



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

May 15, 2000

ADVANCED ASSESSMENT AND REMEDIATION SERVICES



2380 Salvio Street, Suite 202
Concord, CA 94520
Phone: (925) 363-1999
Fax: (925) 363-1998
e-mail: aars@ecnet.com



**ADVANCED ASSESSMENT AND
REMEDATION SERVICES (AARS)**

2380 SALVIO STREET, SUITE 202
CONCORD, CALIFORNIA 94520-2137
TEL: (925) 363-1999 FAX: (925) 363-1998
e-mail: aars@ccnet.com

May 15, 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 May 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

AHMMQ3.RPT

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 GROUNDWATER MONITORING WELLS	1
2.1 Groundwater Level Monitoring and Surveying	1
2.2 Field Observations	1
2.3 Sampling and Analysis Procedures	1
2.4 Analytical Methods	2
3.0 INTERPRETATION OF RESULTS	2
3.1 Groundwater Elevations and Gradients	2
3.2 Analytical Results	3
4.0 SELF-MONITORING PROJECT SCHEDULE AND RECOMMENDATIONS	3
5.0 CERTIFICATION	3

TABLES

Table 1	Groundwater Elevation Data
Table 2	Summary of Analytical Results of Groundwater Sampling

FIGURES

Figure 1	Site Vicinity Map
Figure 2	Site Plan
Figure 3	Groundwater Surface Elevations
Figure 4	Distribution of Dissolved-Phase Petroleum Hydrocarbons

APPENDICES

Appendix A	Purge/Sampling Worksheets
Appendix B	Certified Analytical Reports and Chain-of-Custody Documents

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 May 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. 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. A groundwater surface elevation map, based on interpretation of groundwater level measurements taken on May 5, 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 monitoring well MW-1 and MW-3. 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 May 5, 2000, following water level measurements. Samples were analyzed by Priority Environmental Labs of Milpitas, 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 602.

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 May 5, 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 9.5 feet below ground surface.

3.2 Analytical Results

The analytical results for groundwater samples from three monitoring wells (MW-1 through MW-3) are presented in Table 2, which also includes the groundwater sampling results from the previous site investigation. Groundwater samples from monitoring wells MW-1 and MW-3 were found to contain TPHg at 970 and 100 parts per billion (ppb), respectively. TPHd was detected in all three groundwater samples, concentrations ranging from 68 to 650 ppb. Benzene was detected only in groundwater samples from MW-1 at a concentration of 2.9 ppb. Toluene, ethylbenzene, and xylenes concentrations ranging from 1.7, 4.9 and 18 ppb were measured in groundwater samples from MW-1. MTBE was not detected in groundwater samples from all three monitoring wells. Figure 4 shows the distribution of dissolved-phase petroleum hydrocarbons at the site.

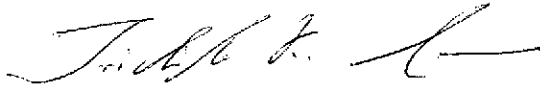
4.0 SELF-MONITORING PROGRAM SCHEDULE AND RECOMMENDATIONS

The next monitoring event scheduled for the site is August, 2000. The analytical results of MW-2 groundwater samples were below detection limit for TPHg/BTEX/MTBE. The sampling and analytical results for the site since August 1999, is showing progressively decreasing trend of hydrocarbon compounds in the groundwater. In addition, MTBE was not detected in groundwater samples. In the next monitoring event, if the concentration of hydrocarbons remains low, then the site should be considered for closure.

