



QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT

**ALBANY HILL MINI MART
ALBANY, CALIFORNIA**

Prepared for:

Mr. Mohinder S. & Dr. Joginder K. Sikand
800 San Pablo Avenue
Albany, California

00 SEP -6 PM 9:02
ENVIRONMENTAL
PROTECTION

August 31, 2000

ADVANCED ASSESSMENT AND REMEDIATION SERVICES



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August 31, 2000

Ms. Eva Chu
Alameda County Health Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

**Subject: Quarterly Groundwater Monitoring and Sampling Report for
Albany Hill Mini Mart, 800 San Pablo Avenue, Albany, California**

Dear Ms. Chu:

The enclosed report presents the results and findings of the August 2000, quarterly groundwater monitoring and sampling for the above-referenced facility.

Should you have any questions regarding the report please contact Tridib Guha at (925) 363-1999.

Sincerely,

Advanced Assessment and Remediation Services

Tridib K. Guha, R.G., R.E.A.
Principal

cc: Mr. Mohinder Sikand & Dr. Joginder Sikand, Albany, CA

AHMMQ4.RPT

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QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT

For

**Albany Hill Mini Mart
800 San Pablo Avenue
Albany, California**

1.0 INTRODUCTION

This report presents the results and findings of the August 2000, quarterly groundwater monitoring and sampling performed at 800 San Pablo Avenue, Albany, California. This report is intended to fulfill quarterly self-monitoring requirements and to establish a groundwater monitoring history for the site. In this sampling event, the groundwater samples were analyzed by North State Environmental Laboratory of South San Francisco. A site vicinity map is shown in Figure 1.

2.0 GROUNDWATER MONITORING WELLS

This section presents the water level monitoring, field observations, sampling and analysis procedures, as well as the analytical results. The location of the monitoring wells is presented in Figure 2. The work and related field sampling activities were conducted in accordance with the guidelines and requirements of the Alameda County Environmental Health Department (ACEHD) and the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB).

2.1 Groundwater Level Monitoring and Surveying

Groundwater levels in each well were measured to the nearest 0.01 foot from the top of the PVC casing, using an electronic sounder tape. A groundwater surface elevation map, based on interpretation of groundwater level measurements taken on August 3, 2000, and survey data is presented in Figure 3. The survey data and water level measurements are presented in Table 1.

2.2 Field Observations

The purged water from monitoring, MW-1, MW-2 and MW-3 were clear initially and with continual purging the water turned turbid. However, water samples collected at the time of sampling were clear. No floating product was observed in the groundwater samples from all three monitoring wells. ~~Sheen was observed in groundwater samples from all three monitoring wells. In addition, a strong petroleum odor was noticed in the groundwater samples from all three monitoring wells.~~

2.3 Sampling and Analysis Procedures

Groundwater samples were collected on August 3, 2000, following water level measurements. Samples were analyzed by North State Environmental Laboratory of South San Francisco, California which is certified by the California Department of Health Services (DHS) to perform the specified analyses.

Before purging, water levels were measured in all wells with an electronic sounder tape. Purging preceded sampling in order to ensure collection of non-stagnant water. A minimum of three casing volumes were removed before sampling the wells MW-1, MW-2 and MW-3. The purged water was monitored for temperature, pH, and conductivity. Purging was considered complete when these parameters had stabilized. The wells were sampled after 90 percent recovery or greater. The groundwater monitoring well purge/sampling worksheets are presented Appendix A.

To prevent potential cross-contamination, all measuring, purging and sampling equipment was washed in an Alconox detergent solution, rinsed with tap water, and rinsed finally with distilled water between wells.

The sampling procedure for each monitoring well involved extracting well water with a clean PVC bailer on a clean nylon cord. Groundwater collected for analysis of Total Petroleum Hydrocarbon as gasoline (TPHg) and Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX), Methyl Tertiary Butyl Ether (MTBE) was decanted into two 40-milliliter volatile organic analysis vials with Teflon-lined septa. Groundwater collected for analysis of Total Petroleum Hydrocarbon as diesel (TPHd) was decanted into one 1-liter amber glass bottles. Samples to be analyzed for TPHg/BTEX/MTBE were preserved using hydrochloric acid to a pH of 2.0. All samples were labeled and placed in an iced cooler, along with the chain-of-custody document (Appendix B). Samples transported to the laboratory were analyzed within the specified holding time.

