product was not observed in any of the monitoring wells at the site.

#### Groundwater Elevation and Flow Direction

Groundwater elevations were calculated by subtracting the measured depth-to-groundwater from the top-of-casing elevations, which were surveyed by a state-licensed Land Surveyor. Field measurements and the calculated groundwater elevations for the site are summarized in Table 2. Groundwater elevations at the site fell an average of approximately 0.90 feet since the previous quarter (June 2002). Calculated groundwater elevations from the gauging data collected on August 27, 2002 are shown on Figure 5. Data from this quarter indicate that groundwater flow is to the west (see Figure 5). The calculated groundwater gradient on August 27, 2002 was to the west at approximately 0.002 feet per foot. Previous reports indicate that the groundwater flow direction in the vicinity of the site has generally been in a westerly direction. A table and figures summarizing previous depth to groundwater data is presented as Appendix C.

Groundwater Analytical Results

Groundwater samples were collected from all of the monitoring wells associated with the site this quarter, in accordance with directives from Environmental Health. The groundwater analytical results for this quarter are summarized below.

Summary of Groundwater Sample Analytical Results, August 27, 2002 (µg/L, ppb)

Well ID	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
MW-3	350	0.56	1.1	14	3.4	ND
MW-5	1,900	170	14	210	93	ND*
MW-6	1,900	< 2.5	7.2	210	55	ND*
MW-9	310	27	2.5	20	20	ND*
MW-10	1,800	< 2.5	15	3.9	5	ND*
Cleanup Goal	7,000	210	26,000	27,000	200,000	NA

\* = Confirmed by GC/MS method 8260

The concentrations of PHCs in all of the monitoring wells at the site are below the respective site-specific cleanup goals calculated for the site.

**MTBE was not detected in any of the wells associated with the site.**

Analytical results for the groundwater samples collected by Weber, Hayes and Associates are summarized in Table 2. PHC concentrations detected in groundwater during the current monitoring event are shown on Figure 6. The extent of dissolved PHCs greater than 1,000 ppb TPH-g and 10 ppb benzene in groundwater are shown on Figure 7. The trend in TPH-g and benzene concentrations in wells MW-5 and 9, along with groundwater elevations over time, are shown on Figures 9 and 10.

The Certified Analytical Report for the groundwater samples is presented as Appendix D. All laboratory quality control and quality assurance data were within acceptable limits. A table and figures summarizing analytical results of groundwater samples collected by previous consultants is presented as Appendix E.

### **Comparison of Residual PHC Concentrations in Soil with Cleanup Goals**

Residual concentrations of PHCs in groundwater are summarized above and on Table 2.

*The residual concentrations of PHCs in groundwater at the site are below the proposed cleanup goals and fall within the limits of acceptable risk to human health and the environment.*

This report documents the third quarter of post-cleanup monitoring, with concentrations below proposed cleanup goals. If one more quarter of post-cleanup groundwater monitoring indicates that PHC concentrations in groundwater remain below cleanup goals, we recommend that the fuel leak investigation and cleanup at the site be closed.

### **Dissolved Oxygen Measurements**

Current and historic dissolved oxygen measurements collected at the site indicate generally lower levels of dissolved oxygen in PHC impacted wells compared to levels in non-impacted, upgradient wells. The decrease in dissolved oxygen in the impacted wells is shown by the dissolved oxygen concentration contour map on Figure 8. We believe this, combined with the observed decrease in dissolved PHC concentrations over time (see Figures 9 and 10), indicates that natural attenuation of PHCs via biologic activity (bioremediation) is occurring in groundwater, with microbes using dissolved PHCs as a food source during aerobic respiration (see Bushek and O'Reilly, 1995, Table 1, Figures 5, 6, and 7, and Appendix E).

### **SUMMARY**

- We calculated cleanup goals for PHCs this quarter. **The residual concentrations of PHCs in soil and groundwater at the site are below the proposed cleanup goals and fall within the limits of acceptable risk to human health and the environment.**
- Concentrations of dissolved PHCs in groundwater were generally similar to those reported last quarter. Dissolved PHC concentrations fell dramatically in MW-9 this quarter. Three quarters of post-cleanup groundwater monitoring indicate that residual PHC concentrations in groundwater are below cleanup goals.
- Free product has never been observed in any of the monitoring wells at the site.
- Groundwater elevations at the site fell an average of approximately 0.90 feet since the previous quarter (June 2002).
- The groundwater flow direction on August 27, 2002 was to the west at a gradient of approximately 0.002 feet per foot. This direction is in general agreement with data collected by us in the past three quarters and previous data collected by others at the site.



- **MTBE was not detected in any of the groundwater samples collected this quarter. MTBE has not been detected in soil or groundwater samples collected at the site.**
- Current and historic measurements of dissolved oxygen collected at the site indicate aerobic bioremediation is occurring in the PHC-impacted wells.

## SITE CONCEPTUAL MODEL

The Site Conceptual Model (SCM) provides a compilation of our understanding of the existing site conditions:

- Soils encountered at the site generally consisted of fat clays and sandy clays. The predominance of these fine grained materials have likely retarded the movement of PHCs in the subsurface at the site.
- A review and comparison of historical groundwater analytical data with the current and recent data suggests there has been a reduction in PHC concentrations at the site of at least an order of magnitude since September 1996 (see Table 2, Figure 6, and Appendix E).
- Residual PHCs are present in soil and groundwater at the site at low levels.
- PHC concentrations in monitoring wells MW-5 and 6 were generally the same this quarter compared to last quarter. PHC concentrations in well MW-9 decreased significantly this quarter. **Overall, PHC concentrations in wells MW-5, 6, and 9 show a general downward trend - see Table 2 and Figures 9 and 10.**
- We calculated site-specific cleanup goals based on site-specific characteristics that are protective of human health and the environment. **Residual concentrations of PHCs in soil and groundwater at the site are BELOW the site-specific cleanup goals.** Natural Attenuation should complete the cleanup of residual PHC concentrations in groundwater at the site to Drinking Water Action Levels/Maximum Contaminant Levels in a reasonable amount of time. Residual concentrations of PHCs in soil do not pose a threat to groundwater.
- **We believe that natural attenuation/bioremediation has and will continue to remove PHCs from the site, and that natural attenuation will complete the cleanup of soil and groundwater at the site.**
- **MTBE has not been detected in any of the soil or groundwater samples collected at the site.**
- 1,2-Dichloroethane (1,2-DCA), tetrachloroethane (PCE), and trichloroethane (TCE) were tested for as part of the original soil and groundwater investigation (by others). Low levels

of 1, 2-DCA were detected in some groundwater samples, most likely from an off-site source. Testing for these contaminants was not requested by Environmental Health as part of this investigation. We included representative concentrations of these compounds in the Risk Assessment and determined that the historical concentrations detected at the site would NOT pose a threat to human health or the environment (see Appendix A).

## RECOMMENDATIONS

At this time we recommend:

- Continuing quarterly groundwater monitoring of dissolved PHC concentrations at the site for one more quarter (three quarters of post cleanup groundwater monitoring have been completed since excavation of PHC-impacted soil in January 2002, and dissolved PHC concentrations have been below cleanup goals).
- Closing the fuel leak investigation and cleanup if PHC concentrations in groundwater remain below cleanup goals next quarter.

## SCHEDULE OF ACTIVITIES FOR THE FOLLOWING QUARTER

The following activities are scheduled for the next quarter:

- Quarterly groundwater monitoring according to the schedule referenced above. Groundwater monitoring will include measuring the depth-to-groundwater, dissolved oxygen concentration, and physical parameters, and collecting samples from the appropriate monitoring wells and analyzing them for TPH-g, BTEX and MTBE by EPA Methods 8015M and 8020. All detections of MTBE, or samples with no detections but elevated detection limits due to sample dilution will be confirmed by EPA Method 8260.

## LIMITATIONS

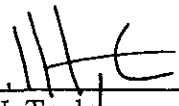
Our service consists of professional opinions and recommendations made in accordance with generally accepted geologic and engineering principles and practices. This warranty is in lieu of all others, either expressed or implied. The analysis and proposals in this report are based on sampling and testing which are necessarily limited. Additional data from future work may lead to modification of the opinions expressed herein.


Groundwater Monitoring Report - Third Quarter 2002  
19984 Meekland Avenue, Hayward, California  
December 27, 2002

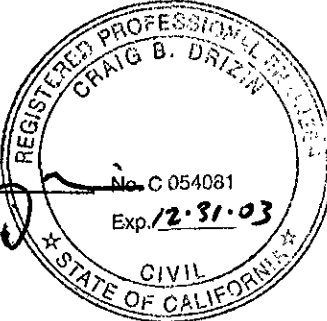
Thank you for the opportunity to aid in the assessment and cleanup of this site. If you have any questions or comments regarding this project please call us at (831) 722 - 3580.

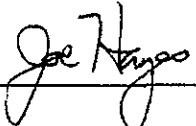
Sincerely yours,

Weber, Hayes And Associates

By:   
Chad N. Taylor  
Staff Geologist

And:   
Craig Drizin, P.E.  
Senior Engineer



And:   
Joseph Hayes  
Certified Hydrogeologist #373

c: Mr. Amir Gholami, Alameda County Environmental Health  
Mr. Jeff Lawson  
Ms. Laurie Berger  
Mr. Gregg Petersen, Durham Transportation  
Mr. Chuck Headlee, San Francisco Bay Regional Water Quality Control Board

Attachments:

Table 1	Summary of Soil Sample Analytical Results
Table 2	Summary of Groundwater Elevation and PHC Analytical Data
Figure 1	Location Map
Figure 2	Site Plan with Keys to Geologic Cross-Sections
Figure 3	Geologic Cross-Sections A - A' and B - B'
Figure 4	Large Diameter Auger Source Removal Footprint Map
Figure 5	Site Plan with Groundwater Elevations
Figure 6	Site Plan with PHC Concentrations in Groundwater
Figure 7	Site Plan with Extent of TPH-g and Benzene in Groundwater
Figure 8	Site Plan with Dissolved Oxygen Contours
Figure 9	TPH-g and Elevation MW-5 and MW-9
Figure 10	Benzene and Elevation MW-5 and MW-9
Appendix A	RBCA Toolkit Output Tables - Calculation of Cleanup Goals
Appendix B	Field Methodology for Groundwater Monitoring and Field Data Forms
Appendix C	Summary of Historical Depth to Groundwater Measurements, Groundwater Elevations, and Groundwater Flow Direction - AGI Technologies, Inc.
Appendix D	Certified Analytical Report - Groundwater Samples
Appendix E	Summary of Historical Groundwater Analytical Results - AGI Technologies, Inc.

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**Table 1**  
**Current and Previous Investigations Soil Sample Analytical Results**  
**Former Harbert Transportation Facility, 19984 Meekland Avenue, Hayward, CA**

Investigation & Date	Sample ID	Sample Depth (feet, bgs)	TPH-g (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
Proposed Cleanup Levels	--	--	38	0.118	150	87	480	NA
Interim Remedial Action Large Diameter Auger Drilling & Source Removal (January 7, 8, 9, 10, 2002)	Soil Reuse #1a,b,c,d	4-point composite (0-10')	ND	ND	ND	ND	ND	ND
	Soil Reuse #2a,b,c,d	4-point composite (0-20')	ND	ND	ND	ND	ND	ND
	Soil Reuse #3a,b,c,d	4-point composite (0-20')	ND	ND	ND	ND	ND	ND
	LD#1 SW-E	35'	ND	ND	ND	0.005	0.011	ND
	LD#2 SW-W	35'	ND	ND	ND	ND	ND	ND
	LD#3 BC-N	40'	ND	ND	ND	ND	ND	ND
	LD#4 SW-N	40'	1.2	ND	0.012	0.005	0.006	ND
	LD#5 SW-N	40'	ND	ND	ND	ND	ND	ND
	LD#8 SW-S	40'	ND	ND	ND	ND	ND	ND
	LD#9 SW-E	40'	ND	ND	ND	ND	ND	ND
	LD#10 SW-E	40'	ND	ND	ND	ND	ND	ND
	LD#11 SW-W	40'	ND	ND	0.014	0.013	0.062	ND
	LD#12 SW-E	18'	ND	ND	ND	ND	ND	ND
	LD#13 SW-E	18'	ND	ND	ND	ND	ND	ND
	LD#13 SW-B	40'	ND	ND	0.006	ND	0.022	ND
	LD#14 SW-W	40'	ND	ND	ND	ND	ND	ND
	LD#15 BC-S	40'	ND	ND	ND	ND	ND	ND
LD#16 SW-W	18'	ND	ND	ND	ND	ND	ND	
LD#16 SW-W	40'	34	0.041	ND	0.12	0.62	ND	
Landfill Acceptance Borings (October 18, 2001)	DP-1c,d,e,f	4-point composite (15-30')	ND	ND	ND	ND	ND	ND
	DP-2c,d,e,f	4-point composite (15-30')	130	ND	0.13	0.37	1.2	ND
Soil Sampling Additional Site Assessment (February 14, 2001)	DP-1a	2	ND	ND	0.010	ND	0.025	ND
	f	23	ND	ND	ND	ND	ND	ND
	g @ 24'	24	ND	ND	ND	ND	0.007	ND
	g @ 27'	27	ND	ND	ND	0.007	0.015	ND
	DP-2a	2	ND	ND	0.019	0.020	0.13	ND
	d	13.5	1,800	<0.5	4.5	19	270	ND*
	e	18.5	8,700	18	720	230	1,600	<0.5*
	g	24	1,800	3.5	52	39.0	250	ND*
	DP-3a	2	ND	ND	0.017	0.006	0.054	ND
	b	7.5	ND	ND	0.063	0.020	0.12	ND
	e	18.5	ND	ND	ND	ND	ND	ND
	g	27.5	18	0.036	0.067	0.070	0.060	ND*
	DP-4a	2	ND	ND	0.014	0.008	0.058	ND
	e	19.5	ND	ND	ND	ND	ND	ND
	g @ 25'	25	ND	ND	ND	ND	ND	ND
	g @ 27'	27	ND	ND	ND	ND	ND	ND
	DP-5a	2	ND	ND	ND	ND	ND	ND
	d	12	ND	ND	ND	ND	ND	ND
	f	20	ND	ND	ND	ND	ND	ND
	g	24	ND	ND	ND	ND	ND	ND
	DP-6a	2	ND	ND	ND	ND	ND	ND
	d	14	ND	ND	ND	ND	ND	ND
	e	18	ND	ND	ND	ND	ND	ND
	g	24	ND	ND	ND	0.009	ND	ND
	DP-7a	2	ND	ND	ND	ND	ND	ND
	d	14	ND	ND	ND	ND	ND	ND
	e	18	ND	ND	ND	ND	ND	ND
	g	24	ND	ND	ND	ND	ND	ND
	DP-8a	2	ND	ND	ND	ND	ND	ND
	d	13	ND	ND	ND	ND	ND	ND
	e	18	ND	ND	ND	ND	ND	ND
	g	24	ND	ND	ND	ND	ND	ND
	DP-9a	2	ND	ND	ND	ND	ND	ND
d	13	ND	ND	ND	ND	ND	ND	
e	18	ND	ND	ND	ND	ND	ND	
g	24	18	0.020	0.020	0.19	0.30	ND*	
Laboratory's Practical Quantitation Limits.			1	0.005	0.005	0.005	0.005	0.05

**NOTES:**

TPH-g : Total Petroleum Hydrocarbons as gasoline  
 BTEX: B Benzene, T Toluene, E Ethylbenzene, and X Total Xylenes  
 MTBE: Methyl-tert-Butyl Ether  
 bgs: below ground surface  
 ND: Not detected at or above the lab's practical quantitation limit  
 <X : Not detected at the elevated PQL, X PQL elevated due to laboratory dilution  
 \*: MTBE Analysis confirmed by EPA Method 8260

**Table 1: Summary of Groundwater Elevation and PHC Analytical Data  
Former Harbert Transportation Facility, 19984 Meekland Avenue, Hayward, Ca.  
Weber, Hayes and Associates Project H9042**

Well I.D.	Date	Screened Interval (feet below ground surface)	Surveyed T.O.C. Elevation (feet)	Depth to Groundwater (feet below ground surface)	Calculated Groundwater Elevation (feet)	Laboratory Analytical Results							Field Measurements	
						TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	F.O.'s (ug/L)	D.O. (mg/L)	ORP (mV)
MW-3		20 - 40?	55.44											
	27-Aug-2002			23.87	31.57	350	0.56	1.1	14	3.4	ND	--	0.13	216
	13-Jun-2002			22.92	32.52	300	1.1	1.4	4.0	1.8	ND	--	0.14	194
	21-Mar-2002			21.96	33.48	240	0.94	2.5	12	11.7	ND	--	0.1	--
	18-Dec-2001			23.59	31.85	270	1.6	1.7	13	5.4	ND	--	--	--
	20-Sep-2001			24.16	31.28	380	1.7	2.6	32	8.9	ND	--	0.4	--
	20-Jun-2001			23.55	31.89	760	4.4	2.4	62	23	ND*	--	--	--
	29-Mar-2001			22.02	33.42	170	1.1	ND	10	1.6	ND	--	0.6	--
	12-Jan-2001			23.41	32.03	310	2.4	2.2	4.4	10	ND	--	0.7	--
27-Sep-2000	23.09	32.35	430	ND	ND	44	ND	ND	ND	1	--			
MW-4		20 - 40?	55.71											
	27-Aug-2002			24.07	31.64	--	--	--	--	--	--	--	0.21	187
	13-Jun-2002			23.15	32.56	ND	ND	ND	ND	ND	ND	--	0.20	392
	21-Mar-2002			22.15	33.56	ND	ND	ND	ND	ND	ND	--	0.2	--
	18-Dec-2001			23.80	31.91	ND	ND	0.9	ND	ND	ND	--	--	--
	20-Sep-2001			24.32	31.39	ND	ND	ND	ND	ND	ND	--	0.4	--
	20-Jun-2001			23.74	31.97	ND	ND	ND	ND	ND	ND	--	--	--
	29-Mar-2001			22.22	33.49	ND	ND	4.2	ND	ND	ND	--	0.5	--
	12-Jan-2001			23.60	32.11	ND	ND	ND	ND	ND	ND	--	0.7	--
27-Sep-2000	23.25	32.46	ND	ND	ND	ND	ND	ND	ND	2.5	--			
MW-5		25 - 45	56.03											
	27-Aug-2002			24.42	31.61	1,900	170	14	210	93	ND*	--	0.43	207
	13-Jun-2002			23.57	32.46	1,500	24	16	120	110	ND*	--	0.06	144
	21-Mar-2002			24.69	31.34	360	11	9.4	28	62	ND	--	0.1	--
	18-Dec-2001			23.15	32.88	780	21	12	86	94	ND*	--	--	--
	20-Sep-2001			24.75	31.28	2,300	46	41	280	330	ND*	--	0.3	--
	20-Jun-2001			24.15	31.88	6,500	120	130	740	940	ND*	--	--	--
	29-Mar-2001			22.69	33.34	13,000	220	510	1,000	2,700	ND*	--	0.4	--
	12-Jan-2001			23.97	32.06	1,100	62	40	150	290	ND*	--	0.3	--
27-Sep-2000	23.69	32.34	18,000	840	2.9	1,200	3,500	< 30	ND	0.4	--			
MW-6		25 - 45	56.01											
	27-Aug-2002			24.44	31.57	1,300	< 2.5	7.2	210	55	ND*	--	0.14	231
	13-Jun-2002			23.53	32.48	1,600	< 1.25	4.7	67	5.3	< 1.5*	--	0.53	233
	21-Mar-2002			23.11	32.90	750	0.77	1.2	39	3.2	ND*	--	0.1	--
	18-Dec-2001			24.16	31.85	3,700	33	8.7	320	110	< 1.5*	--	--	--
	20-Sep-2001			24.72	31.29	2,500	11	8.6	240	94	ND*	--	0.3	--
	20-Jun-2001			24.13	31.88	1,800	14	4.6	160	79	ND*	--	--	--
	29-Mar-2001			22.56	33.45	610	2.2	ND	37	4.6	ND*	--	0.5	--
	12-Jan-2001			23.97	32.04	2,300	16	3.5	290	83	ND*	--	0.5	--
27-Sep-2000	23.56	32.45	1,300	ND	4.3	200	17	ND	ND	0.5	--			

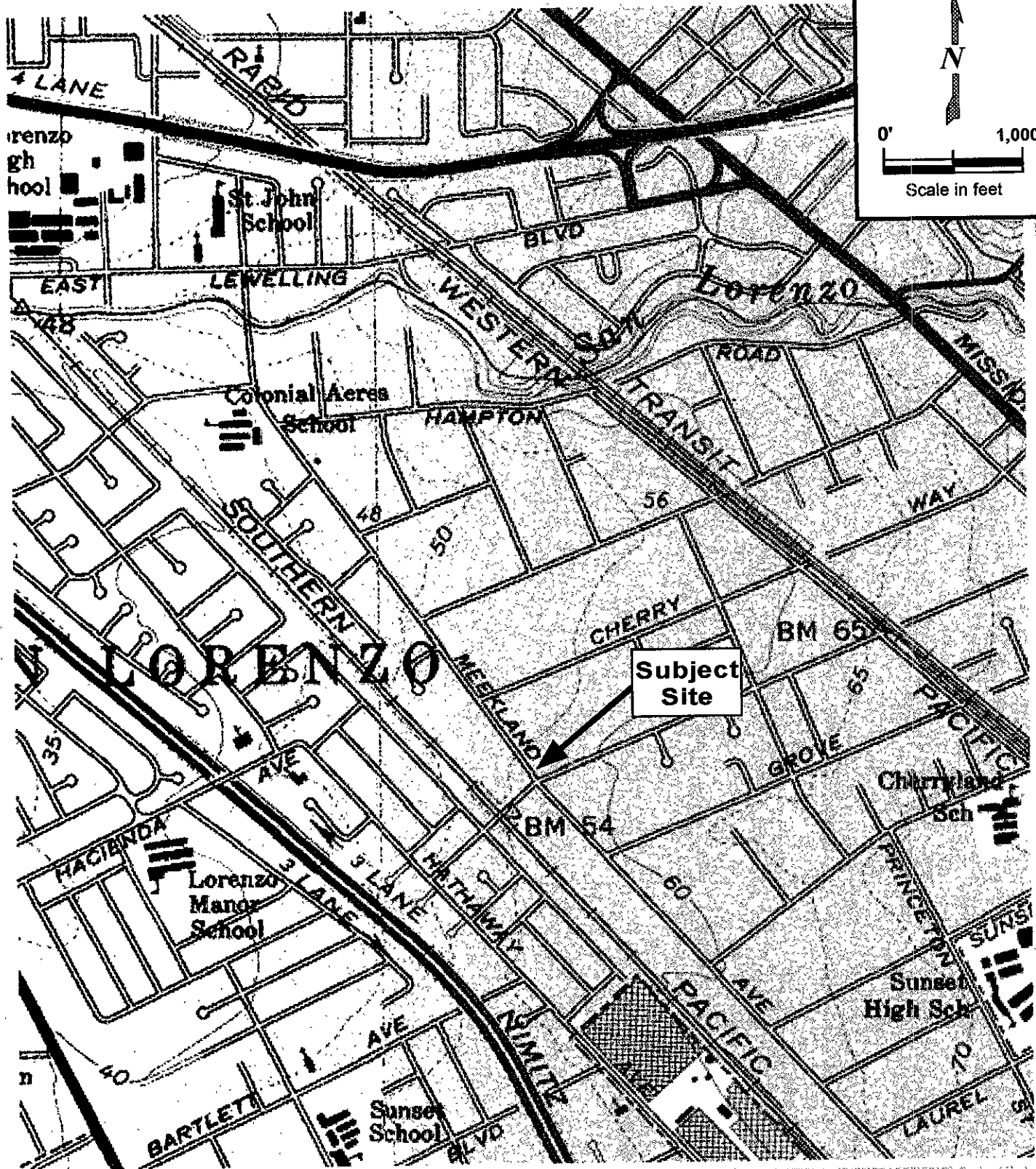
**Table 1: Summary of Groundwater Elevation and PHC Analytical Data  
Former Harbert Transportation Facility, 19984 Meekland Avenue, Hayward, Ca.  
Weber, Hayes and Associates Project H9042**