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

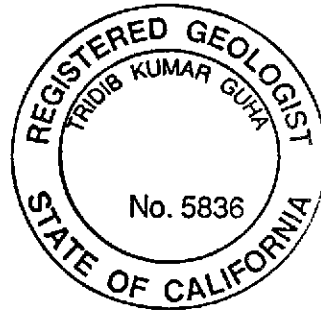


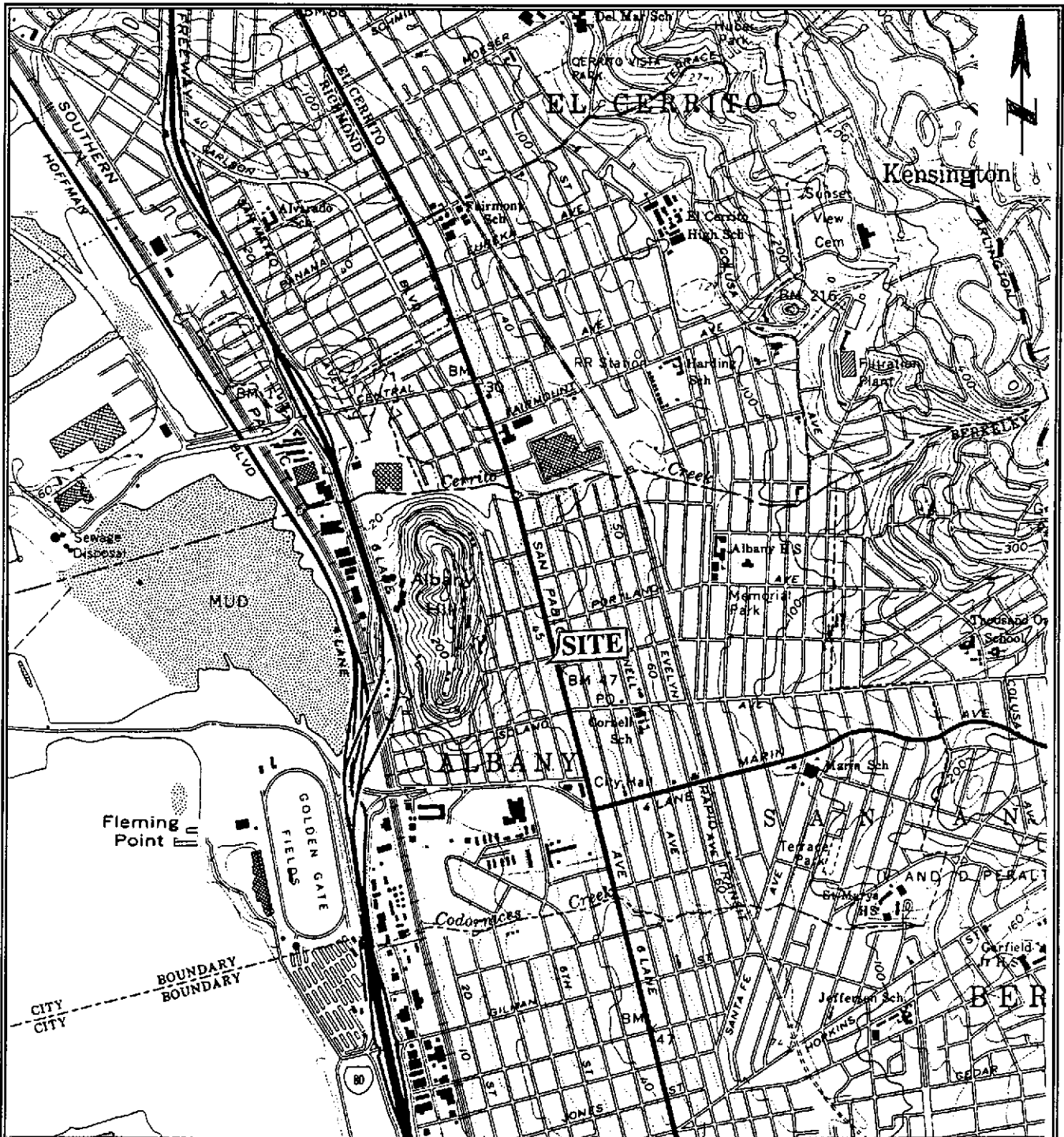
TABLE 1: SURVEY AND WATER LEVEL MONITORING DATA
Albany Hill Mini Mart
800 San Pablo Avenue
Albany, California

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
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
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

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
	05/05/00	970	ND	2.9	1.7	4.9	18	650
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
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
RL	05/08-09/00	50	0.5	0.5	0.5	0.5	0.5	50
<p>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 602) Benzene, toluene, ethylbenzene, and total xylenes (EPA method 602) PAH Polynuclear Aromatic Hydrocarbon (EPA method 610)</p>								