Groundwater produced during purging and sampling was contained in 55-gallon steel drums. The drummed water was labelled with the source (i.e. well number) and date.

2.4 Analytical Methods

Samples were analyzed for TPHg by Modified EPA SW-846 Methods 5030/8015 modified, for TPHd by EPA Methods 3510/8015 modified, and for BTEX/MTBE by EPA SW-846 Methods 8020.

A summary of the analytical results of groundwater samples from the monitoring wells is presented in Table 2. The certified analytical reports for this sampling events are included in Appendix B.

3.0 INTERPRETATION OF RESULTS

The results of water level measurements and groundwater sampling are discussed in the following sections.

3.1 Groundwater Elevations and Gradients

A relative groundwater elevation contours for August 3, 2000, is presented in Figure 3. The flow direction, based on groundwater level data, was toward the southeast with an average hydraulic gradient of 0.02 foot per foot for this monitoring period. The average depth to stabilized groundwater in these wells was approximately 11 feet below ground surface.

3.2 Analytical Results

~~The three previous sampling events, laboratory work was performed by Priority Environmental Labs~~

of Milpitas and MTBE was not detected in groundwater samples. However, for this sampling event groundwater samples were analyzed by North State Environmental Laboratory of South San Francisco. The analytical results for groundwater samples from monitoring wells (MW-1, MW-2 and MW-3) indicated that the concentrations of MTBE were detected at 360, 3300 and 11000 parts per billion (ppb) respectively. Also, the detection of MTBE was confirmed by analyzing groundwater samples from MW-3 using GC/MS method 8260. Groundwater samples from all three monitoring wells were found to contain TPHg ranging from 460 to 1200 ppb; benzene concentrations ranging from 79 to 220 ppb; toluene concentrations ranging from 3 to 43 ppb; ethylbenzene concentrations ranging from 35 to 43 ppb; and xylenes concentrations ranging from 8 to 160 ppb. TPHd was detected in all three groundwater samples, concentrations ranging from 70 to 300 ppb. However, laboratory reported samples do not match diesel pattern. Figure 4 shows the distribution of dissolved-phase petroleum hydrocarbons at the site.

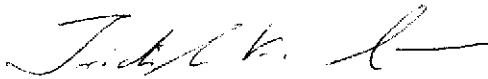
4.0 CONCLUSIONS AND RECOMMENDATIONS

Since, the analytical results for this sampling event detected concentration of MTBE as well as TPHg and BTEX constituents in groundwater at a higher concentrations than previous sampling events in all three monitoring wells. Therefore, the site is subject to further site characterization. Upon receiving direction from ACEHD will proceed for site characterization.

5.0 CERTIFICATION

The information provided in this report is based on the groundwater sampling activities conducted at the site. All data presented in this report is believed to be factual and accurate, unless proven otherwise. Any conclusions or recommendations provided within are based on our expertise and experience conducting work for a similar nature.

Advanced Assessment and Remediation Services



Tridib K. Guha, R.G. 5836

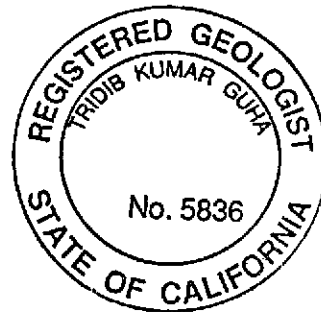


TABLE 1: SURVEY AND WATER LEVEL MONITORING DATA**Albany Hill Mini Mart
800 San Pablo Avenue
Albany, California**