Well I.D.	Date	Screened Interval (feet below ground surface)	Surveyed T.O.C. Elevation (feet)	Depth to Groundwater (feet below ground surface)	Calculated Groundwater Elevation (feet)	Laboratory Analytical Results							Field Measurements	
						TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	F.O.'s (ug/L)	D.O. (mg/L)	ORP (mV)
MW-7		25 - 45	56.66											
	27-Aug-2002			24.98	31.68	--	--	--	--	--	--	--	0.22	369
	13-Jun-2002			24.07	32.59	ND	ND	ND	ND	ND	ND	--	0.20	370
	21-Mar-2002			23.05	33.61	ND	ND	ND	ND	ND	ND	--	0	--
	18-Dec-2001			24.70	31.96	290	ND	ND	119	4.6	ND	--	--	--
	20-Sep-2001			25.27	31.39	290	0.98	ND	12	4.5	ND*	--	0.4	--
	20-Jun-2001			24.68	31.98	430	2.4	0.96	30	9.7	ND*	--	--	--
	29-Mar-2001			23.10	33.56	ND	ND	ND	ND	ND	ND	--	0.5	--
	12-Jan-2001			24.49	32.17	1,600	13	0.86	150	35	ND*	--	0.5	--
27-Sep-2000	24.18	32.48	270	13	6.6	11	ND	ND	ND	0.5	--			
MW-8		20 - 40	56.16											
	27-Aug-2002			24.43	31.73	--	--	--	--	--	--	--	1.98	402
	13-Jun-2002			23.54	32.62	ND	ND	ND	ND	ND	ND	--	1.96	394
	21-Mar-2002			22.51	33.65	ND	ND	ND	ND	ND	ND	--	2.4	--
	18-Dec-2001			24.16	32.00	ND	ND	ND	ND	ND	ND	--	--	--
	20-Sep-2001			24.68	31.48	ND	ND	ND	ND	ND	ND	--	1.6	--
	20-Jun-2001			24.09	32.07	ND	ND	ND	ND	ND	ND	--	--	--
	29-Mar-2001			22.56	33.60	ND	ND	0.8	ND	ND	ND	--	1.9	--
	12-Jan-2001			23.93	32.23	ND	ND	ND	ND	ND	ND	--	2.1	--
27-Sep-2000	23.59	32.57	ND	ND	ND	ND	ND	ND	ND	1.9	--			
MW-9		20 - 40	55.21											
	27-Aug-2002			23.69	31.52	310	27	2.5	20	20	ND*	--	0.18	154
	13-Jun-2002			22.76	32.45	5,100	140	21	490	300	< 1.5*	--	0.14	135
	21-Mar-2002			21.76	33.45	510	26	4.6	50	52	ND	--	0.1	--
	18-Dec-2001			23.38	31.83	6,400	640	120	630	1,300	< 1.5*	--	--	--
	20-Sep-2001			23.94	31.27	3,400	270	38.0	390	430	ND*	--	0.3	--
	20-Jun-2001			23.36	31.85	8,300	330	88.0	850	1,700	< 0.6*	--	--	--
	29-Mar-2001			21.61	33.60	1,600	110	14.0	240	150	ND*	--	0.4	--
	12-Jan-2001			23.17	32.04	10,000	550	110.0	1,200	2,200	ND*	--	0.5	--
27-Sep-2000	22.90	32.31	1,000	40	6.7	110	55	ND	ND	0.5	--			
MW-10		25 - 40	54.74											
	27-Aug-2002			23.46	31.28	1,800	< 2.5	15	3.9	5	ND*	--	0.14	183
	13-Jun-2002			22.56	32.18	1,700	0.77	6.2	3.3	2.9	< 0.3*	--	0.28	201
	21-Mar-2002			21.53	33.21	1,500	ND	11	3.1	ND	ND*	--	0.1	--
	18-Dec-2001			21.11	33.63	1,500	7.9	2.9	ND	ND	< 0.6*	--	--	--
	20-Sep-2001			23.70	31.04	1,200	6	9.9	1.2	3.9	ND*	--	0.4	--
	20-Jun-2001			23.17	31.57	810****	3	1.6	5.1	13	ND*	--	--	--
	29-Mar-2001			21.63	33.11	600****	2	0.65	ND	0.72	ND	--	0.5	--
	12-Jan-2001			22.99	31.75	530	3.7	1.9	2.1	4.5	ND	--	0.6	--
27-Sep-2000	22.72	32.02	880	ND	ND	ND	ND	ND	ND	0.4	--			

**Table 1: Summary of Groundwater Elevation and PHC Analytical Data  
Former Harbert Transportation Facility, 19984 Meekland Avenue, Hayward, Ca.  
Weber, Hayes and Associates Project H9042**

Well I.D.	Date	Screened Interval (feet below ground surface)	Surveyed T.O.C. Elevation (feet)	Depth to Groundwater (feet below ground surface)	Calculated Groundwater Elevation (feet)	Laboratory Analytical Results							Field Measurements		
						TPH-g (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	F.O.'s (ug/L)	D.O. (mg/L)	ORP (mV)	
MW-11		25 - 40	55.20												
	27-Aug-2002			23.68	31.06	--	--	--	--	--	--	--	0.13	369	
	13-Jun-2002			22.78	31.96	ND	ND	ND	ND	ND	ND	ND	--	0.15	380
	21-Mar-2002			21.76	32.98	ND	ND	ND	ND	ND	ND	ND	--	0.1	--
	18-Dec-2001			23.39	31.35	ND	ND	0.56	ND	ND	ND	ND	--	--	--
	20-Sep-2001			23.87	30.87	ND	ND	ND	ND	ND	ND	ND	--	0.4	--
	20-Jun-2001			23.39	31.35	ND	ND	ND	ND	ND	ND	ND	--	--	--
	29-Mar-2001			21.84	32.90	ND	ND	4.5	ND	ND	ND	ND	--	0.6	--
	12-Jan-2001			23.21	31.53	ND	ND	2.1	ND	ND	ND	ND	--	0.6	--
27-Sep-2000	22.43	32.31	63	ND	ND	ND	ND	ND	ND	ND	0.6	--			
MW-12		25 - 40	56.49												
	27-Aug-2002			24.68	31.81	--	--	--	--	--	--	--	0.60	410	
	13-Jun-2002			23.86	32.63	ND	ND	ND	ND	ND	ND	ND	--	0.51	400
	21-Mar-2002			22.86	33.63	ND	ND	ND	ND	ND	ND	ND	--	0.7	--
	18-Dec-2001			24.49	32.00	ND	ND	0.86	ND	ND	ND	ND	--	--	--
	20-Sep-2001			24.95	31.54	ND	ND	ND	ND	ND	ND	ND	--	0.7	--
	20-Jun-2001			24.47	32.02	ND	ND	ND	ND	ND	ND	ND	--	--	--
	29-Mar-2001			22.91	33.58	ND	ND	5.0	ND	ND	ND	ND	--	1	--
	12-Jan-2001			24.28	32.21	ND	ND	1.1	ND	ND	ND	ND	--	1	--
27-Sep-2000	23.98	32.51	ND	ND	ND	ND	ND	ND	ND	ND	1.2	--			
<b>Laboratory's Practical Quantitation Limit (PQL):</b>						<b>50</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>1</b>	<b>5</b>	<b>5</b>			
<b>Proposed Cleanup Goals</b>						<b>7,000</b>	<b>210</b>	<b>26,000</b>	<b>27,000</b>	<b>200,000</b>	<b>NA</b>	<b>NA</b>	<b>Field Instrument</b>	<b>Field Instrument</b>	

**Notes:**  
T O C = Top of Casting Elevation. Calculated groundwater elevation = TOC - Depth to Groundwater. Referenced to NGVD.  
TPH-g = Total Petroleum Hydrocarbons as gasoline. MTBE = Methyl - tert - Butyl Ether  
F.O.'s = Fuel Oxygenates = Di-isopropyl ether (DIPE), tertiary Butyl Alcohol (TBA), Ethyl tertiary Butyl Ether (ETBE), tertiary amyl Methyl Ether (TAME)  
VOC's = Volatile Organic Compounds. D O = Dissolved Oxygen  
ug/L = micrograms per liter, parts per billion, mg/L = milligrams per liter, parts per million  
ND = Not Detected at the Practical Quantitation Limit (PQL), <X = Not Detected at the elevated PQL, X = PQL elevated because of sample dilution  
-- = Data not collected or measured, or analysis not conducted  
MCL = Maximum Contaminant Level for drinking water in California (Department of Health Services)  
\* Confirmed by GC/MS method 8260  
\*\* = Action Level      \*\*\* = Secondary MCL / water quality goal  
\*\*\*\* = Laboratory Report indicates results within quantitation range, chromatographic pattern not typical of fuel



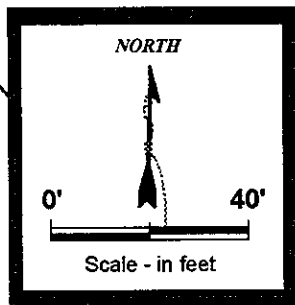
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**Weber, Hayes & Associates**  
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 120 Westgate Drive, Watsonville, Ca. 95076  
 (831) 722 - 3580 (831) 662 - 3100

**Location Map**  
 Former Harbert Transportation Facility  
 19984 Meekland Avenue  
 Hayward, California

**Figure**  
 1  
**Job #**  
 H9042



Former Waste Oil  
UST Excavation  
August 1989

Former Fuel UST  
Excavation  
August 1989

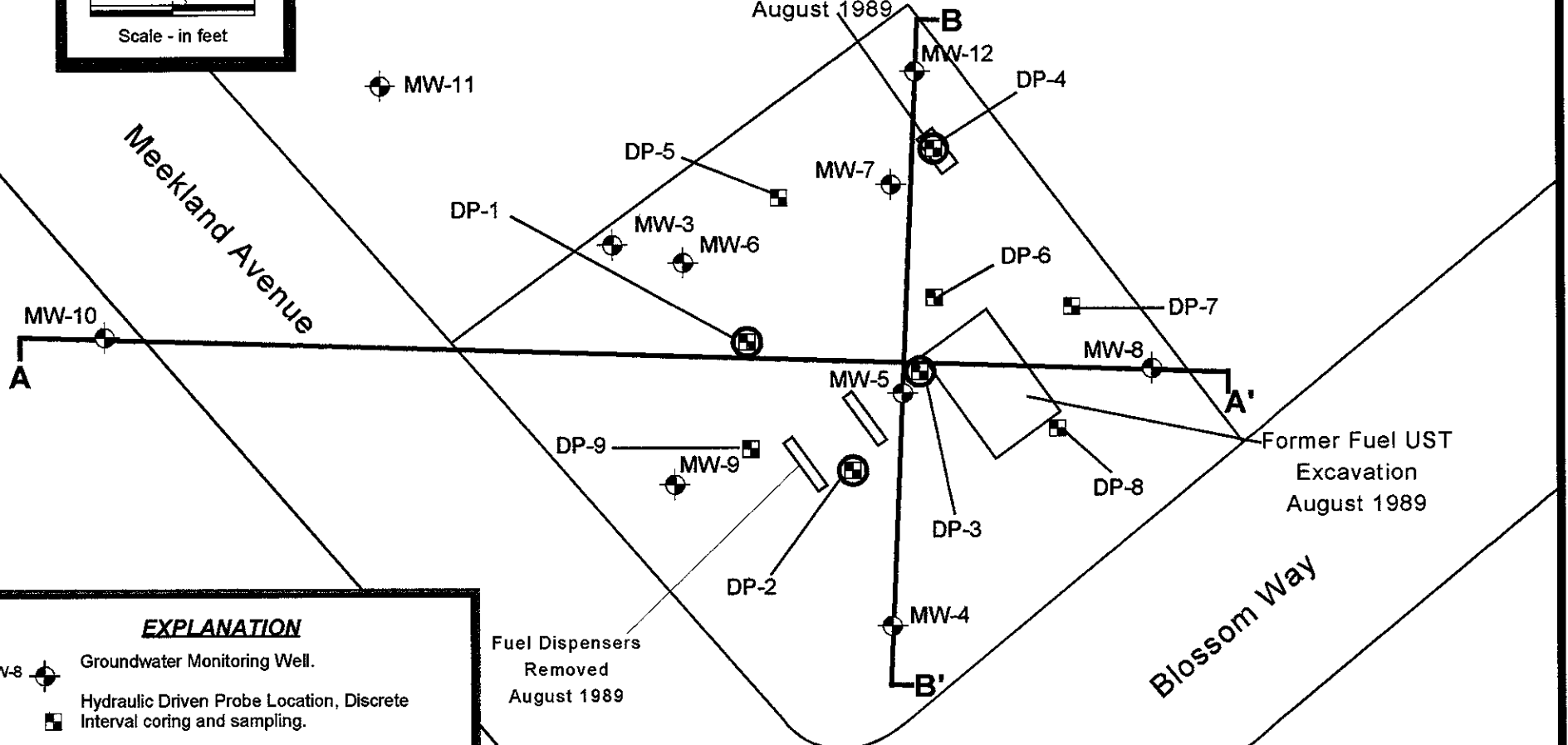
Fuel Dispensers  
Removed  
August 1989

**EXPLANATION**

- MW-8 Groundwater Monitoring Well.
- Hydraulic Driven Probe Location, Discrete Interval coring and sampling.
- Hydraulic Driven Probe Location, Continuous Core.

Meekland Avenue

Blossom Way



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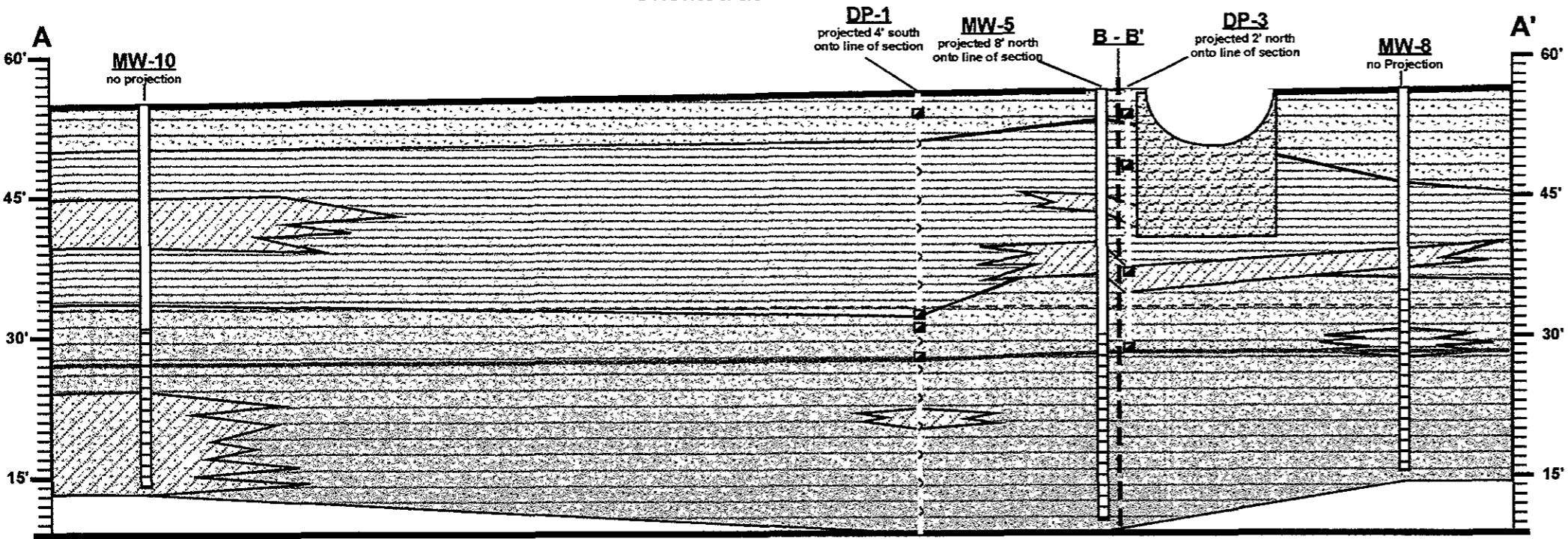
**Site Plan with Keys to Geologic Cross Sections**  
Former Harbert Transportation Facility  
1984 Meekland Avenue, Hayward, California

**Figure  
2  
Project  
H9042**



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Oriented at North 88 West



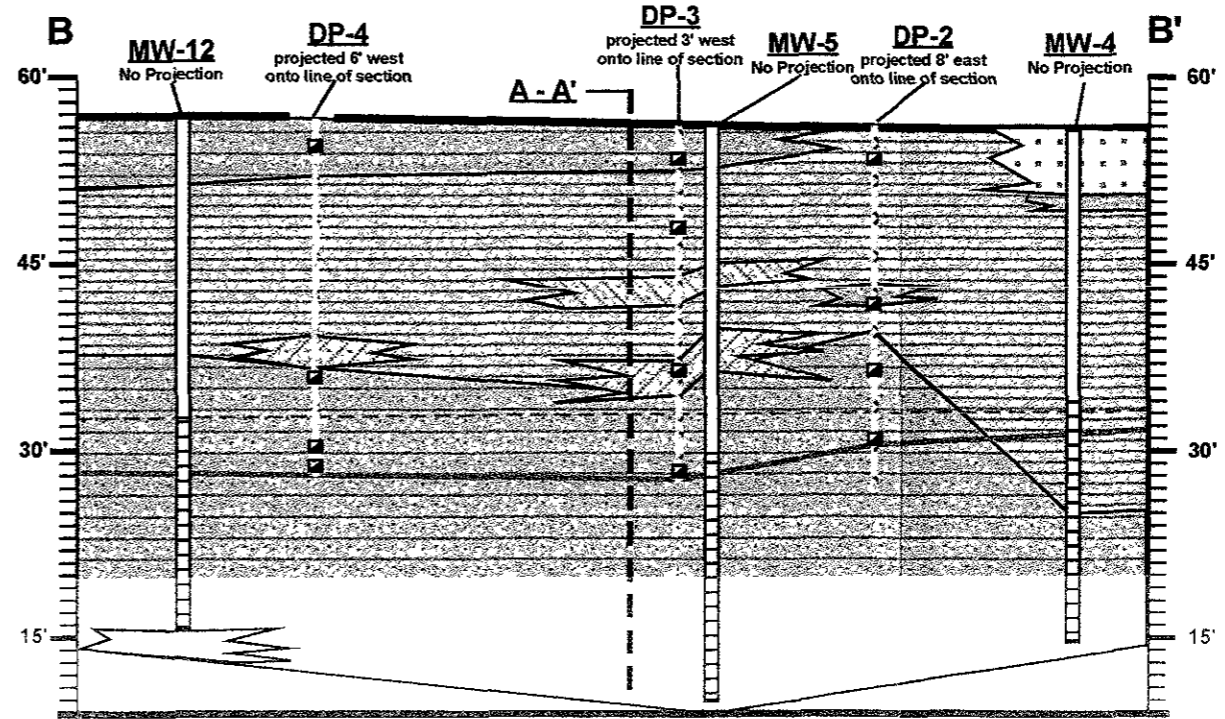
LEGEND:

- Asphalt.
- Fat CLAY, very dark grayish brown to dark gray (10 YR 3/2 to 4/1), damp to wet, firm soft to firm, moderate to high plasticity, no dilatency, low toughness, dominantly clay with few fine to medium grained sands.
- Sandy CLAY, brown to very dark grayish brown (10 YR 4/3 to 3/2), dry to damp, no to moderate plasticity, no dilatency, mostly clay with some fine to medium grain sands, subangular.
- Clayey SAND, color varies, yellowish brown to dark gray (10 YR 3/6 to 5/1), dry to saturated, medium dense, mostly fine grained sands, subangular, 35-40 % clay, slight plasticity.
- Poorly Graded SAND with Gravel, fill material.
- Cement Seal, used in sealing driven probe borings.
- Excavated Native Soil used as Backfill in UST Excavation
- Geologic contact, dashed were inferred.
- Soil sample analyzed at this depth.
- Monitoring well location, designation, completion depth and screened interval
- Groundwater elevation in monitoring wells from March 29, 2001 groundwater monitoring event
- First Encountered Groundwater elevation from Hydraulic Diver Probe Investigation, February 14, 2001

NOTES

See Figure 2 for plan view of geologic cross-sections A-A' and B-B'  
Lithology compiled from Geologic Logs MW-4, 5, 8, 10 and 12 (completed by others) and DP-1-4  
All elevations are referenced to National Geodetic Vertical Datum of 1929 Mean Sea Level (MSL)

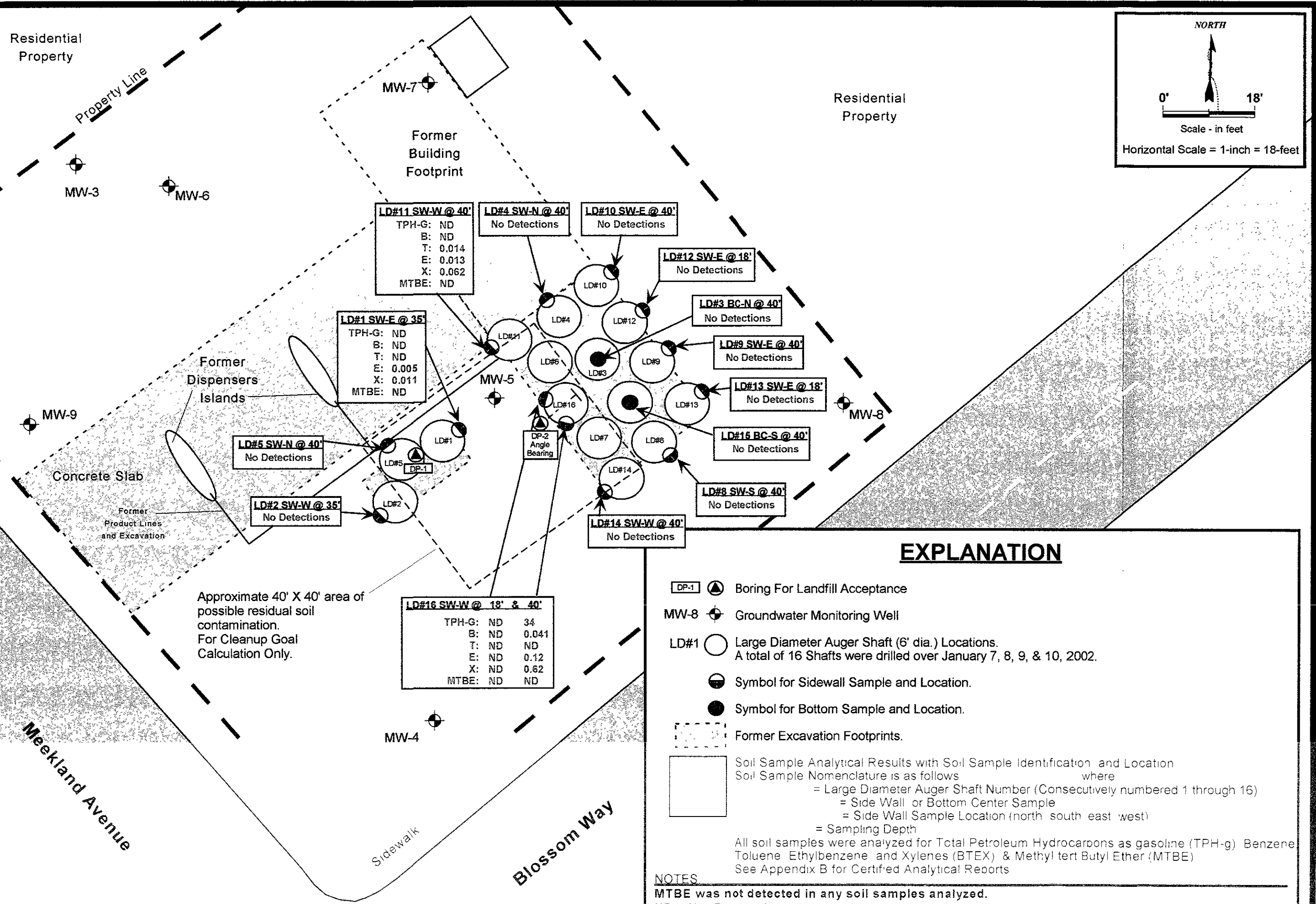
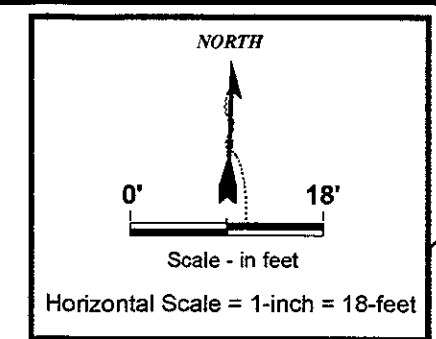
Oriented at North 3 East





**Large Diameter Auger Source Removal Footprint Map and Soil Sampling Certified Analytical Results**  
Harbert Transportation  
19984 Meekland Avenue  
Hayward, California

**Weber, Hayes & Associates**  
Hydrogeology and Environmental Engineering  
120 Westgate Drive, Watsonville, Ca. 95076  
(831) 722 - 3580 (831) 662 - 3100