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

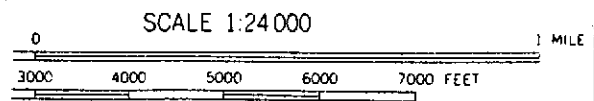
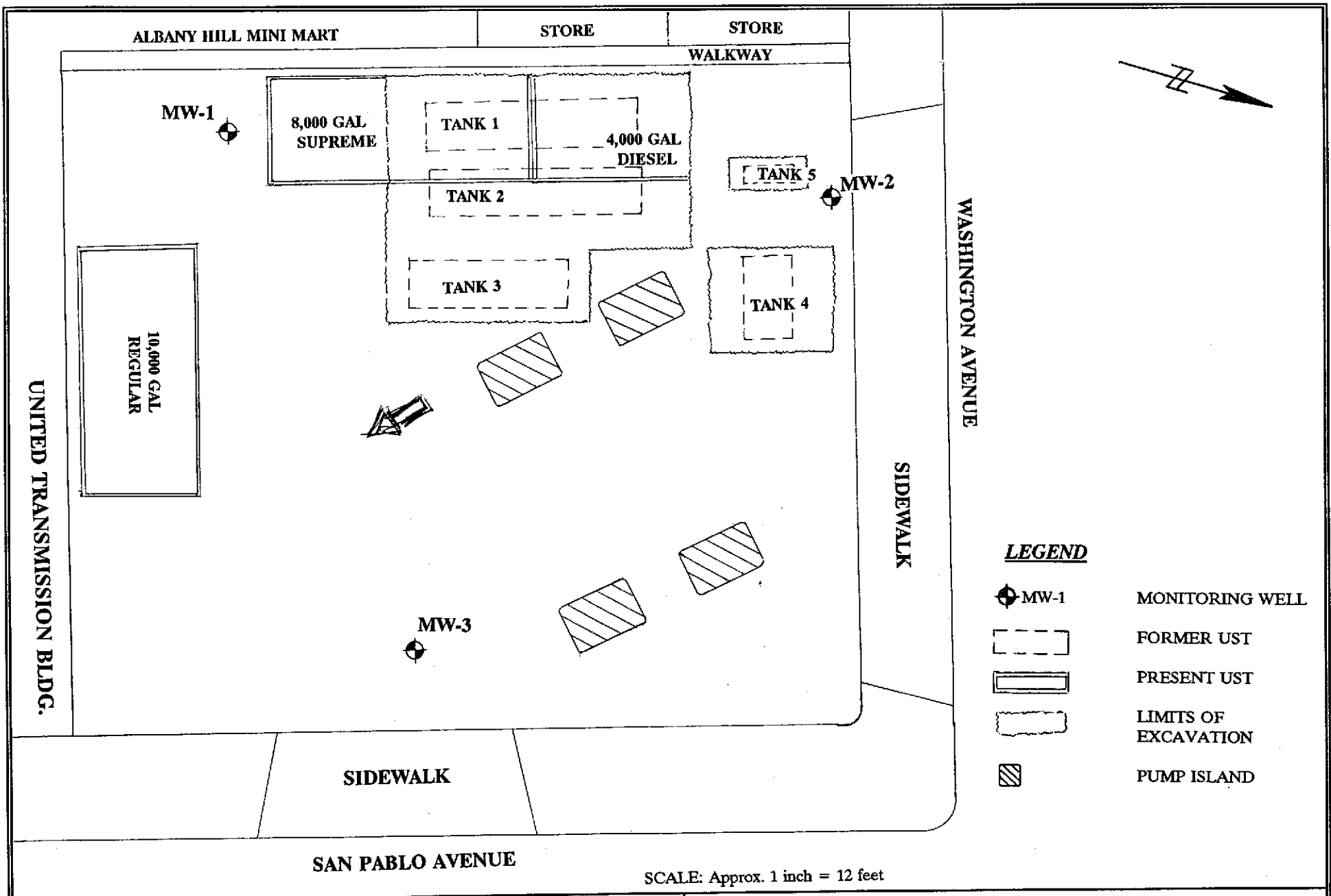

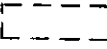
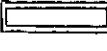
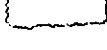



FIGURE 1: SITE VICINITY MAP
 ALBANY HILL MINI MART
 800 San Pablo Avenue
 Albany, California