Well No.	Date of Measurement	Top of Casing Elevation (Feet - Relative)	Depth to Groundwater (Feet)	Product Thickness (Feet)	Groundwater Elevation (Feet - Relative)
MW-1	08-06-99	101.68	11.95	0.00	89.73
	11-05-99	101.68	12.72	0.00	88.96
	02-07-00	101.68	10.34	0.00	91.34
	05-05-00	101.68	10.59	0.00	91.09
	08-03-00	101.68	11.75	0.00	89.93
MW-2	08-06-99	101.57	10.83	0.00	90.74
	11-05-99	101.57	11.66	0.00	89.91
	02-07-00	101.57	9.23	0.00	92.34
	05-05-00	101.57	9.54	0.00	92.03
	08-03-00	101.57	10.69	0.00	90.88
MW-3	08-06-99	100.33	10.58	0.00	89.75
	11-05-99	100.33	11.39	0.00	88.94
	02-07-00	100.33	9.05	0.00	91.28
	05-05-00	100.33	9.29	0.00	91.04
	08-03-00	100.33	10.43	0.00	89.90

Note: A bench mark, with an assumed elevation of 100.00 feet (Above Mean Sea Level), is located at the corner of Washington Avenue and San Pablo Avenue. The bench mark is the top of the southeast bolt (painted white) in the street signal light base; all well elevations are relative to this. The elevations at each well were taken on the top of the well casing.

TABLE 2: SUMMARY OF ANALYTICAL RESULTS OF GROUNDWATER SAMPLING

**Albany Hill Mini Mart
800 San Pablo Avenue
Albany, California**

Sample ID	Date of Sampling	TPHg (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPHd µg/L
MW-1 GW	08/06/99	1500	ND	4.3	2.9	9.1	28	1200
	08/06/99	Polynuclear Aromatic Hydrocarbon Analyses by EPA method 610 were non-detect with detection limit 1.0 µg/L						
	11/05/99	1800	ND	5.1	3.2	8.9	33	1400
	02/07/00	1100	ND	3.3	1.9	5.6	21	890
	05/07/00	970	ND	2.9	1.7	4.9	18	650
	08/03/00	1200	ND	190	43	41	160	270*
MW-2 GW	08/06/99	ND	ND	ND	ND	ND	ND	340
	11/05/99	ND	ND	ND	ND	ND	0.7	420
	02/07/00	ND	ND	ND	ND	ND	0.6	310
	05/05/00	ND	ND	ND	ND	ND	ND	280
	08/03/00	460	ND	79	3	43	8	70*
MW-3 GW	08/06/99	ND	ND	ND	ND	ND	ND	ND
	11/05/99	92	ND	ND	ND	0.6	1.7	54
	02/07/00	120	ND	ND	0.6	0.8	2.2	71
	05/05/00	100	ND	ND	ND	0.7	1.9	68
	08/03/00	910	ND	220	9	35	16	300*
RL	08/07/00	50	0.5	0.5	0.5	0.5	1.0	50