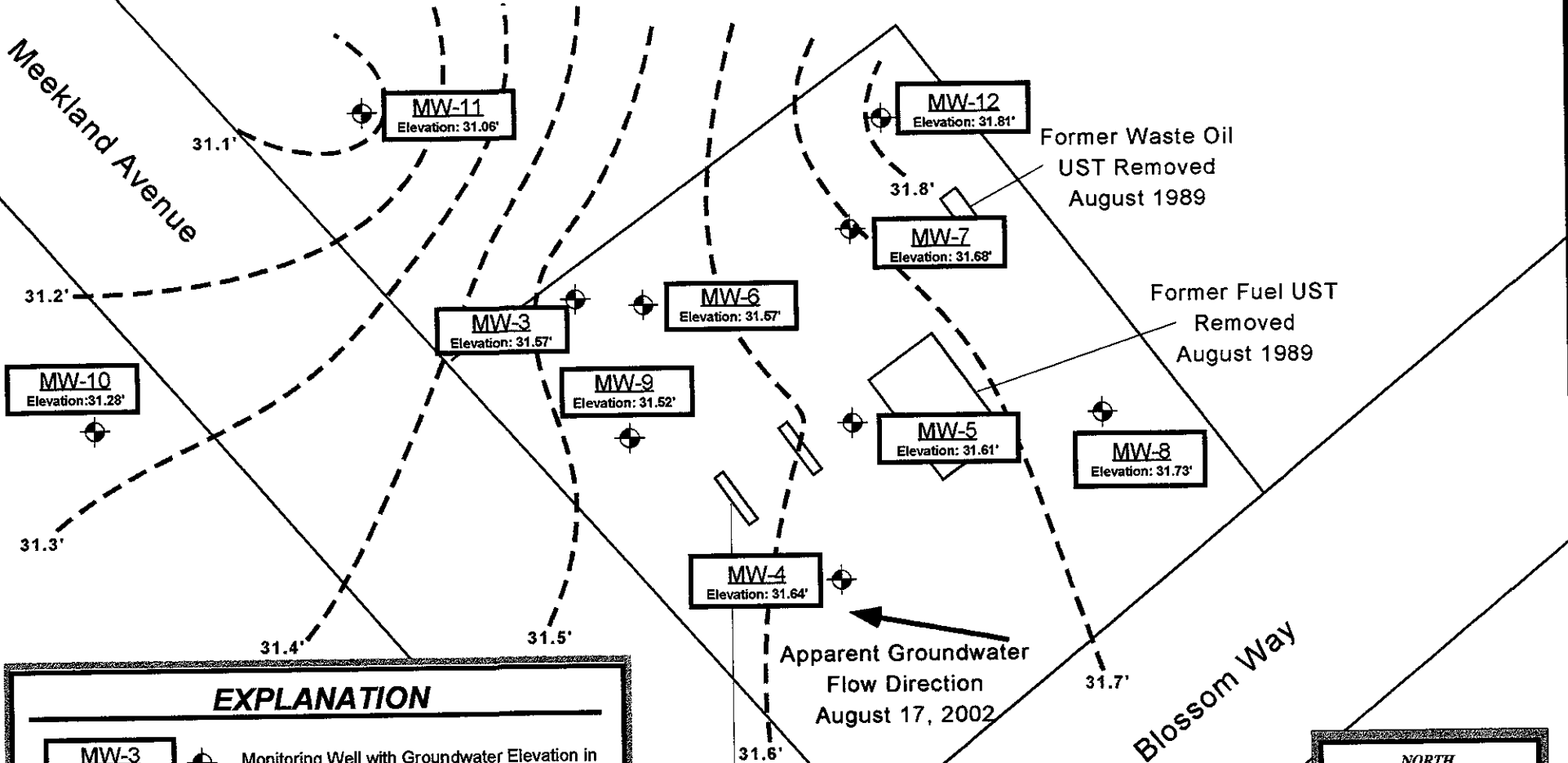



**EXPLANATION**

- DP-1 Boring For Landfill Acceptance
  - MW-8 Groundwater Monitoring Well
  - LD#1 Large Diameter Auger Shaft (6' dia.) Locations.  
A total of 16 Shafts were drilled over January 7, 8, 9, & 10, 2002.
  - Symbol for Sidewall Sample and Location.
  - Symbol for Bottom Sample and Location.
  - Former Excavation Footprints.
  - Soil Sample Analytical Results with Soil Sample Identification and Location  
Soil Sample Nomenclature is as follows where  
= Large Diameter Auger Shaft Number (Consecutively numbered 1 through 16)  
= Side Wall or Bottom Center Sample  
= Side Wall Sample Location (north south east west)  
= Sampling Depth
- All soil samples were analyzed for Total Petroleum Hydrocarbons as gasoline (TPH-g) Benzene Toluene Ethylbenzene and Xylenes (BTEX) & Methyl tert Butyl Ether (MTBE)  
See Appendix B for Certified Analytical Reports

**NOTES**  
MTBE was not detected in any soil samples analyzed.  
ND = Not Detected.

Meekland Avenue



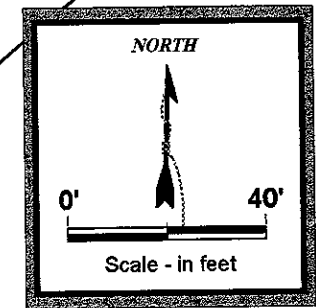
### EXPLANATION

**MW-3**  
Elevation: 32.35'

 Monitoring Well with Groundwater Elevation in feet (NGVD Datum)

Interpolated Groundwater Elevation Contour

32.30'



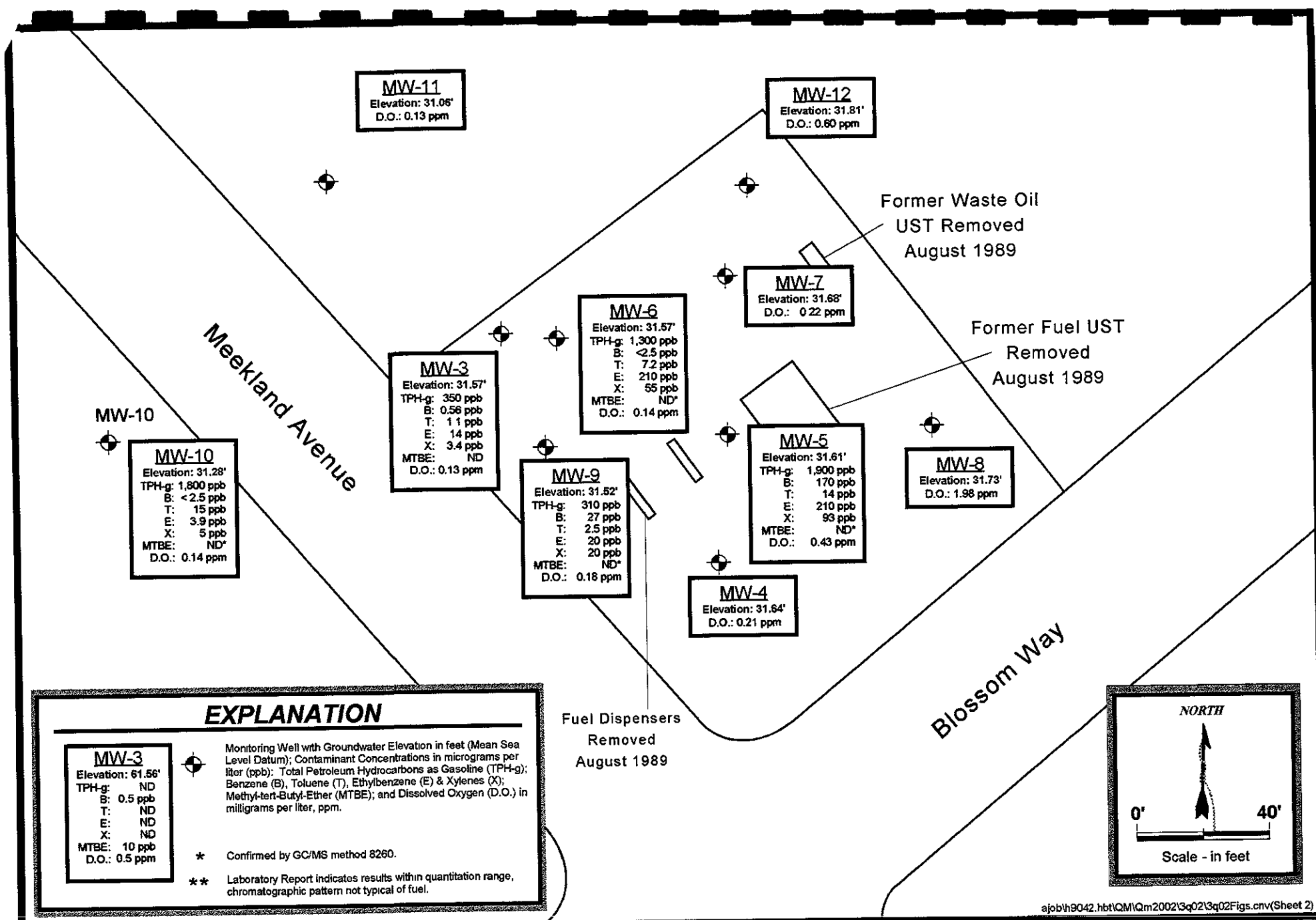
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**Site Plan with Groundwater Elevations**  
**August 27, 2002**  
Former Harbert Transportation Facility  
19984 Meekland Avenue, Hayward, California

**Figure**  
**5**  
**Project**  
**H9042**



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 Hydrogeology and Environmental Engineering  
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**Site Plan with PHC Concentrations in Groundwater**  
 August 27, 2002  
 Former Harbert Transportation Facility  
 19984 Meekland Avenue, Hayward, California

**Figure 6**  
**Project H9042**

Meekland Avenue

MW-11

MW-12

Former Waste Oil  
UST Removed  
August 1989

MW-7

Former Fuel USTs  
Removed  
August 1989

MW-3

MW-6

MW-10

MW-9

MW-5

MW-8

Large-Diameter Auger  
Excavations  
January 2002  
Approximately 594 c.y.


←  
Apparent Groundwater  
Flow Direction  
August 27, 2002


MW-4


Fuel Dispensers  
Removed  
August 1989

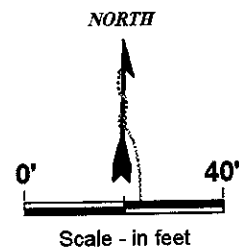
Blossom Way

**EXPLANATION**

MW-3  Monitoring Well

 Estimated Extent of  
TPH-g greater than  
1,000 ppb

 Estimated Extent of  
Benzene greater  
than 10 ppb



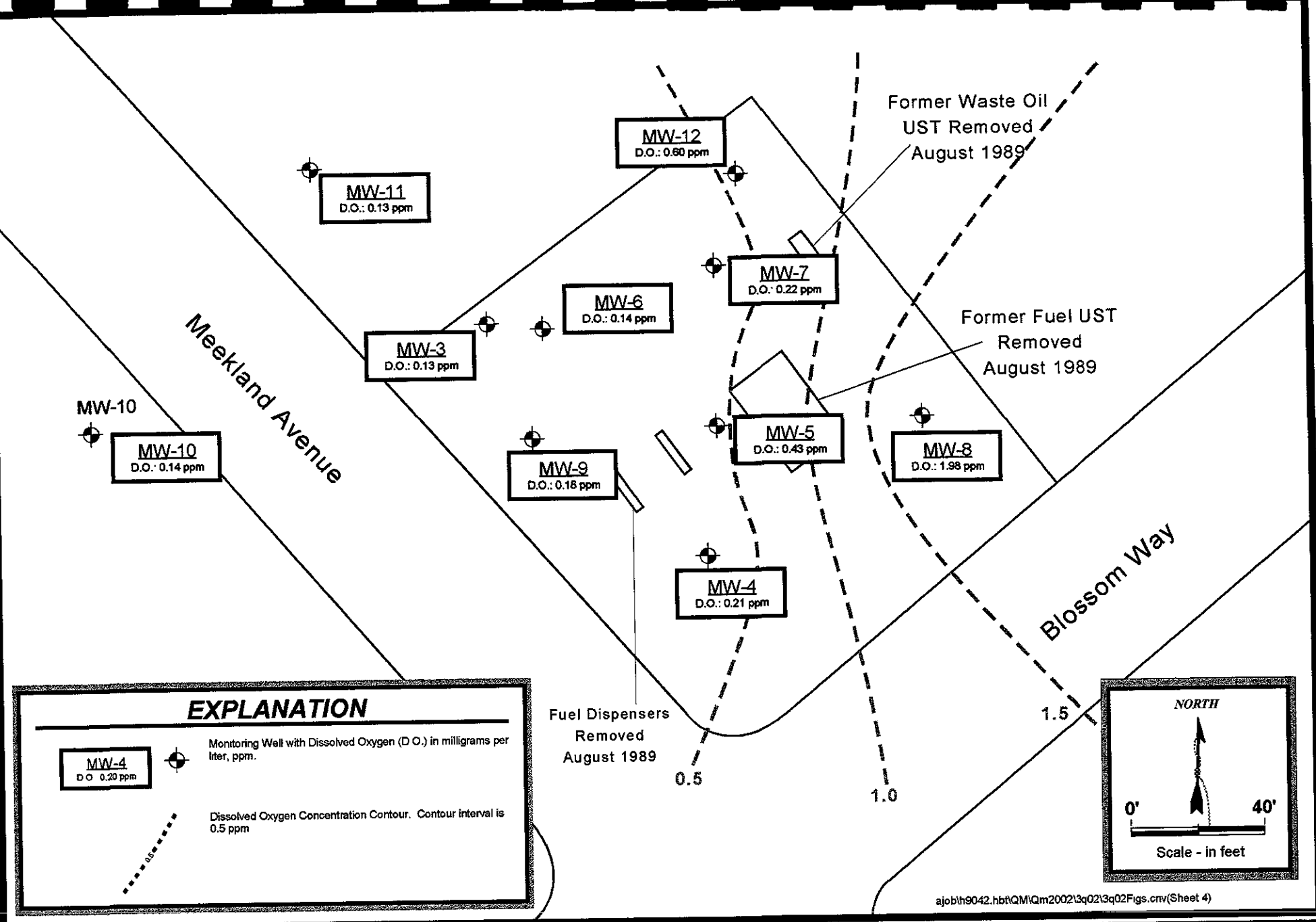
ajob\h9042.hbt\QM\Qm2002\3q02\3q02\Figs.cmv(Sheet 3)



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**Site Plan with Extent of TPH-g and Benzene  
in Groundwater, August 27, 2002**  
Former Harbert Transportation Facility  
19984 Meekland Avenue, Hayward, California

**Figure  
7  
Project  
H9042**



**EXPLANATION**

Monitoring Well with Dissolved Oxygen (D.O.) in milligrams per liter, ppm.

Dissolved Oxygen Concentration Contour. Contour interval is 0.5 ppm

**NORTH**

0' 40'

Scale - in feet

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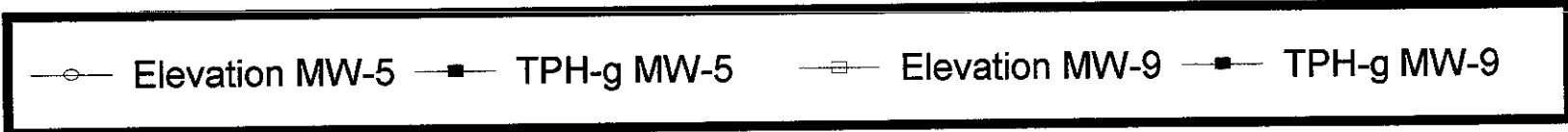
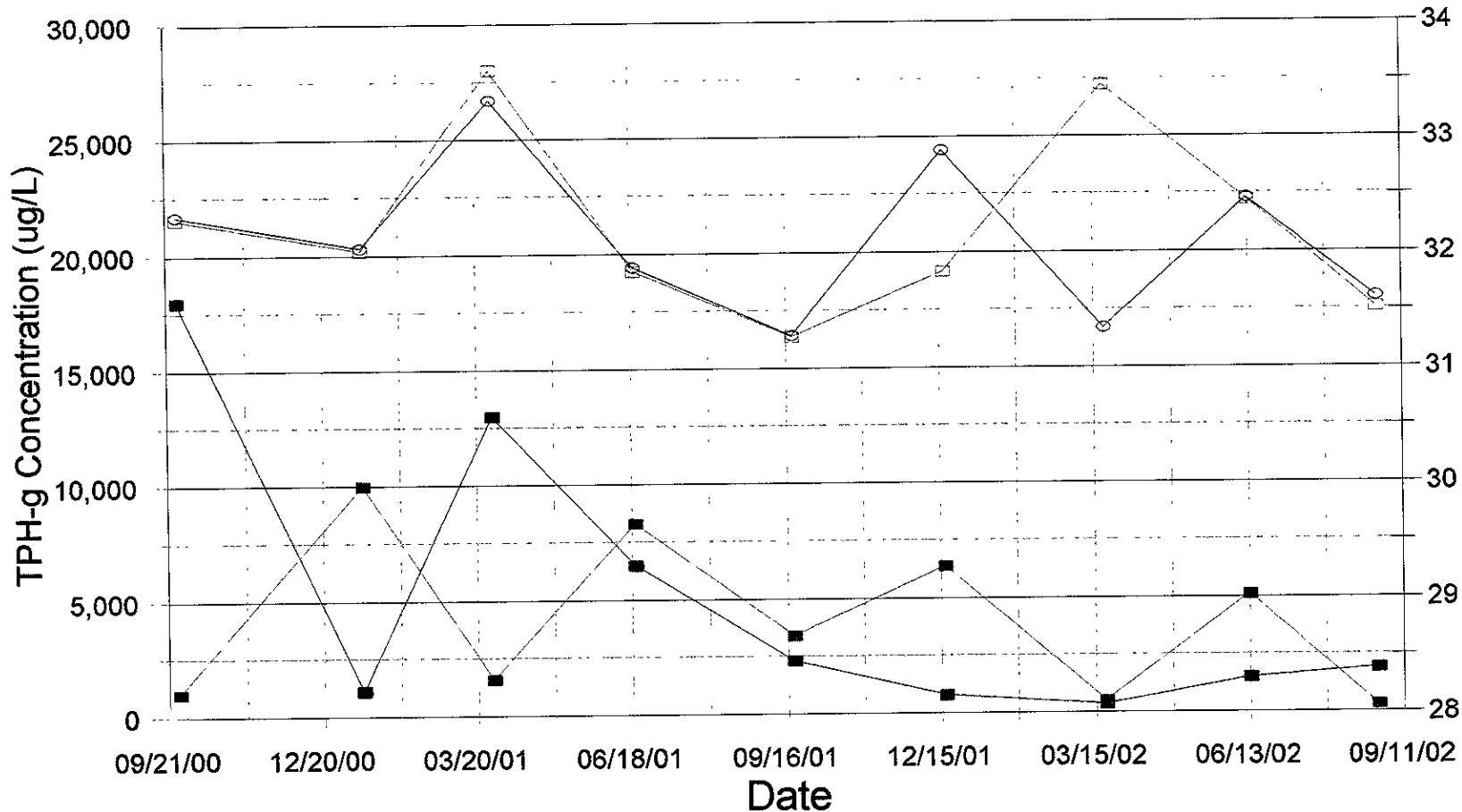
**Weber, Hayes & Associates**  
 Hydrogeology and Environmental Engineering  
 120 Westgate Drive, Watsonville, Ca. 95076  
 (831) 722 - 3580 (831) 662 - 3100

**Site Plan with Dissolved Oxygen Contours**  
 August 27, 2002  
 Former Harbert Transportation Facility  
 19984 Meekland Avenue, Hayward, California

**Figure 8**  
 Project H9042

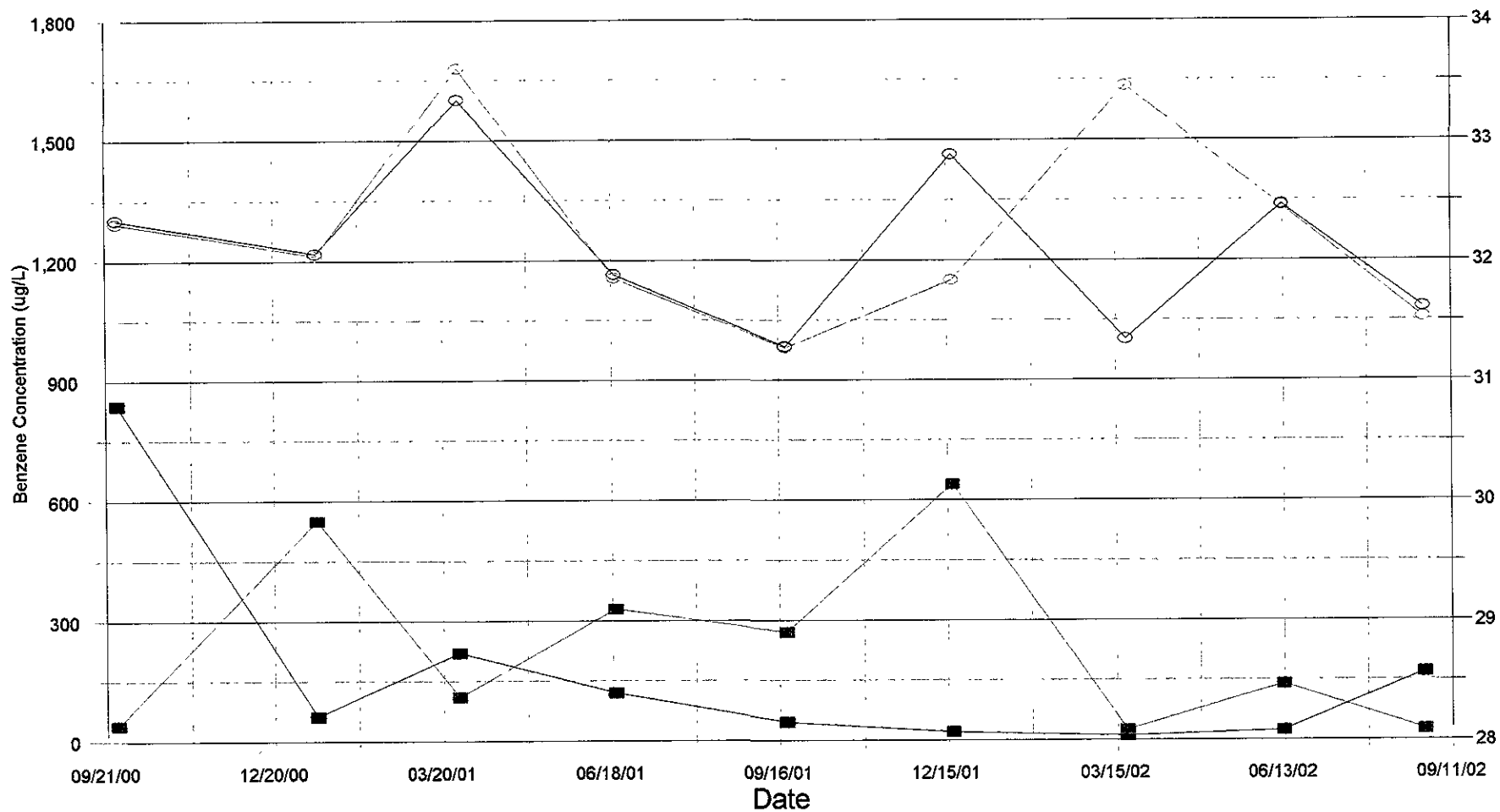
# Figure 9

## TPH-g and Elevation MW-5 and MW-9 Harbert Transportation



# Figure 10

## Benzene and Elevation MW-5 and MW-9 Harbert Transportation



Groundwater Monitoring Report - Third Quarter 2002  
19984 Meekland Avenue, Hayward, California  
December 27, 2002

## **Appendix A**

### **RBCA Toolkit Output Tables - Calculation of Cleanup Goals**



RBCA SITE ASSESSMENT

Site Name: Harbert Transportation

Completed By: Weber, Hayes and Associates

Job ID: H9042 C

Site Location: 19984 Meekland Avenue, Hayward, CA

Date Completed: 27-Dec-02

1 OF 1

SOIL (0 - 23 ft) SSTL VALUES

Target Risk (Class A & B) 1.0E-6  
 Target Risk (Class C) 1.0E-5  
 Target Hazard Quotient 1.0E+0

Groundwater DAF Option Domenico - No Decay  
 (One-directional vert. dispersion)

SSTL Results For Complete Exposure Pathways ("X" if Complete)