**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

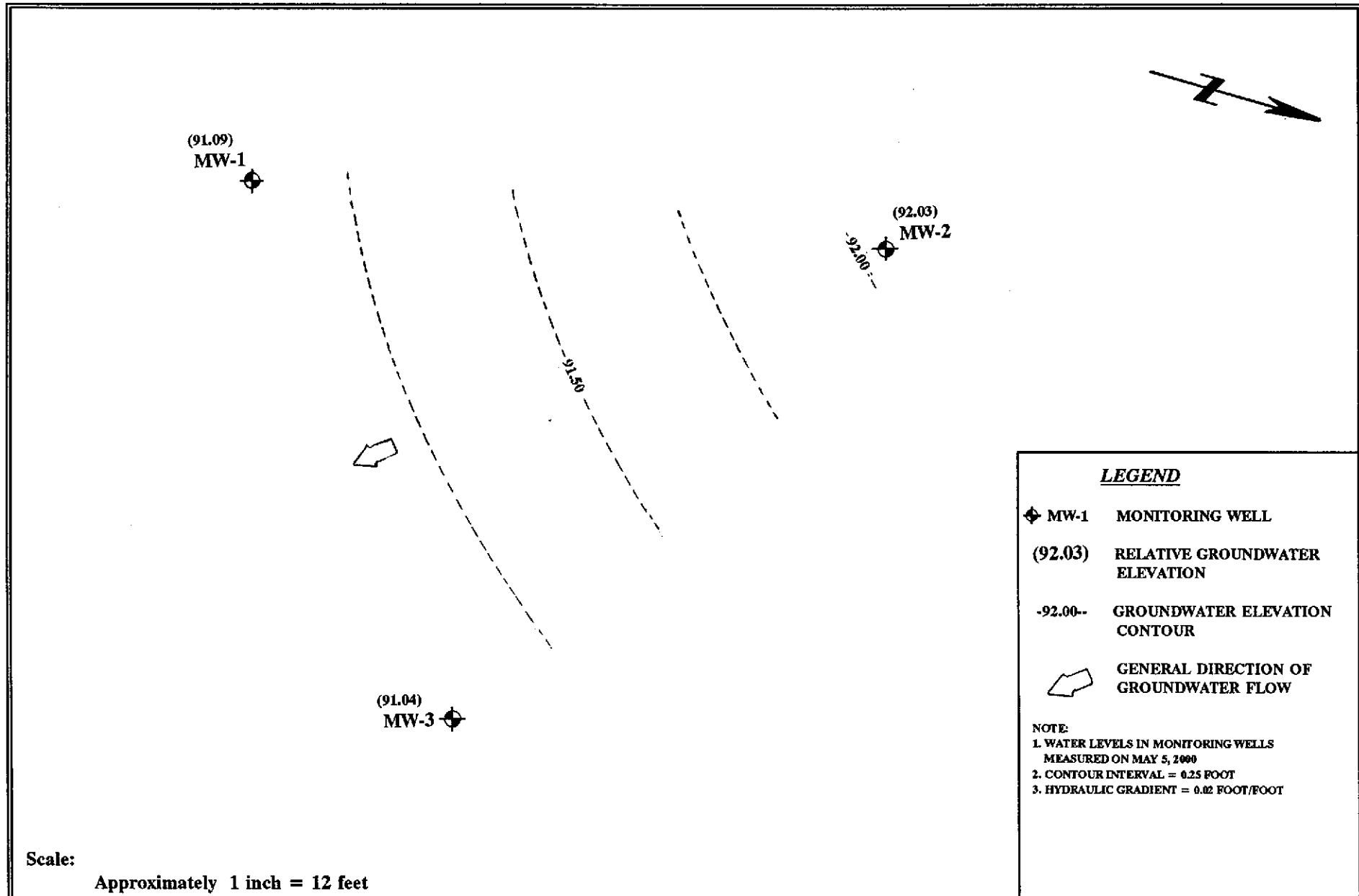


FIGURE 3: GROUNDWATER SURFACE ELEVATIONS (05/05/00)
ALBANY HILL MINI MART
 800 San Pablo Avenue
 Albany, California

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

TPHg 970
 B 2.9
 T 1.7
 E 4.9
 X 18
 TPHd 650

MW-1

TPHd 280

MW-2

TPHg 100
 E 0.7
 X 1.9
 TPHd 68

MW-3



LEGEND

MW-1 MONITORING WELL

TPHg TOTAL PETROLEUM HYDROCARBON AS GASOLINE
 MTBE METHYL TERTIARY BUTYL ETHER
 B BENZENE
 T TOLUENE
 E ETHYLBENZENE
 X XYLENES
 TPHd TOTAL PETROLEUM HYDROCARBON AS 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**

APPENDIX A

Monitoring Well Purge/Sample Worksheet

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 - 1 WELL CASING DIA.: 2"

DATE: 5/5/00

Stagnant Volume Calculation

Total Well Depth (ft) - Initial Depth to Water = Water Column Height (ft) - Time: 8:05
 24 10.59 13.41