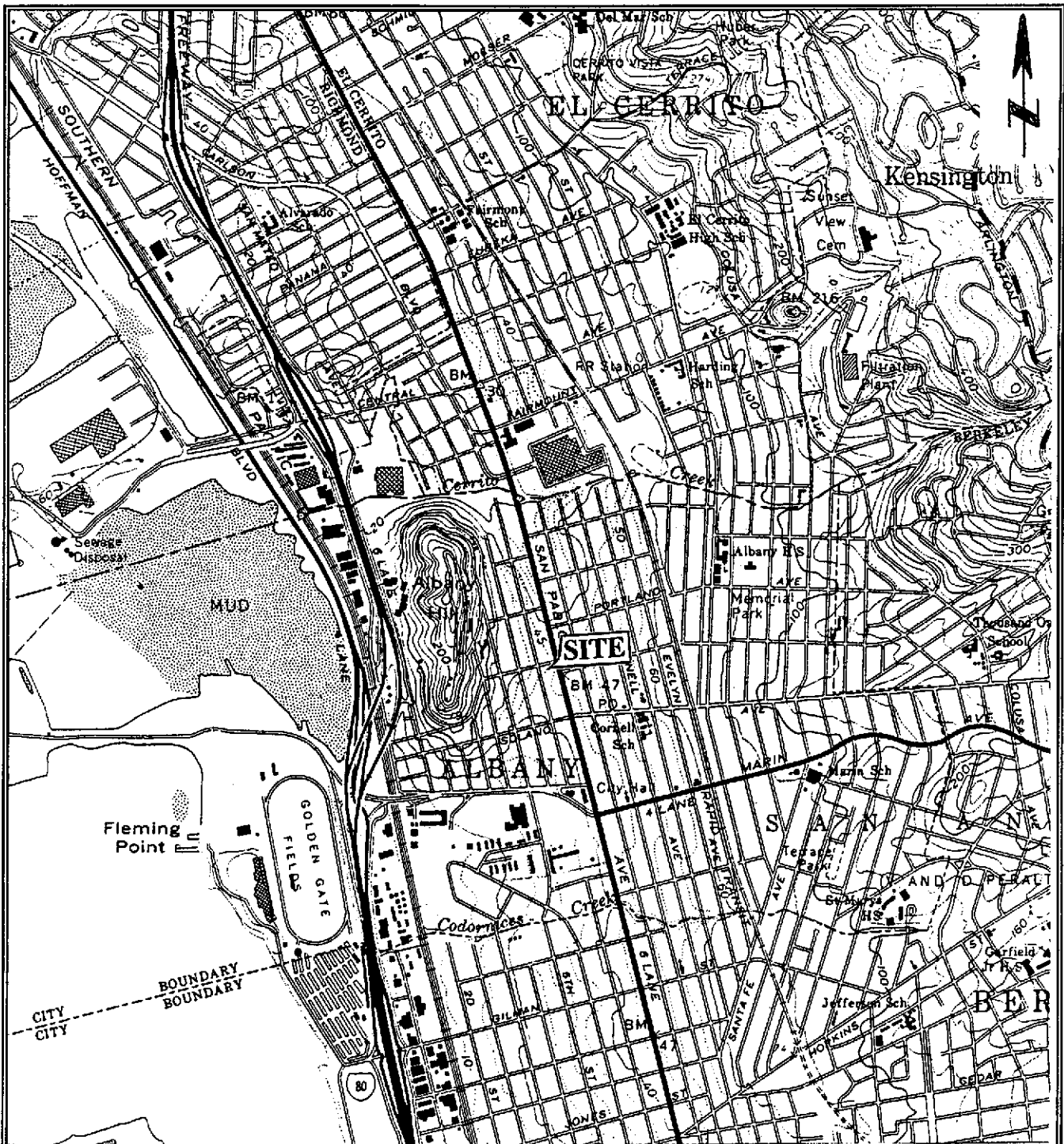
New Lab ✓

New Lab ✓

New Lab ✓

Notes:

- ND- Not Detected
- RL- Reporting Limit
- NA- Not Analyzed
- µg/L- Microgram per liter (parts per billion)
- TPHg- Total petroleum hydrocarbon as gasoline (EPA method modified 8015)
- TPHd- Total petroleum hydrocarbon as diesel (EPA method modified 8015)
- MTBE- Methyl Tertiary Butyl Ether (EPA method 8020)
- Benzene, toluene, ethylbenzene, and total xylenes (EPA method 8015)
- PAH Polynuclear Aromatic Hydrocarbon (EPA method 610)
- * Does not match diesel pattern
- ** Confirmed by GC/MS method 8260



Source: U.S.G.S. Map Richmond Quadrangle
 7.5 Minute Series (Topographic)
 Aerial Photograph taken 1959 Map Edited 1980