CONSTITUENTS OF CONCERN	Representative Concentration (mg/kg)	SSTL Results For Complete Exposure Pathways ("X" if Complete)											Applicable SSTL (mg/kg)	SSTL Exceeded? "X" if yes	Required CRF Only if "yes" left
		Soil Leaching to Groundwater Ingestion			Soil Vol. to Indoor Air	Soil Volatilization and Surface Soil Particulates to Outdoor Air			Surface Soil Inhalation, Ingestion Dermal Contact						
		On-site (0 ft)	Off-site 1 (250 ft)	Off-site 2 (0 ft)	On-site (0 ft)	On-site (0 ft)	Off-site 1 (75 ft)	Off-site 2 (0 ft)	On-site (0 ft)	Construction Worker					
CAS No.	Name	(mg/kg)	None	Residential	None	Residential	Residential	Construction Worker	Residential	None	Residential	Construction Worker	(mg/kg)	"X" if yes	
0-00-0	TPH - Arom >C08-C10	2.0E-1	NA	>1.0E+3	NA	3.8E+1	>1.0E+3	NA	>1.0E+3	NA	9.4E+2	NA	3.8E+1	<input type="checkbox"/>	<1
71-43-2	Benzene	4.2E-3	NA	1.7E+0	NA	6.5E-3	8.6E+0	NA	9.6E+0	NA	1.8E+0	NA	6.5E-3	<input type="checkbox"/>	<1
108-88-3	Toluene	4.6E-3	NA	>7.5E+2	NA	1.5E+1	>7.5E+2	NA	>7.5E+2	NA	3.7E+3	NA	1.5E+1	<input type="checkbox"/>	<1
100-41-4	Ethylbenzene	6.1E-3	NA	>6.3E+2	NA	8.7E+1	>6.3E+2	NA	>6.3E+2	NA	2.3E+3	NA	8.7E+1	<input type="checkbox"/>	<1
1330-20-7	Xylene (mixed isomers)	1.0E-2	NA	>5.0E+2	NA	4.8E+2	>5.0E+2	NA	>5.0E+2	NA	4.3E+4	NA	4.8E+2	<input type="checkbox"/>	<1
107-06-2	Dichloroethane, 1,2-	4.1E-3	NA	5.2E-1	NA	6.5E-3	2.7E+0	NA	3.0E+0	NA	5.9E-1	NA	6.5E-3	<input type="checkbox"/>	<1
127-18-4	Tetrachloroethene	2.5E-3	NA	2.4E+0	NA	9.3E-2	1.2E+2	NA	1.4E+2	NA	1.1E+0	NA	9.3E-2	<input type="checkbox"/>	<1
79-01-6	Trichloroethene	2.5E-3	NA	9.2E+0	NA	3.2E-2	4.2E+1	NA	4.6E+1	NA	7.9E-1	NA	3.2E-2	<input type="checkbox"/>	<1

> indicates risk-based target concentration greater than constituent residual saturation value. NA = Not applicable. NC = Not calculated

RBCA SITE ASSESSMENT

Site Name: Harbert Transportation  
 Site Location: 19984 Meekland Avenue, Hayward, CA

Completed By: Weber, Hayes and Associates  
 Date Completed: 27-Dec-02

Job ID: H9042.C

**GROUNDWATER SSTL VALUES**

Target Risk (Class A & B) 1.0E-6  
 Target Risk (Class C) 1.0E-5  
 Target Hazard Quotient 1.0E+0

Groundwater DAF Option: Domenico - No Decay  
 (One-directional vert dispersion)

SSTL Results For Complete Exposure Pathways ("X" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration (mg/L)	Groundwater Ingestion			X	GW Vol. to Indoor Air	Groundwater Volatilization to Outdoor Air			Applicable SSTL (mg/L)	SSTL Exceeded? "■" if yes	Required CRF Only if "yes" left
			On-site (0 ft)	Off-site 1 (250 ft)	Off-site 2 (0 ft)			On-site (0 ft)	On-site (0 ft)	Off-site 1 (75 ft)			
CAS No.	Name		None	Residential	None	Residential	Residential	Residential	Residential	None			
0-00-0	TPH - Arom >C08-C10	4.3E-1	NA	1.0E+1	NA	7.0E+0	>6.5E+1	>6.5E+1	NA	7.0E+0	<input type="checkbox"/>	<1	
71-43-2	Benzene	2.7E-3	NA	2.1E-2	NA	2.1E-2	1.7E+1	1.9E+1	NA	2.1E-2	<input type="checkbox"/>	<1	
108-88-3	Toluene	4.3E-3	NA	5.2E+1	NA	2.7E+1	>5.2E+2	>5.2E+2	NA	2.7E+1	<input type="checkbox"/>	<1	
100-41-4	Ethylbenzene	9.5E-3	NA	2.6E+1	NA	6.5E+1	>1.7E+2	>1.7E+2	NA	2.6E+1	<input type="checkbox"/>	<1	
1330-20-7	Xylene (mixed isomers)	9.9E-3	NA	>2.0E+2	NA	>2.0E+2	>2.0E+2	>2.0E+2	NA	>2.0E+2	<input type="checkbox"/>	NA	
107-06-2	Dichloroethane, 1,2-	1.6E-3	NA	6.6E-3	NA	1.9E-2	1.3E+1	1.4E+1	NA	6.6E-3	<input type="checkbox"/>	<1	
127-18-4	Tetrachloroethene	2.5E-4	NA	1.2E-2	NA	1.3E-1	1.1E+2	1.3E+2	NA	1.2E-2	<input type="checkbox"/>	<1	
79-01-6	Trichloroethene	2.5E-4	NA	5.5E-2	NA	4.1E-2	2.4E+1	2.7E+1	NA	4.1E-2	<input type="checkbox"/>	<1	

">" indicates risk-based target concentration greater than constituent solubility value    NA = Not applicable.    NC = Not calculated.

**RBCA SITE ASSESSMENT**

**TPH Criteria SSTL Worksheet**

Site Name: Harbert Transportation

Completed By: Weber, Hayes and Associates

Job ID: H9042.C

Site Location: 19984 Meekland Avenue, Hayward, CA

Date Completed: 27-Dec-02

1 OF 1

**CALCULATION OF SSTL VALUES FOR TPH**

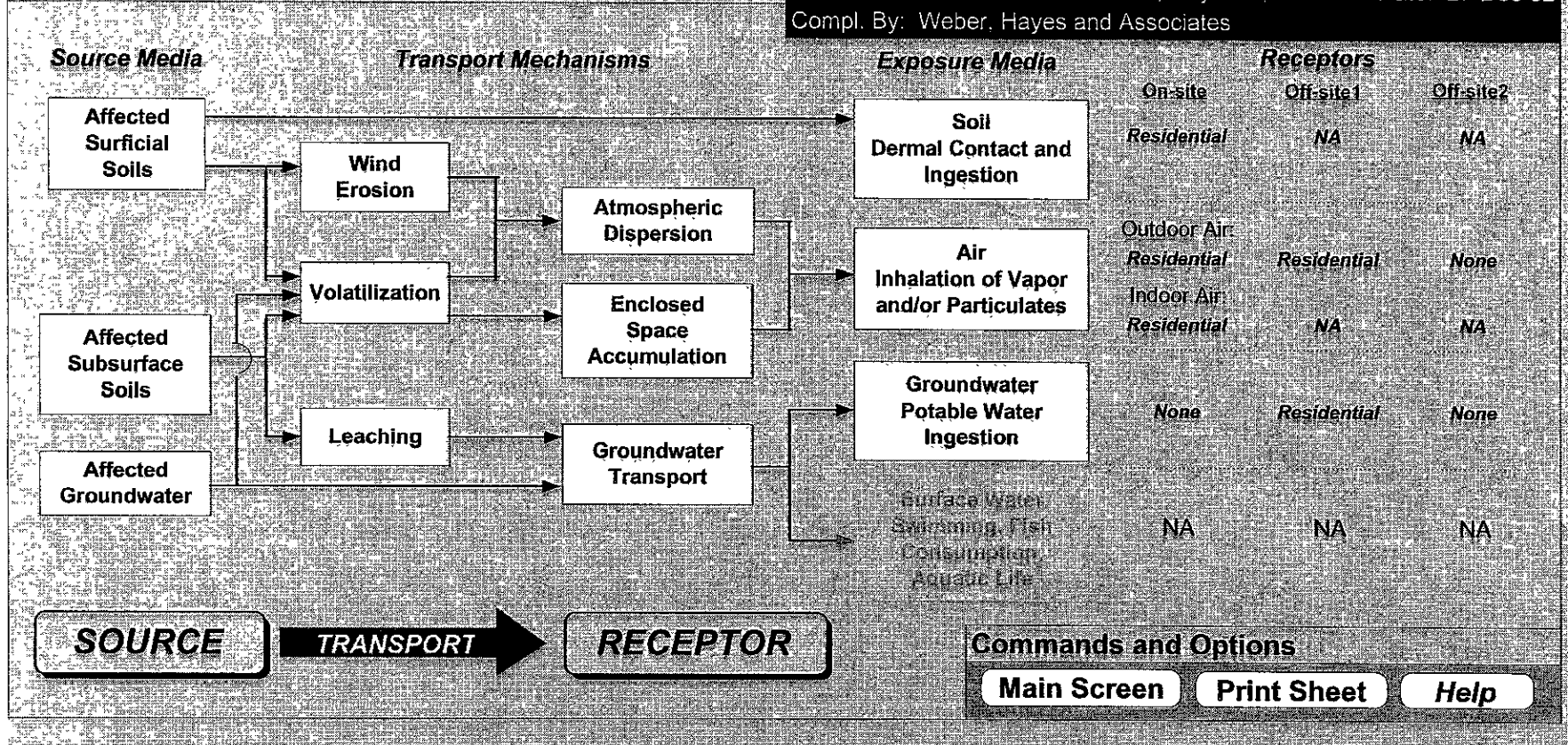
CONSTITUENTS OF CONCERN		Mass Fractions		Representative Concentrations		Calculated Concentration Limits		Applicable SSTL Values	
		Soil (-)	Groundwater (-)	Soil (mg/kg)	Groundwater (mg/L)	Residual Soil Concentration (mg/kg)	Solubility (mg/L)	Soils (0 - 23 ft) (mg/kg)	Groundwater (mg/L)
CAS No.	Name								
0-00-0	TPH - Arom >C08-C10	1.0E+0	1.0E+0	2.0E-1	4.3E-1	1.0E+3	6.5E+1	3.8E+1	7.0E+0
<b>Total</b>		1.0E+0	1.0E+0	2.0E-1	4.3E-1	<b>Total TPH SSTL value</b>			

">" indicates risk-based target concentration greater than constituent residual saturation value. NC = Not calculated.

# Exposure Pathway Flowchart

Site Name: Harbert Transportation  
 Location: 19984 Meekland Avenue, Hayward, CA  
 Compl. By: Weber, Hayes and Associates

Job ID: H9042.C  
 Date: 27-Dec-02



# RBCA SITE ASSESSMENT

## Input Parameter Summary

Site Name: Harbert Transportation  
 Site Location: 19984 Meekland Avenue, Hayward, CA

Completed By: Weber, Hayes and Associates  
 Date Completed: 27-Dec-02

Job ID: H9042 C

1 OF 1

Exposure Parameters		Residential		Commercial/Industrial	
		Adult	(1-16 yrs)	Chronic	Construction
AT <sub>c</sub>	Averaging time for carcinogens (yr)	70			
AT <sub>n</sub>	Averaging time for non-carcinogens (yr)	30		25	1
BW	Body weight (kg)	70	15	70	
ED	Exposure duration (yr)	30	6	25	1
t	Averaging time for vapor flux (yr)	30		25	1
EF	Exposure frequency (days/yr)	350		250	180
EF <sub>D</sub>	Exposure frequency for dermal exposure	350		250	
IR <sub>w</sub>	Ingestion rate of water (L/day)	2		1	
IR <sub>s</sub>	Ingestion rate of soil (mg/day)	100	200	50	100
SA	Skin surface area (dermal) (cm <sup>2</sup> )	5800		5800	5800
M	Soil to skin adherence factor	1			
ET <sub>swim</sub>	Swimming exposure time (hr/event)	3			
EV <sub>swim</sub>	Swimming event frequency (events/yr)	12	12	12	
IR <sub>swim</sub>	Water ingestion while swimming (L/hr)	0.05	0.5		
SA <sub>swim</sub>	Skin surface area for swimming (cm <sup>2</sup> )	23000		8100	
IR <sub>fish</sub>	Ingestion rate of fish (kg/yr)	0.025			
F <sub>fish</sub>	Contaminated fish fraction (unitless)	1			

Surface Parameters		General	Construction	(Units)
A	Source zone area	1.6E+3	NA	(ft <sup>2</sup> )
W	Length of source-zone area parallel to wind	4.0E+1	NA	(ft)
W <sub>gw</sub>	Length of source-zone area parallel to GW flow	4.0E+1		(ft)
U <sub>air</sub>	Ambient air velocity in mixing zone	7.4E+0		(ft/s)
S <sub>air</sub>	Air mixing zone height	6.6E+0		(ft)
P <sub>a</sub>	Areal particulate emission rate	6.9E-14		(g/cm <sup>2</sup> /s)
L <sub>soil</sub>	Thickness of affected surface soils	5.0E+0		(ft)

Surface Soil Column Parameters		Value	(Units)	
h <sub>cap</sub>	Capillary zone thickness	1.6E-1	(ft)	
h <sub>v</sub>	Vadose zone thickness	2.3E+1	(ft)	
ρ <sub>s</sub>	Soil bulk density	1.7E+0	(g/cm <sup>3</sup> )	
f <sub>oc</sub>	Fraction organic carbon	1.0E-2	(-)	
θ <sub>T</sub>	Soil total porosity	3.8E-1	(-)	
K <sub>vs</sub>	Vertical hydraulic conductivity	2.8E+1	(ft/d)	
K <sub>v</sub>	Vapor permeability	1.1E-11	(ft <sup>2</sup> )	
L <sub>gw</sub>	Depth to groundwater	2.3E+1	(ft)	
L <sub>s</sub>	Depth to top of affected soils	0.0E+0	(ft)	
L <sub>base</sub>	Depth to base of affected soils	2.3E+1	(ft)	
L <sub>sub</sub>	Thickness of affected soils	2.3E+1	(ft)	
pH	Soil/groundwater pH	6.8E+0	(-)	
		capillary	vadose	foundation
θ <sub>v</sub>	Volumetric water content	0.342	0.12	0.12
θ <sub>a</sub>	Volumetric air content	0.038	0.26	0.26

Complete Exposure Pathways and Receptors	On-site	Off-site 1	Off-site 2
Groundwater			
Groundwater Ingestion	None	Residential	None
Soil Leaching to Groundwater Ingestion	None	Residential	None
Applicable Surface Water Exposure Routes:			
Swimming			NA
Fish Consumption			NA
Aquatic Life Protection			NA
Soil:			
Direct Ingestion and Dermal Contact	Residential		
Outdoor Air:			
Particulates from Surface Soils	Residential	Residential	None
Volatilization from Soils	Residential	Residential	None
Volatilization from Groundwater	Residential	Residential	None
Indoor Air:			
Volatilization from Subsurface Soils	Residential	NA	NA
Volatilization from Groundwater	Residential	NA	NA

Building Parameters		Residential	Commercial	(Units)
L <sub>b</sub>	Building volume/area ratio	6.56E+0	NA	(ft)
A <sub>b</sub>	Foundation area	7.53E+2	NA	(ft <sup>2</sup> )
X <sub>crk</sub>	Foundation perimeter	1.12E+2	NA	(ft)
ER	Building air exchange rate	1.40E-4	NA	(1/s)
L <sub>crk</sub>	Foundation thickness	4.92E-1	NA	(ft)
Z <sub>crk</sub>	Depth to bottom of foundation slab	4.92E-1	NA	(ft)
η	Foundation crack fraction	1.00E-2	NA	(-)
dP	Indoor/outdoor differential pressure	0.00E+0	NA	(psi)
Q <sub>c</sub>	Convective air flow through slab	0.00E+0	NA	(ft <sup>3</sup> /s)

Receptor Distance from Source Media	On-site	Off-site 1	Off-site 2	(Units)
Groundwater receptor	NA	250	NA	(ft)
Soil leaching to groundwater receptor	NA	250	NA	(ft)
Outdoor air inhalation receptor	0	75	NA	(ft)

Groundwater Parameters		Value	(Units)
δ <sub>gw</sub>	Groundwater mixing zone depth	2.0E+1	(ft)
I <sub>i</sub>	Net groundwater infiltration rate	4.1E+0	(in/yr)
U <sub>gw</sub>	Groundwater Darcy velocity	2.2E-1	(ft/d)
V <sub>gw</sub>	Groundwater seepage velocity	5.9E-1	(ft/d)
K <sub>s</sub>	Saturated hydraulic conductivity	2.2E+1	(ft/d)
i	Groundwater gradient	1.0E-2	(-)
S <sub>w</sub>	Width of groundwater source zone	4.0E+1	(ft)
S <sub>z</sub>	Depth of groundwater source zone	2.0E+1	(ft)
θ <sub>eff</sub>	Effective porosity in water-bearing unit	3.8E-1	(-)
f <sub>oc, sat</sub>	Fraction organic carbon in water-bearing unit	1.0E-3	(-)
pH <sub>sat</sub>	Groundwater pH	6.2E+0	(-)
	Biodegradation considered?	No	(-)

Target Health Risk Values		Individual	Cumulative
TR <sub>ad</sub>	Target Risk (class A&B carcinogens)	1.0E-6	1.0E-5
TR <sub>c</sub>	Target Risk (class C carcinogens)	1.0E-5	
THQ	Target Hazard Quotient (non-carcinogenic risk)	1.0E+0	1.0E+0

Transport Parameters		Off-site 1	Off-site 2	Off-site 1	Off-site 2	(Units)
Lateral Groundwater Transport		Groundwater Ingestion		Soil Leaching to GW		
α <sub>x</sub>	Longitudinal dispersivity	2.5E+1	NA	2.5E+1	NA	(ft)
α <sub>y</sub>	Transverse dispersivity	8.3E+0	NA	8.3E+0	NA	(ft)
α <sub>z</sub>	Vertical dispersivity	1.3E+0	NA	1.3E+0	NA	(ft)
Lateral Outdoor Air Transport		Soil to Outdoor Air Inhal.		GW to Outdoor Air Inhal.		
σ <sub>y</sub>	Transverse dispersion coefficient	8.6E+0	NA	8.6E+0	NA	(ft)
σ <sub>z</sub>	Vertical dispersion coefficient	5.8E+0	NA	5.8E+0	NA	(ft)
ADF	Air dispersion factor	1.1E+0	NA	1.1E+0	NA	(-)

Modeling Options		
RBCA tier		Tier 2
Outdoor air volatilization model		Surface & subsurface models
Indoor air volatilization model		Johnson & Ettinger model
Soil leaching model		ASTM leaching model
Use soil attenuation model (SAM) for leachate?		No
Air dilution factor		3-D Gaussian dispersion
Groundwater dilution-attenuation factor		Domenico model

Surface Water Parameters		Off-site 2	(Units)
Q <sub>sw</sub>	Surface water flowrate	NA	(ft <sup>3</sup> /s)
W <sub>pl</sub>	Width of GW plume at SW discharge	NA	(ft)
θ <sub>pl</sub>	Thickness of GW plume at SW discharge	NA	(ft)
DF <sub>sw</sub>	Groundwater-to-surface water dilution factor	NA	(-)

NOTE: NA = Not applicable

<b>RBCA SITE ASSESSMENT</b>	<b>Baseline Risk Summary-All Pathways</b>
-----------------------------	---

Site Name: Harbert Transportation  
 Site Location: 19984 Meekland Avenue, Hayward, CA

Completed By: Weber, Hayes and Associates  
 Date Completed: 27-Dec-02

<b>TIER 2 BASELINE RISK SUMMARY TABLE</b>										
<b>EXPOSURE PATHWAY</b>	<b>BASELINE CARCINOGENIC RISK</b>					<b>BASELINE TOXIC EFFECTS</b>				
	<b>Individual COC Risk</b>		<b>Cumulative COC Risk</b>		<b>Risk Limit(s) Exceeded?</b>	<b>Hazard Quotient</b>		<b>Hazard Index</b>		<b>Toxicity Limit(s) Exceeded?</b>
	<b>Maximum Value</b>	<b>Target Risk</b>	<b>Total Value</b>	<b>Target Risk</b>		<b>Maximum Value</b>	<b>Applicable Limit</b>	<b>Total Value</b>	<b>Applicable Limit</b>	
<b>OUTDOOR AIR EXPOSURE PATHWAYS</b>										
<b>Complete:</b>	2.0E-9	1.0E-6	2.8E-9	1.0E-5	<input type="checkbox"/>	1.1E-4	1.0E+0	1.7E-4	1.0E+0	<input type="checkbox"/>
<b>INDOOR AIR EXPOSURE PATHWAYS</b>										
<b>Complete:</b>	7.7E-7	1.0E-6	1.6E-6	1.0E-5	<input type="checkbox"/>	6.7E-2	1.0E+0	1.2E-1	1.0E+0	<input type="checkbox"/>
<b>SOIL EXPOSURE PATHWAYS</b>										
<b>Complete:</b>	6.6E-9	1.0E-6	1.4E-8	1.0E-5	<input type="checkbox"/>	2.0E-4	1.0E+0	2.9E-4	1.0E+0	<input type="checkbox"/>
<b>GROUNDWATER EXPOSURE PATHWAYS</b>										
<b>Complete:</b>	2.4E-7	1.0E-6	3.9E-7	1.0E-5	<input type="checkbox"/>	4.2E-2	1.0E+0	4.6E-2	1.0E+0	<input type="checkbox"/>
<b>SURFACE WATER EXPOSURE PATHWAYS</b>										
<b>Complete:</b>	NA	NA	NA	NA	<input type="checkbox"/>	NA	NA	NA	NA	<input type="checkbox"/>
<b>CRITICAL EXPOSURE PATHWAY (Maximum Values From Complete Pathways)</b>										
	7.7E-7	1.0E-6	1.6E-6	1.0E-5	<input type="checkbox"/>	6.7E-2	1.0E+0	1.2E-1	1.0E+0	<input type="checkbox"/>
	<i>Indoor Air</i>		<i>Indoor Air</i>			<i>Indoor Air</i>		<i>Indoor Air</i>		

**RBCA SITE ASSESSMENT**

**Cumulative Risk Worksheet**

Site Name: Harbert Transportation

Completed By: Weber, Hayes and Associates

Job ID: H9042.C

Site Location: 19984 Meekland Avenue, Hayward, CA

Date Completed: 27-Dec-02

1 OF 3

**CUMULATIVE RISK WORKSHEET**

CONSTITUENTS OF CONCERN		Representative Concentration		Proposed CRF		Resultant Target Concentration	
CAS No.	Name	Soil (mg/kg)	Groundwater (mg/L)	Soil	GW	Soil (mg/kg)	Groundwater (mg/L)
0-00-0	TPH - Arom >C08-C10	2.0E-1	4.3E-1	<1	<1	2.0E-1	4.3E-1
71-43-2	Benzene	4.2E-3	2.7E-3	<1	<1	4.2E-3	2.7E-3
108-88-3	Toluene	4.6E-3	4.3E-3	<1	<1	4.6E-3	4.3E-3
100-41-4	Ethylbenzene	6.1E-3	9.5E-3	<1	<1	6.1E-3	9.5E-3
1330-20-7	Xylene (mixed isomers)	1.0E-2	9.9E-3	<1	NA	1.0E-2	9.9E-3
107-06-2	Dichloroethane, 1,2-	4.1E-3	1.6E-3	<1	<1	4.1E-3	1.6E-3
127-18-4	Tetrachloroethene	2.5E-3	2.5E-4	<1	<1	2.5E-3	2.5E-4
79-01-6	Trichloroethene	2.5E-3	2.5E-4	<1	<1	2.5E-3	2.5E-4

**Cumulative Values:**

<b>RBCA SITE ASSESSMENT</b>	<b>Cumulative Risk Worksheet</b>
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Site Name: Harbert Transportation      Site Name: Harbert Transportation      Completed By: Weber, Hayes and Associates      Job ID: H9042.C  
 Site Location: 19984 Meekland Avenue, Hayward, CA      Site Location: 19984 Meekland Avenue, Hayward, CA      Date Completed: 27-Dec-02

<b>CUMULATIVE RISK WORKSHEET</b>	Cumulative Target Risk: 1.0E-5      Target Hazard Index: 1.0E+0
----------------------------------	---