Water column Height (ft) x Gallons/Linear Foot = Stagnant Volume (Gallons)
 13.41 0.17 2.28

(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: YES

Odor: YES

Time	Volume Purged (gal)	Temperature (degrees F)	pH	Conductivity μ S	Color/Turbidity/Other
9:30	0	64.1	7.19	2450	CLEAR
9:40	2	63.9	7.31	2446	SLIGHTLY TURBID BROWNISH
9:50	5	63.9	7.38	2438	" "
10:00	7	63.7	7.40	2433	" "

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: 11.60 (I) Initially: 10.59 (S) Before sampling: 10.69 Time: 11:43

(P-S)/P-I x 100 = 100 % Total Recovery: 90%

Sample Containers (How many? Preservatives?)

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

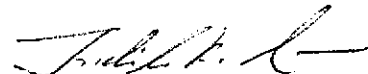
REMARKS:

SAMPLE TIME: 11:45

SAMPLER: TRIDIB GUHA

(Print)

SIGNATURE:



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: 5/5/00

Stagnant Volume Calculation

Total Well Depth (ft) - Initial Depth to Water = Water Column Height (ft) - Time: 8:00
 24 9.54 14.46

Water column Height (ft) x Gallons/Linear Foot = Stagnant Volume (Gallons)
 14.46 0.17 2.46

(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: NONE

Odor: YES

Time	Volume Purged (gal)	Temperature (degrees F)	pH	Conductivity μ S	Color/Turbidity/Other
8:10	0	66.4	7.54	1305	CLEAR
8:20	3	66.5	7.46	1324	SLIGHTLY TURBID BROWN
8:30	5	66.4	7.44	1355	" "
8:40	8	66.2	7.49	1370	" "

Purged Water Containment

Purge Method Used:

8 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: 10.51 (I) Initially: 9.54 (S) Before sampling: 9.59 Time: 11:13

(P-S)/P-I x 100 = 100 % Total Recovery: 95%

Sample Containers (How many? Preservatives?)

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

REMARKS:

SAMPLE TIME: 11:15

SAMPLER: TRIDIB GUHA
 (Print)

SIGNATURE: *[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: 5/5/00

Stagnant Volume Calculation

Total Well Depth (ft) - Initial Depth to Water = Water Column Height (ft) - Time: 8:02
 24 9.29 14.71

Water column Height (ft) x Gallons/Linear Foot = Stagnant Volume (Gallons)
 14.71 0.17 2.5

(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: YES

Odor: YES

Time	Volume Purged (gal)	Temperature (degrees F)	pH	Conductivity μ S	Color/Turbidity/Other
8:50	0	66.0	7.43	1604	CLEAR
9:00	3	66.1	7.40	1630	SLIGHTLY TURBID BROWN
9:10	5	66.2	7.37	1624	" "
9:20	8	66.1	7.33	1627	" "

Purged Water Containment

Purge Method Used:

8 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: 10.28 (I) Initially: 9.29 (S) Before sampling: 9.36 Time: 11:25

(P-S)/P-I x 100 = 100 % Total Recovery: 93%


Sample Containers (How many? Preservatives?)

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

SAMPLE TIME: 11:30

REMARKS:

SAMPLER: TAIDIB CAHA

SIGNATURE: 

(Print)

ADVANCED ASSESSMENT AND REMEDIATION SERVICES



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

May 09, 2000

PEL #0005008

ADVANCED ASSESSMENT & REMEDIATION SERVICES

Attn: Tridib Guha

Re: Three water samples for Gasoline/BTEX with MTBE and Diesel analyses.

Project name: AHMM

Project number: 99005

Date sampled: May 05, 2000


Date submitted: May 05, 2000

Date extracted: May 08-09, 2000

Date analyzed: May 08-09, 2000

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)	MTBE (ug/L)
MW-1 GW	970	650	2.9	1.7	4.9	18	N.D.
MW-2 GW	N.D.	280	N.D.	N.D.	N.D.	N.D.	N.D.
MW-3 GW	100	68	N.D.	N.D.	0.7	1.9	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	93.3%	95.1%	86.2%	81.9%	94.0%	96.1%	---
Detection limit	50	50	0.5	0.5	0.5	0.5	0.5
Method of Analysis	5030/ 8015	3510/ 8015	602	602	602	602	602


David Duong
Laboratory Director