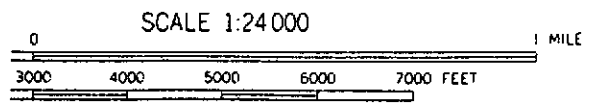
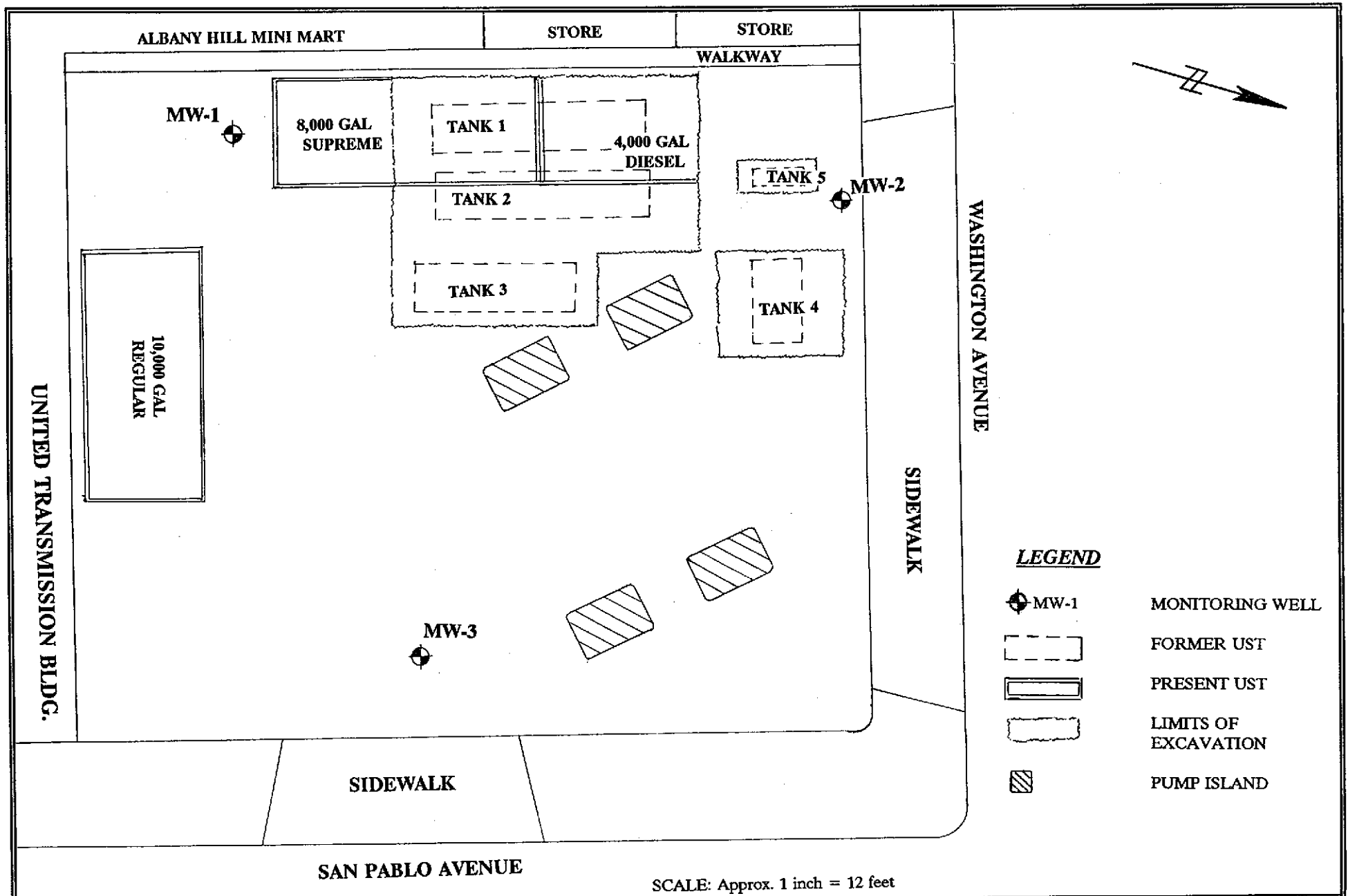

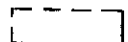
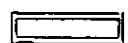
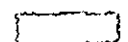



FIGURE 1: SITE VICINITY MAP
ALBANY HILL MINI MART
 800 San Pablo Avenue
 Albany, California