**ON-SITE RECEPTORS**

CONSTITUENTS OF CONCERN		Outdoor Air Exposure:		Indoor Air Exposure:		Soil Exposure:		Groundwater Exposure:	
		Residential		Residential		Residential		None	
CAS No.	Name	Target Risk: 1.0E-6 / 1.0E-5	Target HQ: 1.0E+0	Target Risk: 1.0E-6 / 1.0E-5	Target HQ: 1.0E+0	Target Risk: 1.0E-6 / 1.0E-5	Target HQ: 1.0E+0	Target Risk: 1.0E-6 / 1.0E-5	Target HQ: 1.0E+0
		Carcinogenic Risk	Hazard Quotient	Carcinogenic Risk	Hazard Quotient	Carcinogenic Risk	Hazard Quotient	Carcinogenic Risk	Hazard Quotient
0-00-0	TPH - Arom >C08-C10		1.1E-4		6.7E-2		2.0E-4		
71-43-2	Benzene	7.5E-10	3.6E-5	7.7E-7	3.7E-2	2.2E-9	5.7E-5		
108-88-3	Toluene		6.5E-7		4.6E-4		1.2E-6		
100-41-4	Ethylbenzene		4.2E-7		2.2E-4		2.6E-6		
1330-20-7	Xylene (mixed isomers)		8.2E-8		4.1E-5		2.3E-7		
107-06-2	Dichloroethane, 1,2-	2.0E-9	1.8E-5	7.2E-7	6.5E-3	6.6E-9			
127-18-4	Tetrachloroethene	2.7E-11	3.1E-6	2.9E-8	3.3E-3	2.3E-9	1.0E-5		
79-01-6	Trichloroethene	8.3E-11	5.4E-6	8.5E-8	5.5E-3	3.1E-9	1.7E-5		
<i>Cumulative Values:</i>		<b>2.8E-9</b>	<b>1.7E-4</b>	<b>1.6E-6</b>	<b>1.2E-1</b>	<b>1.4E-8</b>	<b>2.9E-4</b>	<b>0.0E+0</b>	<b>0.0E+0</b>

■ indicates risk level exceeding target risk



**RBCA SITE ASSESSMENT**

**Cumulative Risk Worksheet**

Site Name: Harbert Transportation

Site Name: Harbert Transportation

Completed By: Weber, Hayes and Associates

Job ID: H9042.C

Site Location: 19984 Meekland Avenue, Hayward, CA Date Completed: 27-Dec-02

3 OF 3

**CUMULATIVE RISK WORKSHEET**

Cumulative Target Risk: 1.0E-5 Target Hazard Index: 1.0E+0

Groundwater DAF Option: Domenico - No Decay

**OFF-SITE RECEPTORS**

CONSTITUENTS OF CONCERN		Outdoor Air Exposure:				Groundwater Exposure:			
		Residential (75 ft)		None		Residential (250 ft)		None	
		Target Risk: 1.0E-6 / 1.0E-5	Target HQ: 1.0E+0	Target Risk: 1.0E-6 / 1.0E-5	Target HQ: 1.0E+0	Target Risk: 1.0E-6 / 1.0E-5	Target HQ: 1.0E+0	Target Risk: 1.0E-6 / 1.0E-5	Target HQ: 1.0E+0
CAS No.	Name	Carcinogenic Risk	Hazard Quotient	Carcinogenic Risk	Hazard Quotient	Carcinogenic Risk	Hazard Quotient	Carcinogenic Risk	Hazard Quotient
0-00-0	TPH - Arom >C08-C10		9.9E-5				4.2E-2		
71-43-2	Benzene	6.8E-10	3.2E-5			1.3E-7	3.5E-3		
108-88-3	Toluene		5.8E-7				8.2E-5		
100-41-4	Ethylbenzene		3.7E-7				3.7E-4		
1330-20-7	Xylene (mixed isomers)		7.3E-8				1.9E-5		
107-06-2	Dichloroethane, 1,2-	1.8E-9	1.6E-5			2.4E-7			
127-18-4	Tetrachloroethene	2.4E-11	2.8E-6			2.2E-8	9.7E-5		
79-01-6	Trichloroethene	7.5E-11	4.9E-6			4.5E-9	1.6E-4		
<b>Cumulative Values:</b>		<b>2.5E-9</b>	<b>1.6E-4</b>	<b>0.0E+0</b>	<b>0.0E+0</b>	<b>3.9E-7</b>	<b>4.6E-2</b>	<b>0.0E+0</b>	<b>0.0E+0</b>

■ indicates risk level exceeding target risk



**Weber, Hayes & Associates**  
Hydrogeology and Environmental Engineering  
120 Westgate Dr., Watsonville, CA 95076  
(831) 722-3580 (831) 662-3100  
Fax: (831) 722-1159

## Letter of Transmittal

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**to:** Mr. Jerry Harbert  
46765 Mountain Cove Drive  
Indian Wells, California 92210

**from:** Craig Drizin

**re:** Harbert Transportation, 19984 Meekland Avenue, Hayward, California

**date:** January 9, 2001

<i>Number of Copies</i>	<i>Date of Documents</i>	<i>Description</i>
1	December 27, 2002	Groundwater Monitoring Report - Third Quarter 2002

**c:** Mr. Amir K. Gholami  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502 - 6577

Mr. Jeff Lawson  
Silicon Valley Law Group  
152 N. Third Street, Suite 900  
San Jose, California 95112

Ms. Laurie Berger  
905 Emerald Hill Road  
Redwood City, California 94061

Mr. Gregg Petersen  
Durham Transportation  
9011 Mountain Ridge Drive, Travis Building, Suite 200  
Austin, Texas 78759 - 7275

Mr. Chuck Headlee  
San Francisco Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, California 94612

## Appendix B

### Field Methodologies for Groundwater Monitoring

Weber, Hayes and Associates' groundwater monitoring field methodology is based on procedures specified in the *LUFT Field Manual*. The first step in groundwater well sampling is for Weber, Hayes and Associates field personnel to measure the depth-to-groundwater to the nearest hundredth (0.01) of a foot with an electric sounder. If the well appears to be pressurized, or the groundwater level is fluctuating, measurements are made until the groundwater levels stabilizes, and a final depth-to groundwater measurement is taken and recorded. After the depth-to-groundwater is measured, the well is then checked for the presence of free product with a clear, disposable polyethylene bailer. If free product is present, the thickness of the layer is recorded, and the product is bailed to a sheen. All field data (depth-to-groundwater, well purge volume, physical parameters, and sampling method) is recorded on field data sheets (see attached). Because removing free product may skew the data, wells that contain free product are not used in groundwater elevation and gradient calculations.

After measuring the depth-to-groundwater, each well, starting with the cleanest well (based on analytical results from the last sampling event), is purged with a low flow submersible electric pump. During purging the physical parameters of temperature, conductivity, pH, dissolved oxygen (D.O.) concentration, and Oxidation-Reduction Potential (ORP) of the purge water are monitored with a QED MP20 Micropurge Flow-Through-Cell and Meter to insure that these parameters have stabilized (are within ~ 15 percent of the previous measurement). The QED MP20 Meter is capable of contiguously monitoring the physical parameters of the purge water via the flow through cell and providing an alarm to indicate when the physical parameters have stabilized to the users specifications. Purging is determined to be complete (stabilized aquifer conditions reached) after the removal of approximately three to five well volumes of water or when the physical parameters have stabilized. Dissolved oxygen and ORP measurements are used as an indicator of intrinsic bioremediation within the contaminant plume. All field instruments are calibrated before use.

All purge water is stored on site in DOT-approved, 55-gallon drums for disposal by a state-licensed contractor pending laboratory analysis for fuel hydrocarbons.

After purging, the water level in the well is allowed to recover to 80 percent of its original depth before a sample is collected. After water level recovery, a groundwater sample is collected from each well with a new, disposable bailer, and decanted into the appropriate laboratory-supplied sample container(s). The sample containers at this site were 40-ml. vials. Each vial was filled until a convex meniscus formed above the vial rim, then sealed with a Teflon<sup>®</sup>-septum cap, and inverted to insure that there were no air bubbles or head space in the vial. All samples are labeled in the field and transported in insulated containers cooled with blue ice to state-certified laboratories under proper chain of custody procedures.

All field and sampling equipment is decontaminated before, between, and after measurements or sampling by washing in an Liqui-Nox and tap water solution, rinsing with tap water, and rinsing with distilled water.



# Weber, Hayes & Associates

## Hydrogeology and Environmental Engineering

120 Westgate Dr., Watsonville, CA 95076

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Fax: (831) 722-1159

INDICATE ATTACHMENTS THAT APPLY

- 6 Data Sheets
- 1 COC's
- Site Map
- Photo Sheet
- 1 Chargeable Materials

<b>Job Name:</b> Harbert Transportation	<b>Date:</b> 8/27/02
<b>Field Location:</b> 19984 Meekland Avenue, Hayward	<b>Study #:</b> H9042.Q
<b>Field Tasks:</b> <input type="checkbox"/> Drilling <input checked="" type="checkbox"/> Sampling <input checked="" type="checkbox"/> Other 3 <sup>rd</sup> Quarter 2002 Well Sampling	<b>Weather Conditions:</b> Clear + Warm
<b>Personnel/Company onsite:</b> (Weber, Hayes and Associates) Chad Taylor	

**FIELD WORK PLANNING:** Performed on: 8/26/02

Meet with project manager: X yes, or no.

Number of wells to be sampled: **Five Wells, with D.O. in all wells**  
Sample wells: MW-3, 5, 6, 9, 10, for TPH-g, BTEX, and MTBE.

Proposed sampling date: 8/27/02

**TIME:** 0750

Arrive onsite to perform 3<sup>rd</sup> Quarter Monitoring Well Sampling.

**COMMENTS:**

Send all analytical to Entech Analytical Laboratory.

**INITIALS:**

- All sampling is conducted according to Standard Operating Procedure (SOP) 10I/
- Water Quality Sampling Information for each well sampled is recorded on following pages:
- Upon sampling, all samples are placed immediately in coolers containing blue ice.
- After sampling each well all equipment is decontaminated according to SOP 10B/.
- All purge water is properly disposed in 55-gallon drums to be purged at a later date.
- All samples are recorded on field Chain-of-Custody Sheets for transport to Laboratory.

**BEGIN CALIBRATION:**

QED MP20 Flow Through Cell: Temp = 17.3°C, pH = 7.05 & 10.05, EC = 1413%, Barometric Pressure = 470  
D.O. % Saturation = 100%, ORP = N/A

**BEGIN SAMPLING ALL WELLS:**

MW-3 MW-6 MW-10 MW-5 MW-9 \_\_\_\_\_

-See information below for general monitoring well information this sampling round.

**COMMENTS:**

All well will be purged until the QED MP20 unit indicates that the water quality parameters (pH, Conductivity, Temp, D.O., and ORP) have stabilized to within ~ 15 % or once four casing volumes in the column requiring sampling have been removed(see Water Quality Sampling Field Forms for details). Wells will be purged from bottom-up and will follow standard operating procedures by WHA. Wells will be sampled using a bladder pump, or disposable bailer.

[Signature] 8/27/02  
Signature of Field Personnel & Date



# Weber, Hayes & Associates

Hydrogeology and Environmental Engineering

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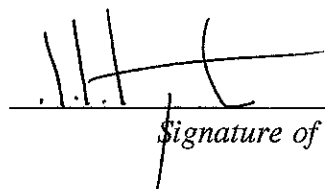
Location	GW Depth (TOC)	Total Depth of Well	D.O. (mg/L)	ORP (mV)	Floating Product (comments).
MW-3	23.87'	40'	0.13	<del>700</del> 216	NoFP, Very Slight Odor
MW-4	24.07'	40'	0.21	187	NoFP, No Odor
MW-5	24.42'	45'	0.43	207	NoFP, Mod-High Odor
MW-6	24.44'	45'	0.14	<del>699</del> 231	NoFP, Very Slight Odor
MW-7	24.98'	40'	0.22	369	NoFP, No Odor
MW-8	24.48'	40'	1.98	402	NoFP, No Odor
MW-9	23.69'	40'	0.18	<del>701</del> 154	NoFP, Slight Odor
MW-10	25.46'	40'	0.14	183	NoFP, Slight Odor
MW-11	23.68'	40'	0.13	369	NoFP, No Odor
MW-12	24.68'	40'	0.60	410	NoFP, No Odor
<del>CT 8/27/02</del>					

HOW MANY PURGE DRUMS WERE LEFT ONSITE 6. APPROXIMATE GAL. 100.

CALL BAYSIDE OIL ON \_\_\_\_\_ TO HAVE DRUMS PURGED.

DRUMS WILL BE PURGED ON \_\_\_\_\_.

COMMENTS:

 8/27/02  
 Signature of Field Personnel & Date

# GROUNDWATER MONITORING WELL SAMPLING INFORMATION

Project Name/No.: Herbert Transportation / H9042-Q Date: 8/27/02

Sample No.: MW-3 Sample Location: MW-3

Samplers Name: Chad Taylor Recorded by: CT

**Purge Equipment:**  
 \_\_\_\_\_ Bailer: Disposable or Acrylic  
X Whaler # 2  
 \_\_\_\_\_ Bladder Pump  
 \_\_\_\_\_ Submersible Pump

**Sample Equipment:**  
 \_\_\_\_\_ X \_\_\_\_\_ Disposable Bailer  
 \_\_\_\_\_ Whaler # \_\_\_\_\_  
 \_\_\_\_\_ Bladder Pump  
 \_\_\_\_\_ Submersible Pump

**Analyses Requested (circle all that apply):**  
TPH-gas, BTEX, MTBE, 1,2-DCA, EDB, 9260 Fuel Oxygenates  
~~TPH-diesel, Stoddard Solvent~~  
~~Intrinsic Bio. Parameters~~

**Number and Types of Bottle Used:**  
5 x 40-LITER'S w/HCl

**Well Number:** MW-3 **Well Diameter:** 2" with Casing Volume of:  
**Depth to Water:** 23.87' TOC 2" = (0.16 Gallon/Feet)  
**Well Depth:** 40' BGS or TOC 4" = (0.65 Gallon/Feet)  
**Height W-Column:** 16.13' feet (well depth - depth to water) 5" = (1.02 Gallon/Feet)  
**Volume in Well:** 2-5808 gallons (casing volume X height) 6" = (1.47 Gallon/Feet)  
**Gallons to purge:** 10.32 gallons (volume X 4) 8" = (2.61 Gallon/Feet)

Lab: Entech Transportation: Deliver

Time (24 hr.)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	ORP (mV)	Turbidity: Color, Fines	Micropurge Parameters Stabilized
0841	0	18.63	0.704	8.13	6.84	317	Modest: Gray-Brown, Modest Fines	
0844	2	18.97	0.709	3.81	7.00	224	Low: Clear-Gray, Minor Fines	
0847	4	18.78	0.702	0.58	7.01	221	Low: Clear, Trace Fines	
0849	6	18.79	0.702	0.19	7.00	220	↓	
0851	8	18.79	0.702	0.16	6.99	219	↓	
0853	10	18.80	0.700	0.13	7.00	216	↓	✓
STOP - Parameters Stabilized. Purge Complete.								
CT 8/27/02								

**Wait for 80% well volume recovery prior to sampling.**

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of original well volume:  
 Original Height of Water Column =  $16.13' \times 0.8 = 12.904'$  - (Well Depth) 40' = Depth to water 27.096'

Time: 0855 1st measured depth to water, 23.97' feet below Is well within 80% of original well casing volume: Yes  No   
 Time: CT 1st measured depth to water, CT feet below Is well within 80% of original well casing volume: Yes  No   
 Time: CT 1st measured depth to water, CT feet below Is well within 80% of original well casing volume: Yes  No

### Sample Well

Time: 0855 Sample ID: MW-3 Depth: 23.97' feet below TOC

Comments: No Floating Product. Very Slight Odor.

# GROUNDWATER MONITORING WELL SAMPLING INFORMATION

Project Name/No.: Harbert Transportation / H9012.0 Date: 8/27/00

Sample No.: MW-6 Sample Location: MW-6

Samplers Name: Chad Taylor Recorded by: CT

Purge Equipment: \_\_\_\_\_ Bailer: Disposable or Acrylic  
X Whaler # 2  
 \_\_\_\_\_ Bladder Pump  
 \_\_\_\_\_ Submersible Pump

Sample Equipment: \_\_\_\_\_ X Disposable Bailer  
 \_\_\_\_\_ Whaler # \_\_\_\_\_  
 \_\_\_\_\_ Bladder Pump  
 \_\_\_\_\_ Submersible Pump

Analyses Requested (circle all that apply):  
TPH-gas, BTEX, MTBE, 2-DGA, EDB, 8260-Fuel Oxygenates  
TPH-diesel, Stoddard-Solvent

Number and Types of Bottle Used: 5x10mL VOA's w/HCl

Intrinsic Bio. Parameters \_\_\_\_\_

Well Number: MW-6 Well Diameter: 4" with Casing Volume of:  
 Depth to Water: 24.44' TOC 2" = (0.16 Gallon/Feet)  
 Well Depth: 45' BGS or TOC 4" = (0.65 Gallon/Feet)  
 Height W-Column: 20.56' feet (well depth - depth to water) 5" = (1.02 Gallon/Feet)  
 Volume in Well: 13.364 gallons (casing volume X height) 6" = (1.47 Gallon/Feet)  
 Gallons to purge: 53.46 gallons (volume X 4) 8" = (2.61 Gallon/Feet)

Lab: Entech Transportation: Deliver

Time (24 hr.)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	ORP (mV)	Turbidity: Color, Fines	Micropurge Parameters Stabilized
0914	0	19.04	0.674	7.21	6.98	230	High Gray-Brown, Many Fines	
0916	2	18.64	0.678	0.84	6.84	276	Low: Clear-Gray, Minor Fines	
0919	4	18.67	0.677	0.45	6.86	290	Low: Clear, Trace Fines	
0923	8	18.89	0.672	0.20	6.90	299	↓ ↓ ↓ ↓ ↓	
0928	12	18.91	0.684	0.14	6.93	278		
0934	16	18.92	0.685	0.13	6.93	249		
0938	20	18.94	0.684	0.14	6.94	231		
0942	22	18.93	0.684	0.14	6.94	231		✓
STOP - Parameters Stabilized, Purge Complete.								

**Wait for 80% well volume recovery prior to sampling.**  
 Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of original well volume:  
 Original Height of Water Column =  $20.56' \times 0.8 = 16.448'$  - (Well Depth) 45' = Depth to water 28.55'

Time: 0945 1st measured depth to water, 25.0' feet below ✓ Is well within 80% of original well casing volume: Yes  No   
 Time: 10 1st measured depth to water, 19 feet below ✓ Is well within 80% of original well casing volume: Yes  No   
 Time: 10 1st measured depth to water, 19 feet below ✓ Is well within 80% of original well casing volume: Yes  No

### Sample Well

Time: 0945 Sample ID: MW-6 Depth: 25.0' feet below TOC

Comments: No Floating Product. Very Slight Odor

# GROUNDWATER MONITORING WELL SAMPLING INFORMATION

Project Name/No.: Harbert Transportation / H9042-Q Date: 8/27/02

Sample No.: MW-9 Sample Location: MW-9

Samplers Name: Chad Taylor Recorded by: CT

**Purge Equipment:**  
 \_\_\_\_\_ Bailer: Disposable or Acrylic  
X Whaler # 3  
 \_\_\_\_\_ Bladder Pump  
 \_\_\_\_\_ Submersible Pump

**Sample Equipment:**  
 \_\_\_\_\_ X Disposable Bailer  
 \_\_\_\_\_ Whaler # \_\_\_\_\_  
 \_\_\_\_\_ Bladder Pump  
 \_\_\_\_\_ Submersible Pump

**Analyses Requested (circle all that apply):**  
TPH-gas, BTEX, MTBE, 1, 2-DCA, EDB, 6200 Fuel Oxygenates  
~~TPH-diesel~~, ~~Stoddard Solvent~~  
~~Intrinsic Bio. Parameters~~

**Number and Types of Bottle Used:**  
5x40ml UVA<sub>3</sub> w/HCl

Well Number: MW-1 Well Diameter: 4" with Casing Volume of:  
 Depth to Water: 23.61' TOC 2" = (0.16 Gallon/Feet)  
 Well Depth: 40' BGS or TOC 4" = (0.65 Gallon/Feet)  
 Height W-Column: 16.31' feet (well depth - depth to water) 5" = (1.02 Gallon/Feet)  
 Volume in Well: 10.6015' gallons (casing volume X height) 6" = (1.47 Gallon/Feet)  
 Gallons to purge: 42.41 gallons (volume X 4) 8" = (2.61 Gallon/Feet)

Lab: Entech Transportation: Deliver

Time (24 hr.)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	ORP (mV)	Turbidity: Color, Fines	Micropurge Parameters Stabilized
1008	0	19.07	0.595	7.35	6.97	177	High: Black, Many Fines	
1010	2	19.11	0.621	2.01	7.05	177	Low: Clear, Trace Fines	
1013	4	19.19	0.621	1.20	7.08	189	↓	
1016	6	19.21	0.620	0.86	7.09	180	↓	
1023	10	19.27	0.620	0.53	7.08	172	↓	
1031	15	19.32	0.625	0.30	7.05	160	↓	
1040	20	19.37	0.630	0.18	7.01	154	↓	✓
STOP - Parameters Stabilized. Purge Complete.								

**Wait for 80% well volume recovery prior to sampling.**

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of original well volume:

Original Height of Water Column = 16.31' x 0.8 = 13.048' (Well Depth) 40' = Depth to water 26.95'

Time: 1044 1st measured depth to water, 23.77' feet below

Is well within 80% of original well casing volume: Yes  No

Time: \_\_\_\_\_ 1st measured depth to water, \_\_\_\_\_ feet below

Is well within 80% of original well casing volume: Yes  No

Time: 1049 1st measured depth to water, 19' feet below

Is well within 80% of original well casing volume: Yes  No

## Sample Well

Time: 1044 Sample ID: MW-9 Depth: 23.77' feet below TOC

Comments: No Floating Product. Slight Odor.



# GROUNDWATER MONITORING WELL SAMPLING INFORMATION

Project Name/No.: Harbert Transportation / 119042.0 Date: 8/27/02

Sample No.: MW-5 Sample Location: MW-5

Samplers Name: Chad Taylor Recorded by: CT

Purge Equipment: X Bailer: Disposable or Acrylic  
X Whaler # 3  
 Bladder Pump  
 Submersible Pump

Sample Equipment:  
X Disposable Bailer  
 Whaler # \_\_\_\_\_  
 Bladder Pump  
 Submersible Pump

Analyses Requested (circle all that apply):  
~~(PH-gas) BTEX MTBE 1,2-DGA, EDB, 8260 Fuel Oxygenates~~  
~~TPH diesel, Stoddard Solvent~~

Number and Types of Bottle Used:  
5 x 40 mL WH's w/ HCl

Intrinsic Bio-Parameters

Well Number: MW-5 Well Diameter: 4" with Casing Volume of:  
 Depth to Water: 29.42' TOC 2" = (0.16 Gallon/Feet  
 Well Depth: 45' BGS or TOC 4" = (0.65 Gallon/Feet  
 Height W-Column: 20.58' feet (well depth - depth to water) 5" = (1.02 Gallon/Feet  
 Volume in Well: 13.377 gallons (casing volume X height) 6" = (1.47 Gallon/Feet  
 Gallons to purge: 53.51 gallons (volume X 4) 8" = (2.61 Gallon/Feet

Lab: Entech Transportation: Deliver

Time (24 hr)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	ORP (mV)	Turbidity: Color, Fines	Micropurge Parameters Stabilized
1116	0	20.60	0.575	7.88	7.06	201	High: Gray, Many Fines	
1117	2	18.88	0.624	1.75	6.89	229	Low: Clear-Gray, Minor Fines	
1119	4	18.92	0.636	0.82	6.89	225	↓	
1121	6	18.95	0.646	0.53	6.91	216	↓	
1124	10	18.01	0.652	0.43	6.92	210	↓	
1128	15	19.04	0.654	0.43	6.93	207	↓	✓
STDP - Parameters Stabilized. Purge Complete.								
CT 8/27/02								

**Wait for 80% well volume recovery prior to sampling.**

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of original well volume:

Original Height of Water Column = 20.58' x 0.8 = 16.46' - (Well Depth) 45' = Depth to water 28.54'

Time: 1129 1st measured depth to water, 29.02' feet below  
 Time: 1131 1st measured depth to water, 28.23' feet below  
 Time: 1131 1st measured depth to water, 1131 feet below

Is well within 80% of original well casing volume: Yes \_\_\_\_\_ No ✓  
 Is well within 80% of original well casing volume: Yes ✓ No \_\_\_\_\_  
 Is well within 80% of original well casing volume: Yes \_\_\_\_\_ No CT

## Sample Well

Time: 1131 Sample ID: MW-5 Depth: 28.23' feet below TOC

Comments: No Floating Products Moderate-High Odors

# GROUNDWATER MONITORING WELL SAMPLING INFORMATION

Project Name/No.: Herbert Transportation / H 9042-Q Date: 8/27/02

Sample No.: MW-10 Sample Location: MW-10

Samplers Name: Chris Taylor Recorded by: CT

Purge Equipment: X Bailer: Disposable or Acrylic  
X Whaler # 3  
 Bladder Pump  
 Submersible Pump

Sample Equipment:  
X Disposable Bailer  
 Whaler #  
 Bladder Pump  
 Submersible Pump

Analyses Requested (circle all that apply):  
~~(TPH-gas, BTEX, MTBB, 1,2-DCA, EDB, 0260 Fuel Oxygenates)~~  
~~TPH diesel, Stoddard Solvent~~  
~~Intrinsic Bio. Parameters~~

Number and Types of Bottle Used:  
5 x 40 mL VOA's w/ HCl

Well Number: MW-10 Well Diameter: 4" with Casing Volume of:  
 Depth to Water: 23.46' TOC 2" = (0.16 Gallon/Feet)  
 Well Depth: 40' BGS or TOC 4" = (0.65 Gallon/Feet)  
 Height W-Column: 16.54' feet (well depth - depth to water) 5" = (1.02 Gallon/Feet)  
 Volume in Well: 10.751 gallons (casing volume X height) 6" = (1.47 Gallon/Feet)  
 Gallons to purge: 43.00 gallons (volume X 4) 8" = (2.61 Gallon/Feet)

Lab: Entech Transportation: Dartiver

Time (24 hr.)	Volume Purged (Gallons)	Temperature (°C)	Conductivity (ms/cm)	D.O. (ppm)	pH	ORP (mV)	Turbidity: Color, Fines	Micropurge Parameters Stabilized
1156	0	20.66	0.934	8.50	6.75	219	High: Gray-Brown, Moderate Fines	
1158	2	18.87	0.930	2.13	6.67	201	Low: Clear-Brown, Minor Fines	
1200	4	18.92	0.890	0.81	6.64	205	↓	
1201	6	18.95	0.887	0.54	6.64	186	↓	
1205	10	18.96	0.885	0.15	6.65	180	↓	
1208	15	18.96	0.879	0.14	6.67	183	↓	
STDP - Parameters			Stabilized Purge Complete					
/ CT 8/27/02								

**Wait for 80% well volume recovery prior to sampling.**

Calculate depth to water (from TOC), for 80% well volume recovery:

Calculate 80% of original well volume:  
 Original Height of Water Column = 16.54' x 0.8 = 13.232' - (Well Depth) 40' = Depth to water 26.77'

Time: 1211 1st measured depth to water, 23.48' feet below  Is well within 80% of original well casing volume: Yes  No

Time: 1211 1st measured depth to water, 23.48' feet below  Is well within 80% of original well casing volume: Yes  No

Time: 1219 1st measured depth to water, 19' feet below  Is well within 80% of original well casing volume: Yes  No

### Sample Well

Time: 1211 Sample ID: MW-10 Depth: 23.48' feet below TOC

Comments: No Fleecy Product. Slight Odor.