**ADVANCED ASSESSMENT AND
 REMEDIATION SERVICES**
 2380 Salvio Street, Suite 202
 Concord, California



LEGEND

-  MW-1 MONITORING WELL
-  FORMER UST
-  PRESENT UST
-  LIMITS OF EXCAVATION
-  PUMP ISLAND

SCALE: Approx. 1 inch = 12 feet

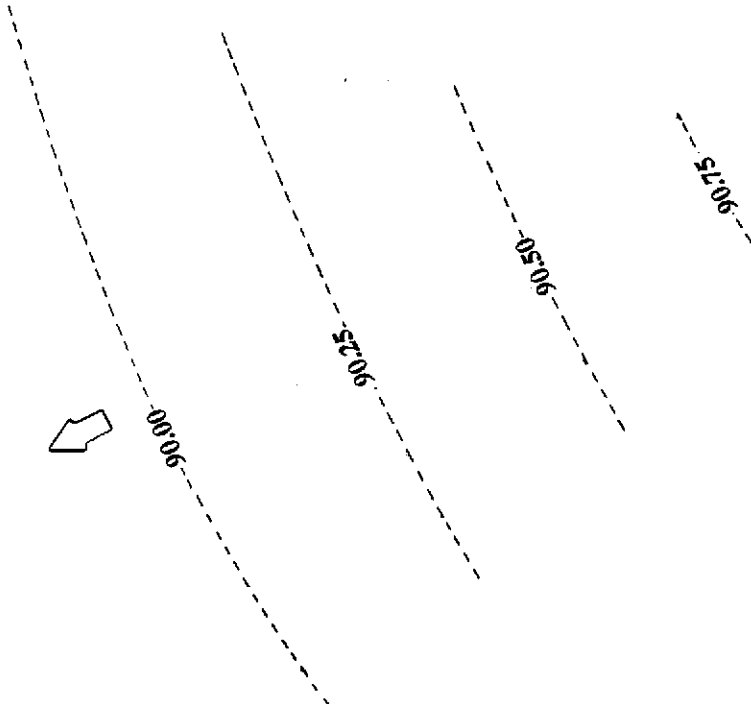
FIGURE 2: SITE PLAN
 ALBANY HILL MINI MART
 800 San Pablo Avenue
 Albany, California

ADVANCED ASSESSMENT AND REMEDIATION SERVICES
 2380 Salvio Street, Suite 202
 Concord, California 94520



(89.93)
MW-1

(90.88)
MW-2

(89.90)
MW-3



LEGEND

-  MW-1 MONITORING WELL
- (89.93) RELATIVE GROUNDWATER ELEVATION
- 90.50- GROUNDWATER ELEVATION CONTOUR
-  GENERAL DIRECTION OF GROUNDWATER FLOW

NOTE:
 1. WATER LEVELS IN MONITORING WELLS MEASURED ON AUGUST 3, 2000
 2. CONTOUR INTERVAL = 0.25 FOOT
 3. HYDRAULIC GRADIENT = 0.02 FOOT/FOOT

Scale:
 Approximately 1 inch = 12 feet

FIGURE 3: GROUNDWATER SURFACE ELEVATIONS (08/03/00)
 ALBANY HILL MINI MART
 800 San Pablo Avenue
 Albany, California

ADVANCED ASSESSMENT AND REMEDIATION SERVICES
 2380 Salvio Street, Suite 202
 Concord, California 94520

TPH _g	1200
B	190
T	43
E	41
X	160
MTBE	360
TPH _d	270

◆ MW-1

TPH _g	460
B	79
T	3
E	43
X	8
MTBE	3300
TPH _d	70

◆ MW-2



TPH _g	910
B	220
T	9
E	35
X	16
MTBE	11000
TPH _d	300

◆ MW-3

LEGEND

◆ MW-1 MONITORING WELL

TPH _g	TOTAL PETROLEUM HYDROCARBONS GASOLINE
MTBE	METHYL TERTIARY BUTYL ETHER
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
TPH _d	TOTAL PETROLEUM HYDROCARBONS DIESEL

NOTE:

1. ALL CONCENTRATIONS ARE IN MICROGRAMS PER LITER (PARTS PER BILLION)
2. HYDROCARBON CONSTITUENTS WHICH WERE NOT DETECTED ARE NOT LISTED

SCALE

Approx. 1 inch = 12 feet

**FIGURE 4: DISTRIBUTION OF DISSOLVED-PHASE HYDROCARBONS
ALBANY HILL MINI MART
800 San Pablo Avenue
Albany, California**

**ADVANCED ASSESSMENT AND REMEDIATION SERVICES
2380 Salvio Street, Suite 202
Concord, California 94520**

GROUNDWATER MONITORING WELL PURGE/SAMPLING WORKSHEET

PROJECT NAME: Albany Hill Mini Mart PROJECT NUMBER: 99005

SITE ADDRESS: 800 San Pablo Avenue, Albany, CA

WELL NUMBER: MW-2 WELL CASING DIA.: 2" DATE: 8/3/00

Stagnant Volume Calculation

Total Well Depth (ft) - Initial Depth to Water = Water Column Height (ft) - Time: 8:20
 24 10.69 13.31

Water column Height (ft) x Gallons/Linear Foot = Stagnant Volume (Gallons)
 13.31 0.17 2.2

(Gallons/Linear Foot: 2" dia. = 0.17; 4" dia. = 0.66; 6" dia. = 1.5)

Groundwater Inspection

Floating Product (ft. or in.): NONE Sheen/Iridescence: Odor:

Time	Volume Purged (gal)	Temperature (degrees F)	pH	Conductivity μ S	Color/Turbidity/Other
8:30	0	69.6	7.23	1351	CLEAR
8:40	2	68.5	7.20	1295	SLIGHTLY TURBID GRAY
8:50	5	68.2	7.17	1301	" " "
9:00	7	68.1	7.19	1289	SILTY GRAY

Purged Water Containment

Purge Method Used:

7 gals stored in 1 55 gal (drums); Any previous drums? 1 Capacity 55

Groundwater Sampling Water Level Recovery (Depth to groundwater in feet)

(P) After purging: 11.67 (I) Initially: 10.69 (S) Before sampling: 10.73 Time: 11:28

(P-S)/P-I x 100 = 100 % Total Recovery: 96 % SAMPLE TIME: 11:30

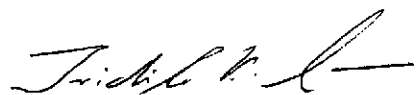
Sample Containers (How many? Preservatives?)

1 liter amber glass: 1; 40 ml VOA: 2; 500 ml polypropylene: -

REMARKS:

SAMPLER: TRIDIB GUHA

(Print)

SIGNATURE: 

ADVANCED ASSESSMENT AND REMEDIATION SERVICES

GROUNDWATER MONITORING WELL PURGE/SAMPLING WORKSHEET

PROJECT NAME: Albany Hill Mini Mart PROJECT NUMBER: 99005

SITE ADDRESS: 800 San Pablo Avenue, Albany, CA

WELL NUMBER: MW-3 WELL CASING DIA.: 2" DATE: 8/3/00

Stagnant Volume Calculation

Total Well Depth (ft) - Initial Depth to Water = Water Column Height (ft) - Time: 8:22
 24 10.43 13.57

Water column Height (ft) x Gallons/Linear Foot = Stagnant Volume (Gallons)
 13.57 0.17 2.3

(Gallons/Linear Foot: 2" dia. = 0.17; 4" dia. = 0.66; 6" dia. = 1.5)

Groundwater Inspection

Floating Product (ft. or in.): Sheen/Iridescence: Odor:

Time	Volume Purged (gal)	Temperature (degrees F)	pH	Conductivity μ S	Color/Turbidity/Other
9:10	0	69.6	7.15	1446	CLEAR
9:20	2	68.9	7.01	1547	SLIGHTLY TURBID BROWN
9:30	5	68.9	7.03	1541	" " "
9:40	7	68.7	6.98	1549	SILTY GRAYISH BROWN