Groundwater Monitoring Report - Third Quarter 2002  
19984 Meekland Avenue, Hayward, California  
December 27, 2002

## **Appendix C**

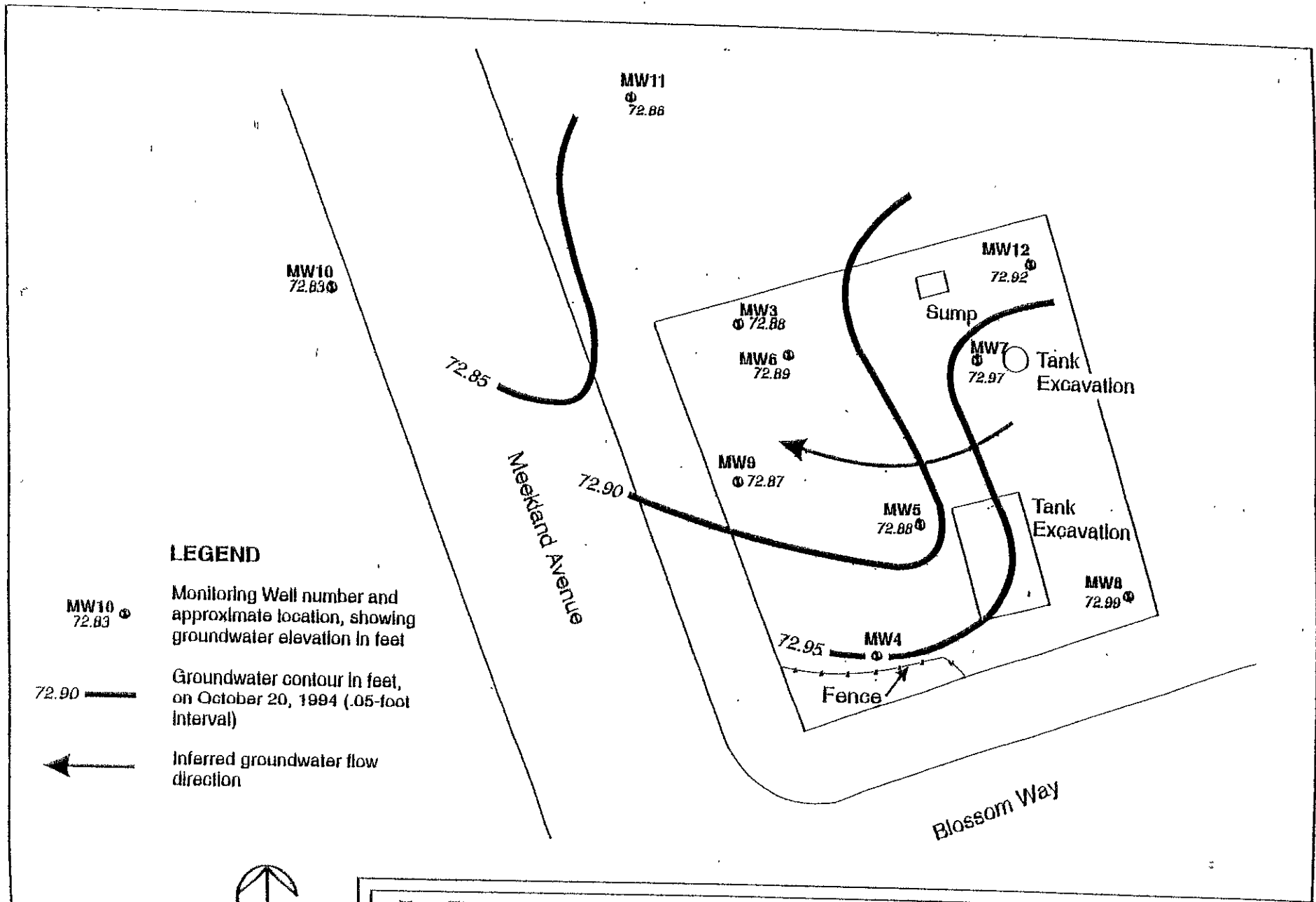
### **Summary of Historical Depth to Groundwater Measurements, Groundwater Elevations, and Groundwater Flow Direction - AGI Technologies, Inc.**

**Table 1**  
**Groundwater Elevation Data**  
Harbert Transportation/Meekland Avenue  
Hayward, California




Well Number	Date Sampled	Top of Casing Elevation (feet)	Depth to Groundwater (ft bgs)	Groundwater Elevation (feet)
MW3	10/20/94	100.00	27.12	72.88
	09/15/95		24.22	75.78
	03/14/96		19.02	80.98
	09/26/96		23.61	76.39
MW4	10/20/94	100.27	27.32	72.95
	09/15/95		24.42	75.85
	03/14/96		19.23	81.04
	09/26/96		23.85	76.42
MW5	10/20/94	100.59	27.71	72.88
	09/15/95		24.87	75.72
	03/14/96		19.95	80.64
	09/26/96		24.38	76.21
MW6	10/20/94	100.57	27.68	72.89
	09/15/95		24.79	75.78
	03/14/96		19.54	81.03
	09/26/96		24.20	76.37
MW7	10/20/94	101.22	28.25	72.97
	09/15/95		25.35	75.87
	03/14/96		20.06	81.16
	09/26/96		24.75	76.47
MW8	10/20/94	100.72	27.73	72.99
	09/15/95		24.81	75.91
	03/14/96		19.52	81.20
	09/26/96		24.13	76.59
MW9	10/20/94	99.77	26.90	72.87
	09/15/95		24.01	75.76
	03/14/96		18.80	80.97
	09/26/96		23.50	76.27
MW10	10/20/94	99.29	26.46	72.83
	09/15/95		23.79	75.50
	03/14/96		18.62	80.67
	09/26/96		23.30	75.99
MW11	10/20/94	99.75	26.89	72.86
	09/15/95		24.05	75.70
	03/15/96		18.79	80.96
	09/26/96		23.53	76.22
MW12	10/20/94	101.03	28.11	72.92
	09/15/95		25.19	75.84
	03/14/96		19.84	81.19
	09/26/96		24.57	76.46

Note:

ft bgs - Feet below ground surface.



**LEGEND**

- MW10 72.83  Monitoring Well number and approximate location, showing groundwater elevation in feet
- 72.90  Groundwater contour in feet, on October 20, 1994 (.05-foot interval)
-  Inferred groundwater flow direction

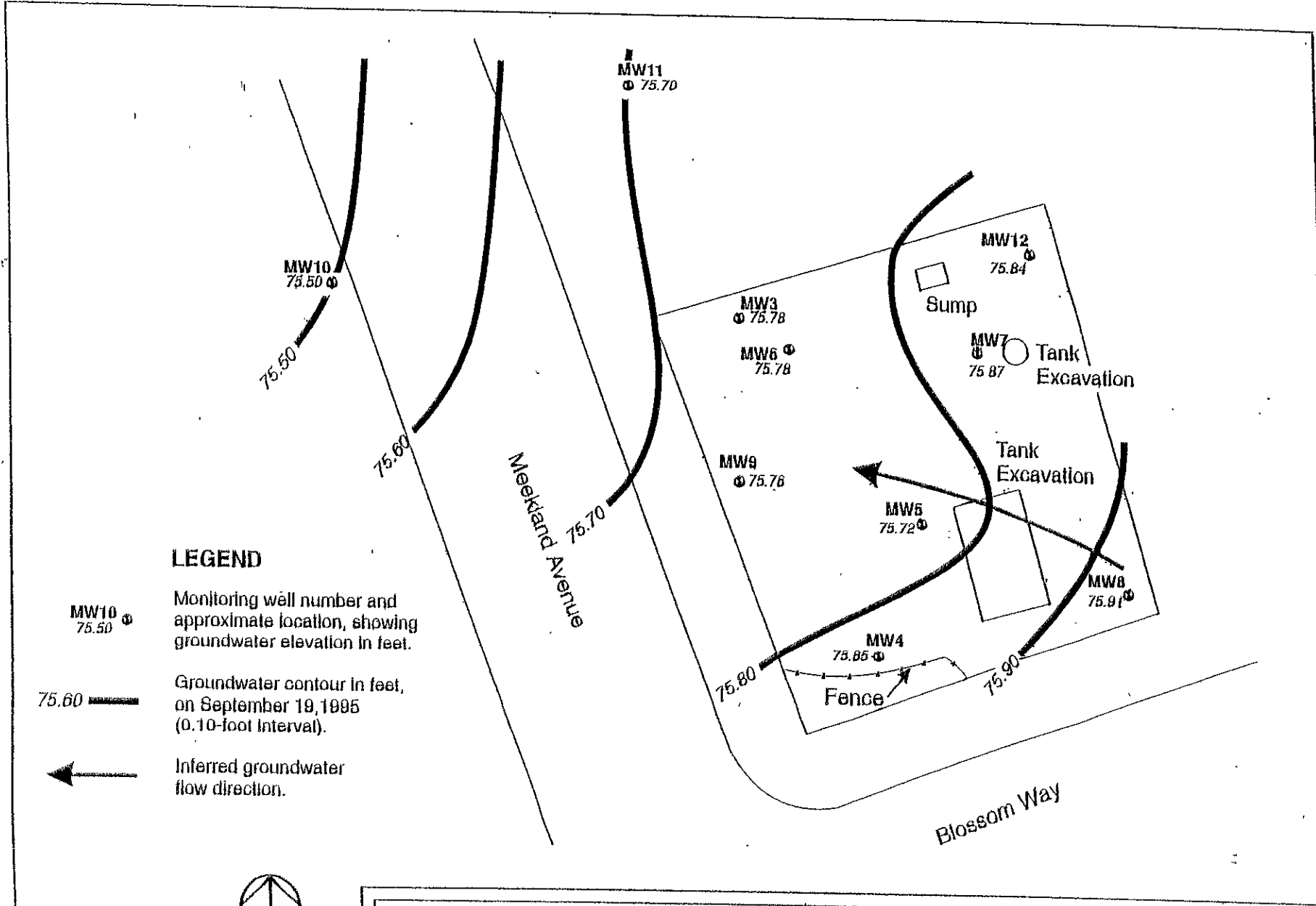


**AGI**  
TECHNOLOGIES

**Groundwater Elevation and Contour Map** 10/20/94 **FIGURE 3**

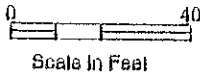
Harber Transportation/Meekland Avenue  
Hayward, California

PROJECT NO. 15-000-002 DRAWN DATE APPROVED REVISED DATE



**LEGEND**

- MW10 75.50
- Monitoring well number and approximate location, showing groundwater elevation in feet.
- 75.60
- Groundwater contour in feet, on September 19, 1995 (0.10-foot interval).
- 
- Inferred groundwater flow direction.



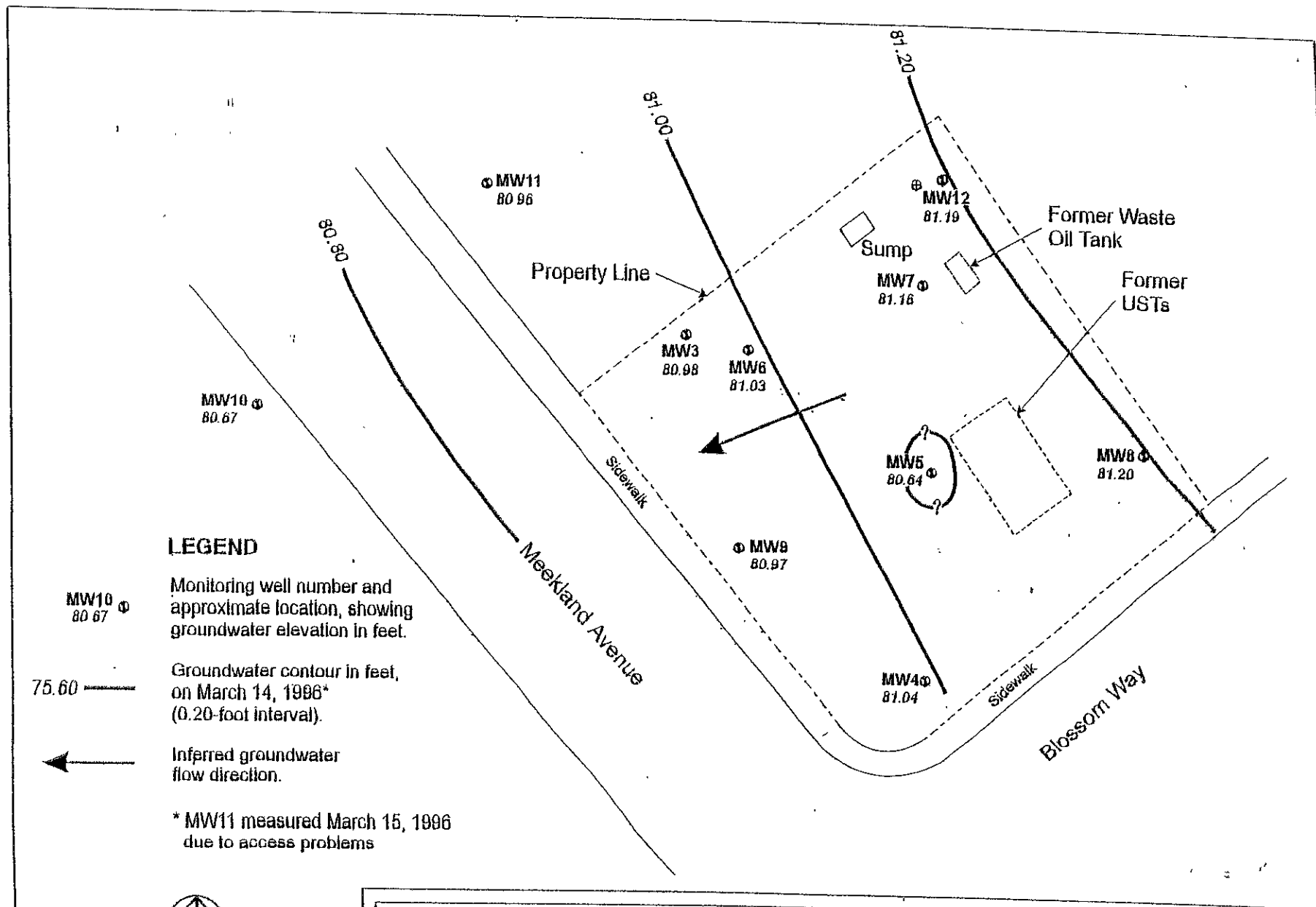
**AGI**  
TECHNOLOGIES

**Groundwater Elevation and Contour Map**  
Harbert Transportation/Meekland Avenue  
Hayward, California

9.19.95<sup>th</sup> FIGURE

**3**

PROJECT NO. \_\_\_\_\_ DRAWN \_\_\_\_\_ DATE \_\_\_\_\_ APPROVED \_\_\_\_\_ REVISED \_\_\_\_\_



**LEGEND**

MW10  
80.67

Monitoring well number and approximate location, showing groundwater elevation in feet.

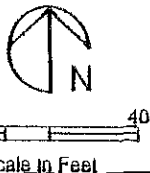
75.60

Groundwater contour in feet, on March 14, 1996\* (0.20-foot interval).



Inferred groundwater flow direction.

\* MW11 measured March 15, 1996 due to access problems



**AGI**  
TECHNOLOGIES

**Groundwater Elevation and Contour Map**

Harbert Transportation/Meekland Avenue  
Hayward, California

FIGURE

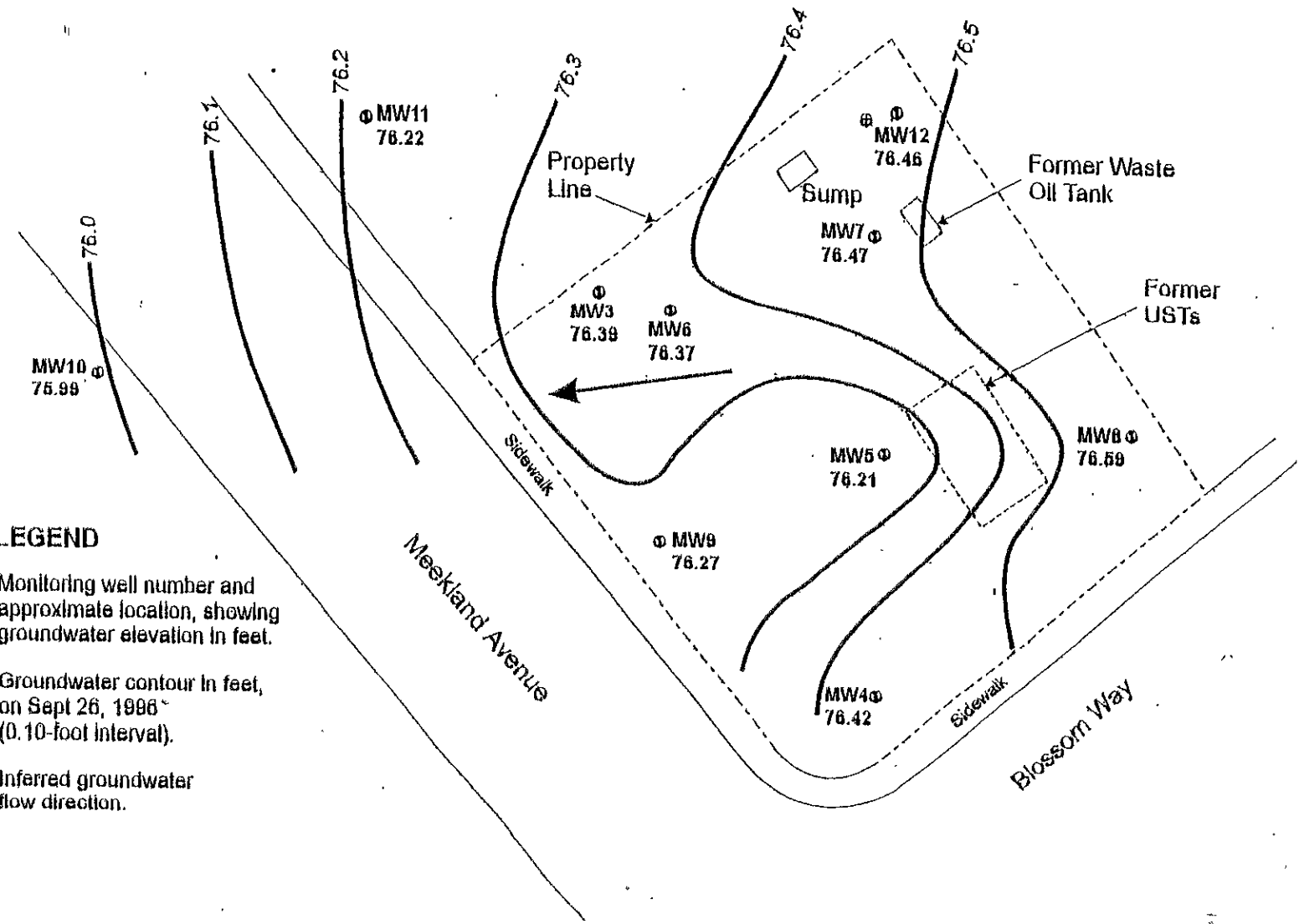
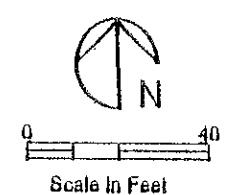
3.14.96

**3**

PROJECT NO. 15.833.002      DRAWN DEF      DATE 20 August 94      APPROVED      REVISED      DATE

**LEGEND**

- MW10  $\odot$   
75.99 Monitoring well number and approximate location, showing groundwater elevation in feet.
- 76.0 — Groundwater contour in feet, on Sept 26, 1986 (0.10-foot interval).
- ← Inferred groundwater flow direction.



	<b>Groundwater Elevation and Contour Map</b>		FIGURE
	Harbert Transportation/Meekland Avenue Hayward, California		9.26.96 <b>3</b>
PROJECT NO. 16.833.002	DRAWN OFF	DATE 29 August 04	APPROVED [Signature]
gw-sep86.cdi	REVISIONS	DATE	DATE



Groundwater Monitoring Report - Third Quarter 2002  
19984 Meekland Avenue, Hayward, California  
December 27, 2002

## **Appendix D**

### **Certified Analytical Report - Groundwater Samples**

# Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

September 09, 2002

Chad Taylor  
Weber, Hayes and Associates  
120 Westgate Drive  
Watsonville, CA 95076

<b>Order:</b> 31041	<b>Date Collected:</b> 8/27/2002
<b>Project Name:</b> Harbert Transportation	<b>Date Received:</b> 8/28/2002
<b>Project Number:</b> H9042.Q	<b>P.O. Number:</b> H9042.Q

**Project Notes:**

On August 28, 2002, samples were received under documented chain of custody. Results for the following analyses are attached:

<u>Matrix</u>	<u>Test</u>	<u>Method</u>
Liquid	EDF Deliverables	EDF
	Gas/BTEX/MTBE	EPA 8015 MOD. (Purgeable)
		EPA 8020
	MTBE by EPA 8260B	EPA 8260B
	PDF	PDF

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-588-0200.

Sincerely,



Patti Sandrock  
QA/QC Manager

# Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Weber, Hayes and Associates

120 Westgate Drive

Watsonville, CA 95076

Attn: Chad Taylor

Date: 9/9/02

Date Received: 8/28/2002

Project Name: Harbert Transportation

Project Number: H9042.Q

P.O. Number: H9042.Q

Sampled By: Chad Taylor

## Certified Analytical Report

Order ID: 31041

Lab Sample ID: 31041-001

Client Sample ID: MW-3

Sample Time:

Sample Date: 8/27/2002

Matrix: Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	0.56		1	0.5	0.5	µg/L	N/A	8/29/2002	WGC62554	EPA 8020
Toluene	1.1		1	0.5	0.5	µg/L	N/A	8/29/2002	WGC62554	EPA 8020
Ethyl Benzene	14		1	0.5	0.5	µg/L	N/A	8/29/2002	WGC62554	EPA 8020
Xylenes, Total	3.4		1	1	1	µg/L	N/A	8/29/2002	WGC62554	EPA 8020
			<b>Surrogate</b>			<b>Surrogate Recovery</b>			<b>Control Limits (%)</b>	
			4-Bromofluorobenzene			100.1			65 - 135	
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	8/29/2002	WGC62554	EPA 8020
			<b>Surrogate</b>			<b>Surrogate Recovery</b>			<b>Control Limits (%)</b>	
			4-Bromofluorobenzene			100.1			65 - 135	
Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	350		1	50	50	µg/L	N/A	8/29/2002	WGC62554	EPA 8015 MOD. (Purgeable)
			<b>Surrogate</b>			<b>Surrogate Recovery</b>			<b>Control Limits (%)</b>	
			4-Bromofluorobenzene			153.7			65 - 135	
			aaa-Trifluorotoluene			123.1			65 - 135	

Comment: Surrogate outside of control limits due to matrix interference.

DF = Dilution Factor

ND = Not Detected

DLR = Detection Limit Reported

PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

  
Patti Sandrock, QA/QC Manager

Environmental Analysis Since 1983

# Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Weber, Hayes and Associates  
 120 Westgate Drive  
 Watsonville, CA 95076  
 Attn: Chad Taylor

Date: 9/9/02  
 Date Received: 8/28/02  
 Project Name: Harbert Transportation  
 Project Number: H9042.Q  
 P.O. Number: H9042.Q  
 Sampled By: Chad Taylor

## Certified Analytical Report

Order ID: 31041      Lab Sample ID: 31041-002      Client Sample ID: MW-5  
 Sample Time:      Sample Date: 8/27/02      Matrix: Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	170		5	0.5	2.5	µg/L	N/A	8/29/02	WGC62554	EPA 8020
Toluene	14		5	0.5	2.5	µg/L	N/A	8/29/02	WGC62554	EPA 8020
Ethyl Benzene	210		5	0.5	2.5	µg/L	N/A	8/29/02	WGC62554	EPA 8020
Xylenes, Total	93		5	1	5	µg/L	N/A	8/29/02	WGC62554	EPA 8020

Surrogate      Surrogate Recovery      Control Limits (%)  
 4-Bromofluorobenzene      95.5      65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	9/4/02	WMS21691B	EPA 8260B

Surrogate      Surrogate Recovery      Control Limits (%)  
 4-Bromofluorobenzene      100.1      73 - 151  
 Dibromofluoromethane      113.9      57 - 156  
 Toluene-d8      93.8      77 - 150

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	1900		5	50	250	µg/L	N/A	8/29/02	WGC62554	EPA 8015 MOD. (Purgeable)

Surrogate      Surrogate Recovery      Control Limits (%)  
 4-Bromofluorobenzene      132.2      65 - 135

DF = Dilution Factor      ND = Not Detected      DLR = Detection Limit Reported      PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

  
 Patti Sandrock, QA/QC Manager

Environmental Analysis Since 1983



# Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Weber, Hayes and Associates  
 120 Westgate Drive  
 Watsonville, CA 95076  
 Attn: Chad Taylor

Date: 9/9/02  
 Date Received: 8/28/02  
 Project Name: Harbert Transportation  
 Project Number: H9042.Q  
 P.O. Number: H9042.Q  
 Sampled By: Chad Taylor

## Certified Analytical Report

Order ID: 31041

Lab Sample ID: 31041-004

Client Sample ID: MW-9

Sample Time:

Sample Date: 8/27/02

Matrix: Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	27		1	0.5	0.5	µg/L	N/A	8/29/02	WGC62554	EPA 8020
Toluene	2.5		1	0.5	0.5	µg/L	N/A	8/29/02	WGC62554	EPA 8020
Ethyl Benzene	20		1	0.5	0.5	µg/L	N/A	8/29/02	WGC62554	EPA 8020
Xylenes, Total	20		1	1	1	µg/L	N/A	8/29/02	WGC62554	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	93.7	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	8/30/02	WMS21689	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.9	73 - 151
Dibromofluoromethane	93.2	57 - 156
Toluene-d8	97.9	77 - 150

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	310		1	50	50	µg/L	N/A	8/29/02	WGC62554	EPA 8015 MOD (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	134.4	65 - 135

DF = Dilution Factor

ND = Not Detected

DLR = Detection Limit Reported

PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

  
 Patti Sandrock, QA/QC Manager

Environmental Analysis Since 1983

# Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Weber, Hayes and Associates  
120 Westgate Drive  
Watsonville, CA 95076  
Attn: Chad Taylor

Date: 9/9/02  
Date Received: 8/28/02  
Project Name: Harbert Transportation  
Project Number: H9042.Q  
P.O. Number: H9042.Q  
Sampled By: Chad Taylor

## Certified Analytical Report

Order ID: 31041      Lab Sample ID: 31041-005      Client Sample ID: MW-10  
Sample Time:      Sample Date: 8/27/02      Matrix: Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		5	0.5	2.5	µg/L	N/A	8/29/02	WGC62554	EPA 8020
Toluene	15		5	0.5	2.5	µg/L	N/A	8/29/02	WGC62554	EPA 8020
Ethyl Benzene	3.9		5	0.5	2.5	µg/L	N/A	8/29/02	WGC62554	EPA 8020
Xylenes, Total	5.0		5	1	5	µg/L	N/A	8/29/02	WGC62554	EPA 8020

Surrogate      Surrogate Recovery      Control Limits (%)  
4-Bromofluorobenzene      132.0      65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	5	5	µg/L	N/A	8/30/02	WMS21689	EPA 8260B

Surrogate      Surrogate Recovery      Control Limits (%)  
4-Bromofluorobenzene      97.1      73 - 151  
Dibromofluoromethane      93.5      57 - 156  
Toluene-d8      97.3      77 - 150

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	1800		5	50	250	µg/L	N/A	8/29/02	WGC62554	EPA 8015 MOD. (Purgeable)

Surrogate      Surrogate Recovery      Control Limits (%)  
4-Bromofluorobenzene      127.2      65 - 135

DF = Dilution Factor      ND = Not Detected      DLR = Detection Limit Reported      PQL = Practical Quantitation Limit  
Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

  
Patti Sandrock, QA/QC Manager

Environmental Analysis Since 1983

# Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

## Quality Control Results Summary

QC Batch #: WGC62554  
Matrix: Liquid

Units: µg/L  
Date Analyzed: 8/29/2002

Parameter	Method	Blank Result	Spike Sample ID	Spike Amount	Sample Result	Spike Result	QC Type	% Recovery	RPD	RPD Limits	Recovery Limits
<b>Test: TPH as Gasoline</b>											
TPH as Gasoline	EPA 8015 M	ND		100		95.2	LCS	95.2			65.0 - 135.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		96.4		65 - 135				
<b>Test: BTEX</b>											
Benzene	EPA 8020	ND		8		8.52	LCS	106.5			65.0 - 135.0
Ethyl Benzene	EPA 8020	ND		8		8.69	LCS	108.6			65.0 - 135.0
Toluene	EPA 8020	ND		8		8.57	LCS	107.1			65.0 - 135.0
Xylenes, total	EPA 8020	ND		24		26.6	LCS	110.8			65.0 - 135.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		96.3		65 - 135				
<b>Test: MTBE by EPA 8020</b>											
Methyl-t-butyl Ether	EPA 8020	ND		8		8.78	LCS	109.7			65.0 - 135.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		96.3		65 - 135				
<b>Test: TPH as Gasoline</b>											
TPH as Gasoline	EPA 8015 M	ND		100		94.	LCSD	94.0	1.27	25.00	65.0 - 135.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		98.3		65 - 135				
<b>Test: BTEX</b>											
Benzene	EPA 8020	ND		8		8.35	LCSD	104.4	2.02	25.00	65.0 - 135.0
Ethyl Benzene	EPA 8020	ND		8		8.5	LCSD	106.3	2.21	25.00	65.0 - 135.0
Toluene	EPA 8020	ND		8		8.3	LCSD	103.8	3.20	25.00	65.0 - 135.0
Xylenes, total	EPA 8020	ND		24		25.	LCSD	104.2	6.20	25.00	65.0 - 135.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		94.7		65 - 135				
<b>Test: MTBE by EPA 8020</b>											
Methyl-t-butyl Ether	EPA 8020	ND		8		8.49	LCSD	106.1	3.36	25.00	65.0 - 135.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		94.7		65 - 135				



# Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

## Quality Control Results Summary

QC Batch #: WMS21691B  
Matrix: Liquid

Units:  $\mu\text{g/L}$   
Date Analyzed: 9/4/2002

Parameter	Method	Blank Result	Spike Sample ID	Spike Amount	Sample Result	Spike Result	QC Type	% Recovery	RPD	RPD Limits	Recovery Limits
<b>Test: MTBE by EPA 8260B</b>											
Methyl-t-butyl Ether	EPA 8260B	ND		20		15.4687	LCS	77.3			65.0 - 135.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		96.4		73 - 151				
			Dibromofluoromethane		91.5		57 - 156				
			Toluene-d8		97.2		77 - 150				
<b>Test: MTBE by EPA 8260B</b>											
Methyl-t-butyl Ether	EPA 8260B	ND		20		17.4109	LCSD	87.1	11.81	25.00	65.0 - 135.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		94.9		73 - 151				
			Dibromofluoromethane		94.2		57 - 156				
			Toluene-d8		97.5		77 - 150				

# Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

## Quality Control Results Summary

QC Batch #: WMS21689  
Matrix: Liquid

Units: µg/L  
Date Analyzed: 8/30/2002

Parameter	Method	Blank Result	Spike Sample ID	Spike Amount	Sample Result	Spike Result	QC Type	% Recovery	RPD	RPD Limits	Recovery Limits
<b>Test: BTEX by EPA 8260B</b>											
Benzene	EPA 8260B	ND		20		23.4092	LCS	117.0			90.9 - 124.5
Toluene	EPA 8260B	ND		20		22.619	LCS	113.1			89.9 - 116.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		100.3		65 - 135				
			Dibromofluoromethane		97.0		57 - 156				
			Toluene-d8		86.4		77 - 150				
<b>Test: Oxygenates by EPA 8260B</b>											
Methyl-t-butyl Ether	EPA 8260B	ND		20		19.995	LCS	100.0			56.0 - 135.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		100.3		73 - 151				
			Dibromofluoromethane		97.0		57 - 156				
			Toluene-d8		86.4		77 - 150				
<b>Test: BTEX by EPA 8260B</b>											
Benzene	EPA 8260B	ND		20		22.2527	LCSD	111.3	5.07	25.00	90.9 - 124.5
Toluene	EPA 8260B	ND		20		21.256	LCSD	106.3	6.21	25.00	89.9 - 116.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		101.1		65 - 135				
			Dibromofluoromethane		98.2		57 - 156				
			Toluene-d8		85.8		77 - 150				
<b>Test: Oxygenates by EPA 8260B</b>											
Methyl-t-butyl Ether	EPA 8260B	ND		20		19.2345	LCSD	96.2	3.88	25.00	56.0 - 135.0
			<b>Surrogate</b>		<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>				
			4-Bromofluorobenzene		101.1		73 - 151				
			Dibromofluoromethane		98.2		57 - 156				
			Toluene-d8		85.8		77 - 150				



# Weber, Hayes & Associates

Hydrogeology and Environmental Engineering

120 Westgate Dr., Watsonville, CA 95076

(831) 722-3580 (831) 662-3100

Fax (831) 722-1159

# CHAIN -OF-CUSTODY RECORD

PAGE 1 OF 1

PROJECT NAME AND JOB #: Harbert Transporation / H9042.Q

LABORATORY: Entech

SEND CERTIFIED RESULTS TO: Chad Taylor

TURNAROUND TIME: Normal 24hr Rush 48hr Rush 72hr Rush

ELECTRONIC DELIVERABLE FORMAT  YES  NO

GLOBAL I D : T0600100475

Field Point Name (GeoTracker)	Sample Identification	Sample Depth	Date Sampled	SAMPLE CONTAINERS				REQUESTED ANALYSIS							
				40 mL VOAs (preserved)	1 Liter Amber Jars	___ mL Poly Bottle	Liner Acetate or Brass	Total Petroleum Hydrocarbons		Volatile Organics		Additional Analysis			
								Extractable Fuel-Scan	Purgeable Fuel-Scan	Gasoline & BTEX-MTBE by EPA Method# 8015M-8-8020	1,2-DCA by by EPA Method# 8010	Solvents by by EPA Method# 8010	Fuel Oxygenates by EPA Method 8260	Title 22. General, Physical and Inorganic Minerals	
MW-3	MW-3	23.97'	8/27/02	S						X					31041-001
MW-5	MW-5	23.25'	↓	S						X					002
MW-6	MW-6	25.08'	↓	S						X					003
MW-9	MW-9	25.77'	↓	S						X					004
MW-10	MW-10	25.48'	↓	S						X					005

**RECEIVED BY:**

1) Samplers J.H.T.

2) Joseph Machado

3) Joseph Machado

4) \_\_\_\_\_

5) \_\_\_\_\_

**Date & Time**

8/27/02 1300 →

8/27/02 8:10 →

8/28/02 9:35 →

\_\_\_\_\_ →

\_\_\_\_\_ →

**RELEASED BY:**

J.H.T.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Date & Time**

8/28/02

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**SAMPLE CONDITION:**  
(circle 1)

Ambient  Refrigerated  Frozen

Ambient  Refrigerated  Frozen

Ambient  Refrigerated  Frozen

Ambient  Refrigerated  Frozen

Ambient  Refrigerated  Frozen

**NOTES:**

If MTBE is detected by EPA Method 8020, please confirm detections by EPA Method 8260 with a minimum detection limit of 5 ug/L, and report only confirmed 8260 detections

For MTBE-analyzed samples with non-detectable results (ND) but having elevated detection limits, please confirm by EPA Method #8260

Please use MDL (Minimum Detection Limit) for any diluted samples

**ADDITIONAL COMMENTS**

- Please produce and e-mail an EDF of these results to [tina@weber-hayes.com](mailto:tina@weber-hayes.com).

Groundwater Monitoring Report - Third Quarter 2002  
19984 Meekland Avenue, Hayward, California  
December 27, 2002

## **Appendix E**

### **Summary of Historical Groundwater Analytical Results - AGI Technologies, Inc.**

**Table 2**  
**Summary of Historical Groundwater Analytical Data**  
 Harbert Transportation/Meekland Avenue  
 Hayward, California



Well	Date Sampled	EPA Test Methods										
		8015 Modified			8020				8010			Other
		TPH-G	TPH-D	TPH-MO	Benzene	Ethylbenzene	Toluene	Total Xylenes	TCE	PCE	1,2-DCA	
µg/L			µg/L				µg/L			µg/L		
MW1	07/86	42,000	NA	NA	5,500	NA	4,900	6,100	NA	NA	NA	
	03/90	27,000	NA	NA	2,700	491	840	800	ND	ND	ND	
	07/90	27,000	11,000	ND	4,000	ND	1,500	4,400	ND	ND	62	
	10/90	43,000	8,500	ND	3,400	1,200	2,700	5,300	0.4	ND	26	
	01/91	22,000	2,700	ND	3,000	990	1,800	2,600	ND	ND	27	
	04/91	42,000	3,100 <sup>a</sup>	NA	5,100	1,200	3,700	3,200	ND	ND	120	
	07/91	46,000	4,300 <sup>a</sup>	NA	6,500	830	2,900	3,700	ND	ND	64	
	10/91	27,000	4,300 <sup>a</sup>	NA	4,400	1,100	1,400	3,200	ND	ND	25	
	01/92	27,000	14,000 <sup>a</sup>	NA	3,300	1,200	1,600	3,800	ND	ND	24	
	04/92	33,000	11,000 <sup>a</sup>	NA	8,900	1,200	3,500	3,700	ND	ND	120	
07/92	41,000	19,000 <sup>a</sup>	NA	5,600	1,300	2,600	4,000	ND	ND	49		
10/92	33,000	3,500 <sup>a</sup>	NA	4,400	1,200	2,100	4,000	ND	ND	61		
MW3	11/89	29,000	NA	NA	4,600	680	1,100	1,100	ND	ND	36	Lead 40
	11/89	NA	NA	NA	NA	NA	NA	NA	ND	ND	36	Lead 40
	03/90	12,000	NA	NA	2,300	59	300	490	ND	ND	ND	
	07/90	7,300	990	ND	5,200	ND	440	480	ND	ND	67	
	10/90	6,200	970	ND	75	7.5	150	250	ND	ND	48	
	10/90	NA	NA	NA	NA	NA	NA	NA	ND	ND	22	Lead 3
	01/91	4,600	680	ND	2,200	220	110	89	ND	ND	40	
	04/91	8,300	640 <sup>a</sup>	NA	2,800	370	490	760	ND	ND	43	
	07/91	6,600	890 <sup>a</sup>	NA	2,000	250	230	380	ND	ND	29	
	10/91	6,300	1,700 <sup>a</sup>	NA	2,000	410	330	550	ND	ND	27	
	01/92	4,000	790 <sup>a</sup>	NA	1,200	250	60	200	ND	ND	22	
	04/92	7,400	1,800 <sup>a</sup>	NA	730	370	180	640	ND	ND	19	
	07/92	3,000	2,400 <sup>a</sup>	NA	190	ND	2.8	410	ND	ND	30	
	10/92	5,000	970 <sup>a</sup>	NA	1,300	320	45	340	ND	ND	26	
	01/93	2,300	680 <sup>a</sup>	NA (2)	630	180	31	330	ND	ND	13	
06/93	5,000	1,100 <sup>a</sup>	ND	730	240	43	380	ND	ND	13		

**Table 2**  
**Summary of Historical Groundwater Analytical Data**  
 Harbert Transportation/Meekland Avenue  
 Hayward, California



Well	Date Sampled	EPA Test Methods										Other µg/L
		8015 Modified			8020				8010			
		TPH-G µg/L	TPH-D µg/L	TPH-MO	Benzene µg/L	Ethylbenzene µg/L	Toluene µg/L	Total Xylenes µg/L	TCE µg/L	PCE µg/L	1,2-DCA µg/L	
MW4	11/89	ND	NA	NA	33	1.3	1	5.2	NA	NA	NA	Lead 12
	03/90	ND	NA	NA	7.4	2	2	1.1	ND	ND	ND	
	07/90	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.9	
	10/90	ND	ND	ND	ND	ND	ND	ND	0.7	ND	0.5	
	01/91	80	ND	ND	9.2	2.4	1.7	0.7	ND	ND	ND	
	04/91	1,400	130 <sup>a</sup>	NA	2,200	72	ND	17	ND	ND	ND	
	07/91	130	ND	NA	14	3.3	9.7	ND	ND	ND	0.81	
	10/91	ND	ND	NA	5.3	1	ND	0.8	ND	ND	ND	
	01/92	ND	ND	NA	6.8	1.3	ND	ND	ND	ND	ND	
	04/92	780	130 <sup>a</sup>	NA	ND	51	ND	4.8	ND	ND	1.6	
	07/92	ND	ND	NA	ND	ND	ND	ND	ND	ND	1.3	
	10/92	100	ND	NA	9.5	ND	ND	2.6	ND	ND	ND	
	01/93	960	240 <sup>a</sup>	NA	200	41	4.6	9.4	ND	ND	1	
	06/93	650	140 <sup>a</sup>	ND	150	21	ND	ND	ND	ND	3.7	
MW5	10/90	9,600	1,900	ND	1,200	70	160	520	ND	ND	22	Lead 3
	01/91	10,000	1,200	ND	1,600	720	200	510	ND	ND	33	
	04/91	18,000	860 <sup>a</sup>	NA	2,500	550	580	500	ND	ND	61	
	07/91	15,000	2,200 <sup>a</sup>	NA	4,800	610	1,100	760	ND	ND	62	
	10/91	14,000	3,300 <sup>a</sup>	NA	5,000	530	820	800	ND	ND	49	
	01/92	12,000	1,900 <sup>a</sup>	NA	4,300	390	380	590	ND	ND	56	
	04/92	23,000	6,400 <sup>a</sup>	NA	8,600	ND	2,600	1,900	ND	ND	125	
	07/92	27,000	5,900 <sup>a</sup>	NA	6,000	ND	1,500	1,600	ND	ND	93	
	10/92	13,000	2,100 <sup>a</sup>	NA	4,600	140	470	550	ND	ND	59	
	01/93	18,000	1,900 <sup>a</sup>	NA	5,800	560	1,900	1,600	ND	ND	110	
	01/93	19,000	2,100 <sup>a</sup>	NA	4,600	370	1,600	1,400	ND	ND	120	
	06/93	22,000	2,900 <sup>a</sup>	ND	8,300	740	2,500	1,900	ND	ND	110	
	06/93	23,000	2,300 <sup>a</sup>	ND	9,600	730	3,000	1,900	ND	ND	110	



Table 2  
 Summary of Historical Groundwater Analytical Data  
 Harbert Transportation/Meekland Avenue  
 Hayward, California

Well	Date Sampled	EPA Test Methods										
		8015 Modified			8020				8010			Other
		TPH-G	TPH-D	TPH-MO	Benzene	Ethylbenzene	Toluene	Total Xylenes	TCE	PCE	1,2-DCA	
µg/L			µg/L				µg/L			µg/L		
MW6	10/90	27,000	4,700	ND	2,700	450	2,900	3,300	ND	ND	40	Lead 9
	01/91	7,200	1,600	ND	1,400	ND	200	830	ND	ND	23	
	04/91	17,000	800	NA	2,800	610	1,200	1,800	ND	ND	53	
	07/91	11,000	1,400	NA	1,200	ND	380	750	ND	ND	29	
	10/91	4,800	1,600	NA	380	69	340	730	ND	ND	22	
	01/92	6,100	1,200	NA	460	180	200	590	ND	ND	26	
	04/92	7,200	1,800	NA	340	350	460	920	ND	ND	30	
	07/92	8,600	1,700	NA	1,300	380	280	1,100	ND	ND	35	
	10/92	1,600	110	NA	230	70	20	88	ND	ND	24	
	01/93	13,000	2,100	NA	2,500	370	540	2,400	ND	ND	36	
06/93	7,400	1,900	ND	1,500	480	120	1,400	ND	ND	29		
MW7	10/90	14,000	2,700	ND	390	ND	18	1,200	ND	1.3	14	Lead 11
	01/91	4,500	1,400	ND	320	42	48	350	ND	ND	10	
	04/91	2,400	NA	NA	320	77	62	130	ND	0.6	11	
	07/91	2,000	910	NA	470	ND	24	88	ND	ND	9.7	
	10/91	ND	370	NA	ND	ND	ND	ND	ND	0.68	4.5	
	01/92	1,100	290	NA	230	45	7	88	ND	3.5	6.4	
	04/92	1,700	520	NA	310	78	28	170	ND	0.5	3.2	
	07/92	1,900	590	NA	410	78	21	170	ND	2.1	8.7	
	07/92 (dup)	1,200	700	NA	21	1	2.6	90	ND	2	8.2	
	10/92	1,800	320	NA	410	31	11	75	ND	1	7.4	
	01/93	2,100	660	NA	390	100	21	270	ND	0.6	3.7	
	08/93	4,400	1,100	ND	830	330	49	620	ND	ND	8.8	



**Table 2**  
**Summary of Historical Groundwater Analytical Data**  
 Harbert Transportation/Meekland Avenue  
 Hayward, California

Well	Date Sampled	EPA Test Methods											
		8015 Modified			8020				8010			Other	
		TPH-G	TPH-D	TPH-MO	Benzene	Ethylbenzene	Toluene	Total Xylenes	TCE	PCE	1,2-DCA		
µg/L			µg/L				µg/L			µg/L			
MW8	02/91	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	
	04/91	ND	ND	NA	ND	ND	ND	ND	ND	ND	0.5	ND	
	07/91	ND	ND	NA	ND	ND	2	ND	ND	ND	1.2	ND	
	10/91	ND	ND	NA	ND	ND	0.6	ND	ND	ND	0.4	ND	
	01/92	ND	ND	NA	ND	ND	ND	ND	ND	ND	0.68	ND	
	04/92	ND	ND	NA	ND	ND	ND	ND	ND	ND	0.8	ND	
	07/92	ND	ND	NA	ND	ND	3.3	ND	ND	ND	1.6	ND	
	10/92	ND	ND	NA	ND	ND	ND	ND	ND	ND	1.4	ND	
	01/93	ND	ND	NA	ND	ND	ND	ND	ND	ND	0.8	ND	
	06/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	
MW9	02/91	6,000	1,600	NA	180	19	170	200	ND	ND		13	
	04/91	4,200	410	NA	520	130	410	580	ND	ND		28	
	07/91	1,900	180	NA	190	12	52	77	ND	6.5		12	
	10/91	880	300	NA	160	31	44	83	ND	ND		10	
	01/92	380	120	NA	14	7.6	2.2	14	ND	ND		9.6	
	04/92	2,900	700	NA	510	80	260	260	ND	ND		11	
	07/92	4,400	1,300	NA	860	210	340	640	ND	ND		22	
	10/92	200	290	NA	6.8	1.4	2.1	7.8	ND	ND		12	
	01/93	8,500	740	NA	2,400	390	620	1,500	ND	ND		29	
	06/93	8,200	1,300	ND	2,400	360	480	1,500	ND	ND		29	
MW10	01/92	13,000	3,700	NA	130	580	110	3,000	ND	ND		33	
	05/92	15,000	5,000	NA	180	ND	18	2,700	ND	ND		20	
	05/92 (dup)	13,000	7,500	NA	240	490	65	2,500	ND	ND		22	
	07/92	8,100	4,400	NA	74	360	ND	1,100	ND	ND		29	
	10/92	3,200	1,500	NA	ND	ND	ND	320	ND	ND		25	
	01/93	7,500	2,200	NA	130	170	20	710	ND	ND		18	
	06/93	8,000	2,100	ND	69	7.9	ND	490	ND	ND		16	



**Table 2**  
**Summary of Historical Groundwater Analytical Data**  
 Harbert Transportation/Meekland Avenue  
 Hayward, California

Well	Date Sampled	EPA Test Methods										
		8015 Modified			8020				8010			Other
		TPH-G	TPH-D	TPH-MO	Benzene	Ethylbenzene	Toluene	Total Xylenes	TCE	PCE	1,2-DCA	
µg/L			µg/L				µg/L			µg/L		
MW11	01/92	8,200	3,200 <sup>a</sup>	NA	23	250	ND	1,100	ND	ND	ND	
	04/92	180	1,200 <sup>a</sup>	NA	ND	ND	ND	ND	ND	ND	ND	
	07/92	2,100	710 <sup>a</sup>	NA	39	100	2.3	53	ND	ND	ND	
	10/92	860	220 <sup>a</sup>	NA	2.9	19	ND	3.8	ND	ND	ND	
	10/92	770	230 <sup>a</sup>	NA	3.2	26	ND	5.7	ND	ND	ND	
	01/93	780	370 <sup>a</sup>	NA	10	2.1	ND	39	ND	ND	ND	
	06/93	2,500	160 <sup>a</sup>	ND	27	89	ND	34	ND	ND	ND	
MW12	12/92	2,800	1,700 <sup>a</sup>	NA	14	ND	ND	ND	ND	ND	ND	
	06/93	1,100	750 <sup>a</sup>	ND	19	21	ND	57	ND	ND	ND	
B1	01/93	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	
	06/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
F3	02/93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Well Abandoned	12/89	1,800	NA	NA	200	24	18	34	ND	ND	0.15	Lead 2,100
Average <sup>b</sup>		8,865	1,883	250	1,582	235	517	871	0.21	0.41	24.8	
Laboratory Detection Limit		50	50	500	0.5	0.5	0.5	0.5	0.4	0.4	0.4	

Notes:

a) The detection for petroleum hydrocarbons as diesel appears to be due to the presence of lighter hydrocarbons rather than diesel.

b) Average of sampled data, ND equals 1/2 detection limit.