Purged Water Containment

Purge Method Used:

7 gals stored in 1 55 gal (drums); Any previous drums? 1 Capacity 55

Groundwater Sampling Water Level Recovery (Depth to groundwater in feet)

(P) After purging: _____ (I) Initially: 10.43 (S) Before sampling: 10.49 Time: 11:43

(P-S)/P-I x 100 = 100 % Total Recovery: 94% SAMPLE TIME 11:45

Sample Containers (How many? Preservatives?)

1 liter amber glass: 1; 40 ml VOA: 2; 500 ml polypropylene: -

REMARKS:

SAMPLER: TRIDIB GUHA

(Print)

SIGNATURE: 

ADVANCED ASSESSMENT AND REMEDIATION SERVICES



C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 00-1111
Client: Advanced Assessment & Remd.
Project: AHMM, 800 SAN PABLO AVE., ALBANY

Date Reported: 08/14/2000

Gasoline, BTEX and MTBE by Methods 8015M and 8020
Diesel Range Hydrocarbons by Method 8015M

Table with 6 columns: Analyte, Method, Result, Unit, Date Sampled, Date Analyzed. Contains three sample entries (00-1111-01, 00-1111-02, 00-1111-03) with various analyte results and handwritten notes like 'MTBE'.

*Does not match diesel pattern**Confirmed by GC/MS



North State Environmental Laboratory

CA ELAP# 1753

90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 00-1111
Client: Advanced Assessment & Remd.
Project: AHMM, 800 SAN PABLO AVE., ALBANY

Date Reported: 08/14/2000

Gasoline, BTEX and MTBE by Methods 8015M and 8020
Diesel Range Hydrocarbons by Method 8015M

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 00-1111-03	Client ID: MW-3	GW		08/03/2000	WATER
Xylenes	8020	16	ug/L		
Diesel	8015M	*0.3	mg/L		08/07/2000



C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

Lab Number: 00-1111
Client: Advanced Assessment & Remd.
Project: AHMM, 800 SAN PABLO AVE., ALBANY

Date Reported: 08/14/2000

Gasoline, BTEX and MTBE by Methods 8015M and 8020
Diesel Range Hydrocarbons by Method 8015M

Table with 7 columns: Analyte, Method, Reporting Limit, Unit, Blank, Avg MS/MSD Recovery, RPD. Rows include Diesel, Gasoline, Benzene, Ethylbenzene, Toluene, Xylenes, and MTBE.

ELAP Certificate NO:1753

Reviewed and Approved

Handwritten signature of John A. Murphy

John A. Murphy, Laboratory Director



North State Environmental Analytical Laboratory

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080

Phone: (650) 266-4563 Fax: (650) 266-4560

00-1111

Chain of Custody / Request for Analysis

Lab Job No.: _____ Page 1 of 1

Client: ADVANCED ASSESSMENT	Report to:	Phone: 925-363-1999	Turnaround Time
Mailing Address: + REND. SVC. 2380 SALVIO ST. #202 CONCORD, CA 94520	Billing to: SAME	Fax: 925-363-1998	5 DAY
		PO# / Billing Reference:	Date: 8-3-00
			Sampler: T. GUHA

Project / Site Address: AHMM 500 SAN PABLO AVE ALBANY, CA		Analysis Requested										Comments / Hazards	
Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	TPH	MPX	IMT	TPHd					
MW-1 GW	WATER	2 VOAS 1 AMB	HCL	8/3/00 12:00	X	X	X	X					
MW-2 GW	↓	2 VOAS 1 AMB	HCL	8/3/00 11:30	X	X	X	X					
MW-3 GW	↓	2 VOAS 1 AMB	HCL	8/3/00 11:45	X	X	X	X					

Relinquished by: <i>[Signature]</i>	Date: 8/3/00	Time: 12:10	Received by: <i>[Signature]</i>	Lab Comments
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	