µg/L - Micrograms per liter is approximately equivalent to parts per billion, depending on density of water.

NA - Not analyzed.

ND - Not detected.

TPH-G - Total petroleum hydrocarbons quantified as gasoline.

TPH-D - Total petroleum hydrocarbons quantified as diesel.

TPH-MO - Total petroleum hydrocarbons quantified as motor oil.

TCE - Trichloroethylene.

PCE - Tetrachloroethylene.

1,2-DCA - 1,2-Dichloroethane.

**Table 2**  
**Summary of Groundwater Chemical Analyses**  
 Harbert Transportation/Meekland Avenue  
 Hayward, California

Well	Date Sampled	EPA Test Methods								
		8015 M		BETX 5030/8020				8010		
		TPH Gasoline	TPH Diesel	Benzene	Ethylbenzene	Toluene	Kylenes	1,2-DGA	PCE	TCE
		µg/L	µg/L	µg/L				µg/L	µg/L	µg/L
MW3	07/28/94	7,700	970 <sup>a</sup>	1,800	810	ND	600	22	ND	ND
	10/21/94	7,400	810	1,900	900	37	780	25	ND	ND
	09/15/95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	03/14/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	09/26/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW4	07/28/94	120	ND	7.9	0.7	1.1	ND	ND	ND	ND
	10/21/94	69	ND	3.4	ND	ND	ND	ND	ND	ND
	09/15/95	110	ND	2.5	ND	0.85	ND	2.3	ND	ND
	03/14/96	300	69 <sup>b</sup>	3.3	0.74	ND	ND	1.6	ND	ND
	09/26/96	ND	ND	ND	ND	ND	ND	1.2	ND	ND
MW5	07/29/94	30,000	2,200 <sup>a</sup>	9,300	1,100	1,800	2,300	110	ND	ND
	10/21/94	23,000	1,500	7,900	780	1,500	2,900	85	ND	ND
	09/15/95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	03/14/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	09/26/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW6	07/29/94	15,000	2,100 <sup>b</sup>	3,100	1,100	71	2,000	37	ND	ND
	10/21/94	18,000	1,500	3,900	1,200	170	3,200	35	ND	ND
	09/15/95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	03/14/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	09/26/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW7	07/29/94	2,600	530 <sup>c</sup>	470	220	ND	310	2.7	6	ND
	10/21/94	1,700	280	290	140	4.5	240	1.8	0.74	ND
	09/15/95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	03/14/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	09/26/96	NS	NS	NS	NS	NS	NS	NS	NS	NS

**Table 2**  
**Summary of Groundwater Chemical Analyses**  
 Harbert Transportation/Mackland Avenue  
 Hayward, California

Well	Date Sampled	EPA Test Methods								
		8015 M		BETX 8030/8020				8010		
		TPH Gasoline	TPH Diesel	Benzene	Ethylbenzene	Toluene	Xylenes	1,2-DCA	PCE	TCE
		µg/L	µg/L	µg/L				µg/L	µg/L	µg/L
MW8	07/28/94	ND	78 <sup>a</sup>	ND	ND	ND	ND	ND	ND	ND
	10/21/94	ND	ND	ND	ND	ND	ND	ND	0.72	ND
	09/15/95	ND	ND	ND	ND	ND	ND	ND	0.74	ND
	03/14/96	ND	ND	ND	ND	ND	ND	ND	0.63	ND
	09/26/96	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW9	07/28/94	6,000	1,300 <sup>c</sup>	90	170	27	370	26	ND	ND
	10/21/94	6,900	600	1,800	280	220	1,500	31	ND	ND
	09/15/95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	03/14/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	09/26/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW10	07/28/94	6,700	2,000 <sup>c</sup>	99	180	57	430	13	ND	ND
	10/21/94	8,600	2,000	93	200	ND	680	12	ND	ND
	09/15/95	2,100	1,900	9.9	49	ND	4.9	ND	ND	ND
	03/14/96	6,800	2,000 <sup>b</sup>	64	98	ND	33	6.5	ND	ND
	09/26/96	7,100	420	140	210	ND	32	9.1	ND	5.9
MW11	07/28/94	450	150 <sup>a</sup>	6.2	20	1.1	6.6	ND	ND	ND
	10/21/94	460	190	4.9	14	ND	12	ND	ND	ND
	09/15/95	9,600	550	130	180	ND	130	8.8	ND	5.6
	03/15/96	780	310 <sup>b</sup>	0.74	25	ND	1.8	ND	ND	ND
	09/26/96	480	710	ND	50	ND	ND	ND	ND	ND

**Table 2**  
**Summary of Groundwater Chemical Analyses**  
 Harbert Transportation/Meekland Avenue  
 Hayward, California

Well	Date Sampled	EPA Test Methods								
		8015 M		BETX 5030/8020				8010		
		TPH Gasoline µg/L	TPH Diesel µg/L	Benzene	Ethylbenzene	Toluene	Xylenes	1,2-DCA µg/L	PCE µg/L	TCE µg/L
MW12	07/28/94	240	160	1.9	12	ND	5.8	ND	ND	ND
	10/21/94	280	190	1.9	4.5	ND	6.8	ND	ND	ND
	09/15/95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	03/14/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	09/26/96	NS	NS	NS	NS	NS	NS	NS	NS	NS
Method Detection Limit		50	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5

**Notes:**

- a) Hydrocarbons quantified as diesel are primarily due to discrete peaks not indicative of diesel fuel.
- b) Hydrocarbons quantified as diesel are primarily due to the presence of a lighter petroleum product (C<sub>8</sub>-C<sub>12</sub>), possibly gasoline.
- c) Hydrocarbons quantified as diesel are due to the presence of a lighter petroleum product (C<sub>8</sub>-C<sub>12</sub>) and discrete peaks not indicative of diesel fuel.

1,2-DCE - 1,2-dichloroethane.

PCE - Tetrachloroethene.

TCE - Trichloroethene.

ND - Not detected at or above method detection limit.

NS - Not sampled.

TPH-Gasoline - Total petroleum hydrocarbons quantified as gasoline.

TPH-Diesel - Total petroleum hydrocarbons quantified as diesel.

µg/L - Micrograms per liter, equivalent to parts per billion.

B 93  
E 200  
T ND  
X 680  
TPH-G 8,600  
TPH-D 2,000  
1,2 DCA 12  
PCE ND

MW10

B 4.9  
E 14  
T ND  
X 12  
TPH-G 460  
TPH-D 190  
1,2 DCA ND  
PCE ND

MW11

B 1,900  
E 900  
T 37  
X 780  
TPH-G 7,400  
TPH-D 810  
1,2 DCA 25  
PCE ND

MW3

MW6

B 3,900  
E 1,200  
T 170  
X 3,200  
TPH-G 18,000  
TPH-D 1,500  
1,2 DCA 35  
PCE ND

MW12

B 1.9  
E 4.5  
T ND  
X 6.8  
TPH-G 260  
TPH-D 190  
1,2 DCA ND  
PCE ND

B 290  
E 140  
T 4.5  
X 240  
TPH-G 1,700  
TPH-D 280  
1,2 DCA 1.8  
PCE 0.74

B 1,800  
E 280  
T 220  
X 1,500  
TPH-G 6,900  
TPH-D 600  
1,2 DCA 31  
PCE ND

MW9

B 7,900  
E 780  
T 1,500  
X 2,900  
TPH-G 23,000  
TPH-D 1,500  
1,2 DCA 85  
PCE ND

MW5


B ND  
E ND  
T ND  
X ND  
TPH-G ND  
TPH-D ND  
1,2 DCA ND  
PCE 0.72

MW8

B 3.4  
E ND  
T ND  
X ND  
TPH-G 69  
TPH-D ND  
1,2 DCA ND  
PCE ND

MW4

**LEGEND**

MW10  Monitoring Well number and approximate location

All values expressed as µg/L - micrograms per liter

ND Not Detected above method detection limit

Meekland Avenue

Blossom Way

Sump

Tank Excavation

Tank Excavation

Fence



**AGI**  
TECHNOLOGIES

siteplan.cdr

PROJECT NO.  
15,833.002

DRAWN  
DFF/ALW

DATE  
01 February 95

APPROVED

REVISED

DATE

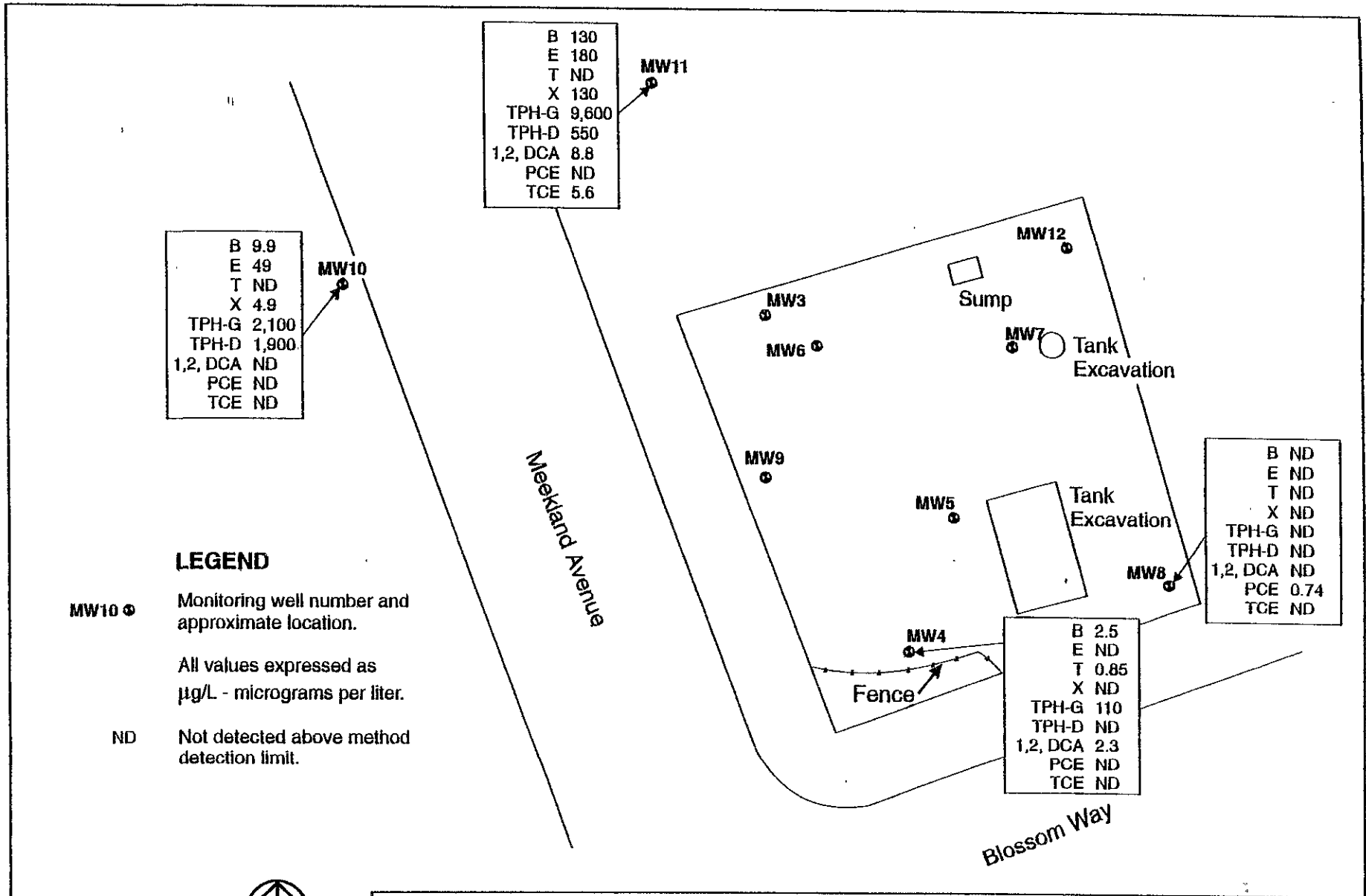
**Site Plan**

Harbert Transportation/Meekland Avenue  
Hayward, California

FIGURE

**4**

10.20.94



B	9.9
E	49
T	ND
X	4.9
TPH-G	2,100
TPH-D	1,900
1,2, DCA	ND
PCE	ND
TCE	ND

B	130
E	180
T	ND
X	130
TPH-G	9,600
TPH-D	550
1,2, DCA	8.8
PCE	ND
TCE	5.6

B	ND
E	ND
T	ND
X	ND
TPH-G	ND
TPH-D	ND
1,2, DCA	ND
PCE	0.74
TCE	ND

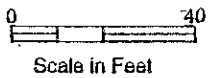
B	2.5
E	ND
T	0.85
X	ND
TPH-G	110
TPH-D	ND
1,2, DCA	2.3
PCE	ND
TCE	ND

**LEGEND**

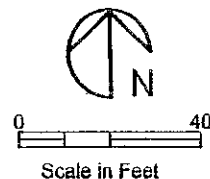
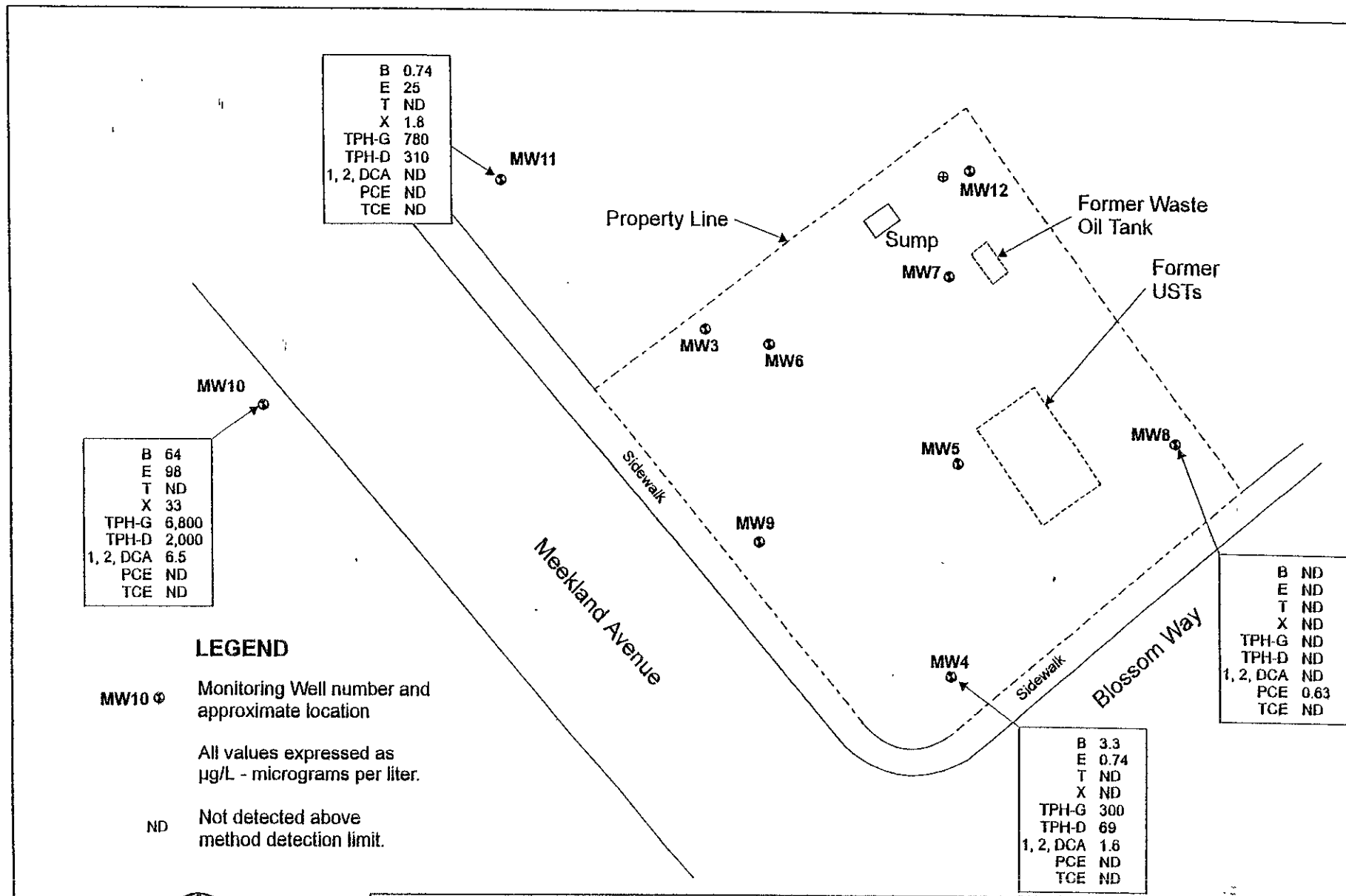
MW10 ● Monitoring well number and approximate location.

All values expressed as μg/L - micrograms per liter.

ND Not detected above method detection limit.



	<b>Groundwater Chemical Analysis Results - 9/15/95</b>				FIGURE
	Harbert Transportation/Meekland Avenue Hayward, California				<b>4</b>
PROJECT NO.	DRAWN	DATE	APPROVED	REVISED	DATE
83300201.cdr	DFF	1 Feb 95	<i>[Signature]</i>	BJA	8 Nov 95



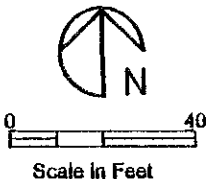
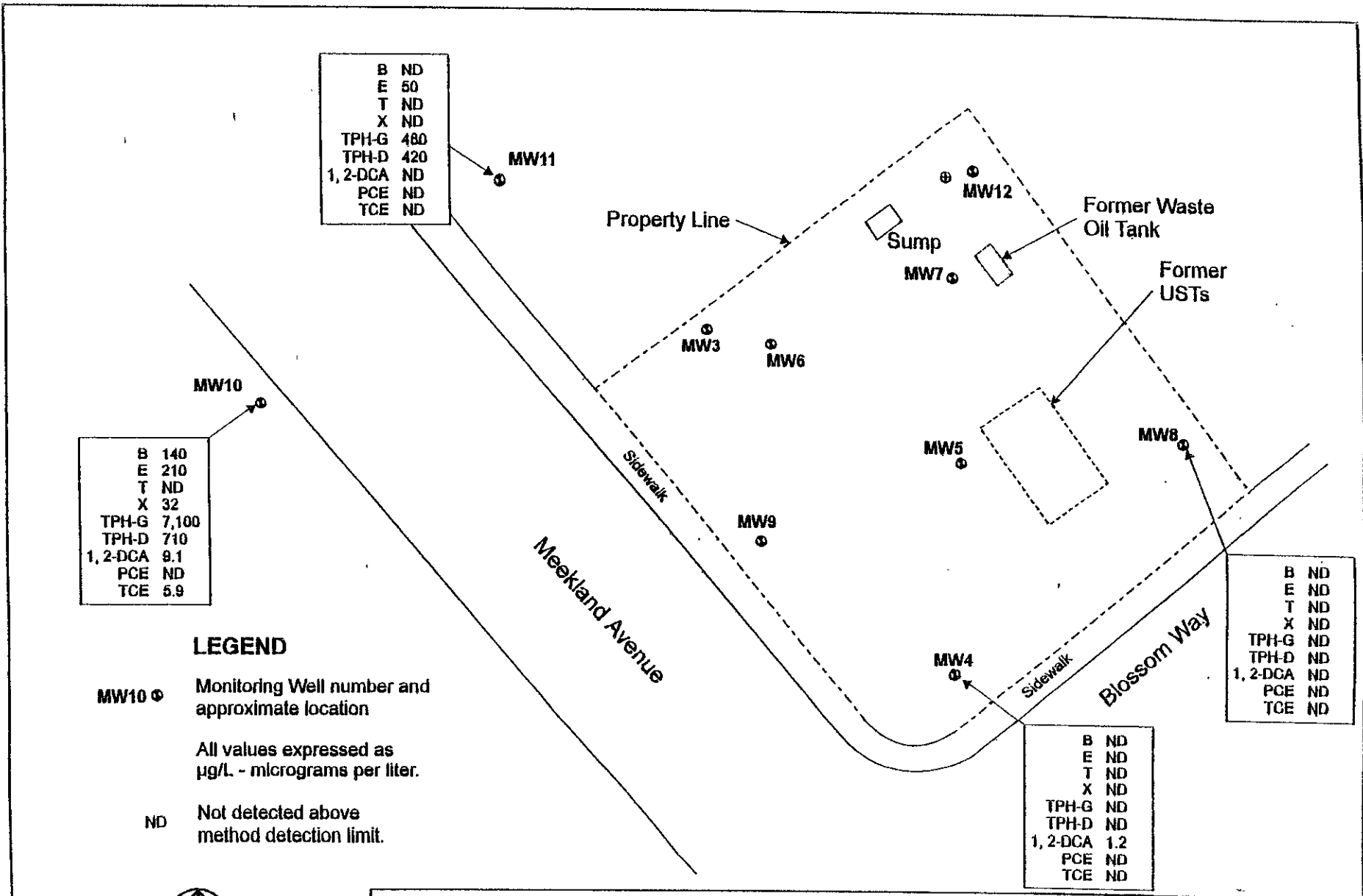
**AGI**  
TECHNOLOGIES

**Groundwater Chemical Analysis Results - March 1996**

Harbert Transportation/Meekland Avenue  
Hayward, California

FIGURE  
**4**

PROJECT NO. 15,833.002    DRAWN DFF    DATE 29 August 94    APPROVED [Signature]    REVISED ALW    DATE 15 Apr 96



**AGI** Groundwater Chemical Analysis Results - September 1996 FIGURE 4  
 Harbert Transportation/Meekland Avenue  
 Hayward, California

PROJECT NO.	DRAWN	DATE	APPROVED	REVISED	DATE
15,833.002	DFP	29 August 94	<i>[Signature]</i>	ALW	15 Apr 96

gw-anal.cdr