



PORT OF OAKLAND

January 29, 1996

Ms. Jennifer Eberle
Hazardous Materials Specialist
Hazardous Materials Division
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 94502

**SUBJECT: GROUNDWATER MONITORING AND SAMPLING REPORT,
TRANSBAY CONTAINER TERMINAL (TBCT),
707 FERRY STREET, OAKLAND, CALIFORNIA,
STID # 3982**

Dear Jennifer:

Enclosed you will find a copy of the Groundwater Monitoring and Sampling Report for a UST site located at TransBay Container Terminal (TBCT), 707 Ferry Street, Oakland, California. The Fourth Quarter 1995 Report was prepared on the behalf of the Port of Oakland by Alisto Engineering Group. The report address groundwater monitoring of a monitoring well that constructed in the vicinity of Port tank site CF-04.

If you have any questions or comments, please call me at 272-1373.

Sincerely,



John Prall, R.G.

Associate Environmental Scientist

Enclosed

cc: Neil Warner
Dave Adams

50770-1 MCR 15
EPA/OSWER/940/0-1
1/30/96 10:15 AM

GROUNDWATER MONITORING AND SAMPLING REPORT

Port of Oakland
Berth 25
707 Ferry Street
Oakland, California

Project No. 10-255-01-004

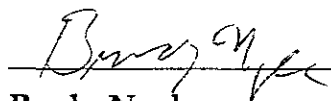
Prepared for:

Port of Oakland
530 Water Street
Oakland, California


Prepared by:

Alisto Engineering Group
1575 Treat Boulevard, Suite 201
Walnut Creek, California

January 17, 1996



Brady Nagle
Project Manager



Al Sevilla, P.E.
Principal



GROUNDWATER MONITORING AND SAMPLING REPORT

Port of Oakland
Berth 25
707 Ferry Street
Oakland, California

Project No. 10-255-01-004

January 17, 1996

INTRODUCTION

This report presents the results and findings of the November 13, 1995 groundwater monitoring and sampling conducted by Alisto Engineering Group at the Transbay Container Terminal, Port of Oakland, Berth 25, 707 Ferry Street, Oakland, California. A site vicinity map is shown on Figure 1.

The scope of work includes monitoring and sampling of one groundwater monitoring well, MW-1, which was installed on May 18, 1994 in the location of a former 10,000-gallon diesel underground fuel storage tank (CF-04). The underground storage tank was removed on December 3, 1993.

FIELD PROCEDURES

Field activities were performed in accordance with the procedures and guidelines of the Alameda County Health Care Services Agency and the California Regional Water Quality Control Board, San Francisco Bay Region.

Before purging and sampling, the groundwater level in Well MW-1 was measured from a permanent mark on top of the casing to the nearest 0.01 foot using an electronic sounder. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

Before sample collection, Well MW-1 was purged of 3 casing volumes while recording field readings of pH, temperature, and electrical conductivity. The groundwater samples were collected for laboratory analysis by lowering a bottom-fill, disposable bailer to just below the water level in the well. The samples were transferred from the bailer into laboratory-supplied containers. The field procedures for groundwater monitoring well sampling and the water sampling field survey forms are presented in Appendix A.

SAMPLING AND ANALYTICAL RESULTS

The groundwater sample was analyzed by Clayton Environmental Consultants, a state-certified laboratory, for the following:



- Total petroleum hydrocarbons as diesel (TPH-D) using EPA Method 8015 (modified)
- Total petroleum hydrocarbons as motor oil (TPH-MO) using EPA Method 8015 (modified)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method 8020
- Total dissolved solids using EPA Method 160.1

The results of monitoring and laboratory analysis of the groundwater samples for this and previous events are summarized in Table 1. The potentiometric groundwater elevations interpreted from MW-1 and from monitoring wells at the neighboring former Mobil Oil Bulk Terminal at 909 Ferry Street are shown on Figure 2. The field procedures for chain of custody documentation and the laboratory report and chain of custody record are presented in Appendix B.

SUMMARY OF FINDINGS

The findings of the November 13, 1995 groundwater monitoring and sampling event are summarized as follows:

- Free product or sheen was not observed in Monitoring Well MW-1.
- Groundwater elevation data from the one well onsite and the wells at the neighboring former Mobil Oil Bulk Terminal site indicate a westerly gradient at the site.
- TPH-D was detected at a concentration of 110 micrograms per liter (ug/l) in the sample collected from MW-1. TPH-MO was detected at a concentration of 1300 ug/l. BTEX constituents were not detected above the reported detection limits.
- Total dissolved solids was detected at a concentration of 1200 milligrams per liter in the sample collected from MW-1.



TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING AND SAMPLING
 PORT OF OAKLAND, BERTH 25
 707 FERRY STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-255

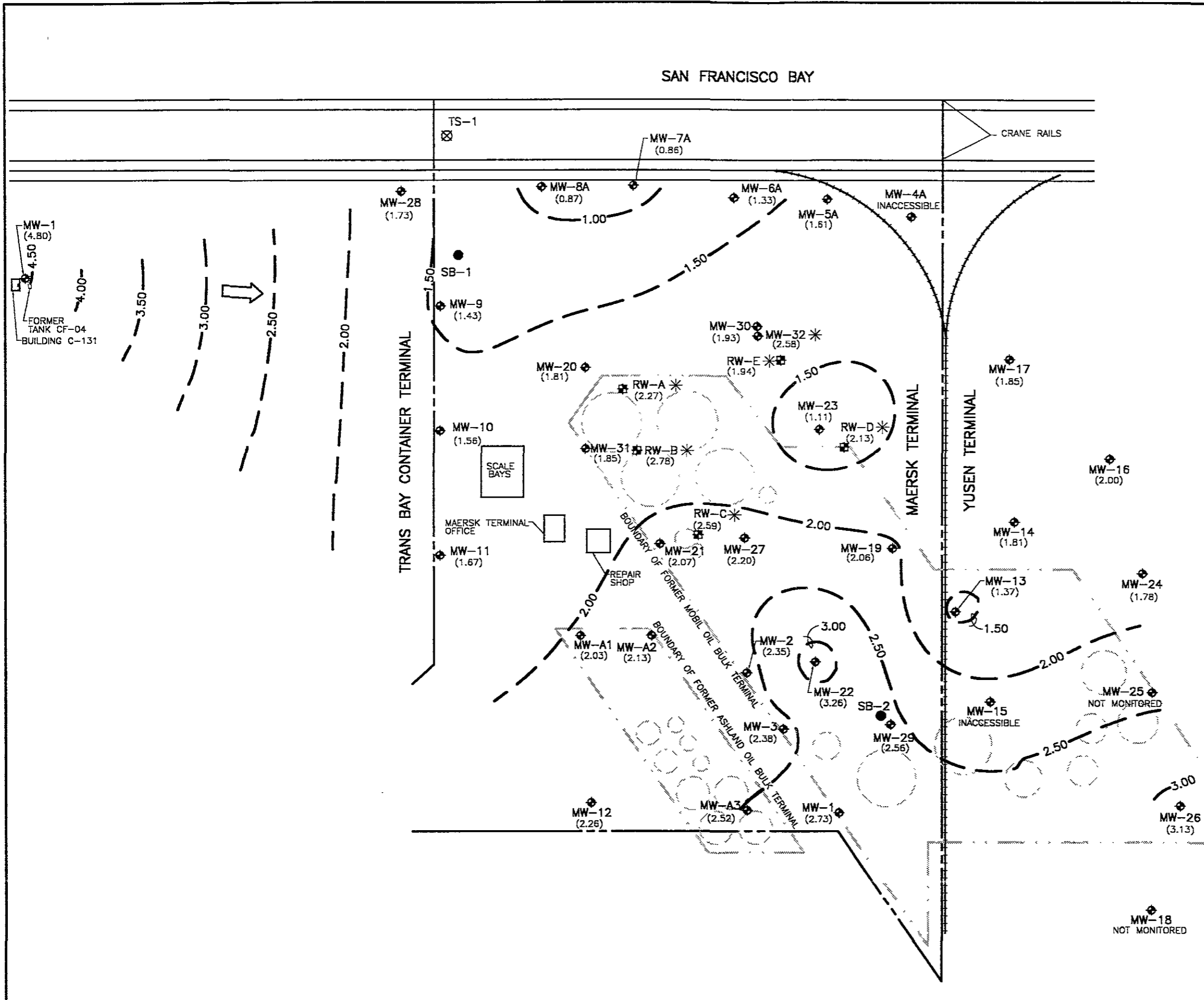
WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (feet)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (b) (feet)	TPH-D (ug/l)	TPH-MO (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	TDS (mg/l)	LAB
MW-1	06/09/94	14.65	9.88	4.77	410	---	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1900	D&M
MW-1	02/22/95	14.65	9.66	4.99	990	120	ND<0.4	ND<0.3	ND<0.3	ND<0.4	1100	CEC
QC-1 (c)	02/22/95	14.65	---	---	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	---	CEC
MW-1	05/24/95	14.65	9.71	4.94	180	600	ND<0.4	ND<0.3	ND<0.3	ND<0.4	1200	CEC
QC-1 (c)	05/24/95	14.65	---	---	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	---	CEC
MW-1	08/24/95	14.65	9.85	4.80	ND<80	400	ND<0.4	ND<0.3	ND<0.3	ND<0.4	1300	CEC
QC-1 (c)	08/24/95	---	---	---	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	---	CEC
MW-1	11/13/95	14.65	10.18	4.47	110	1300	ND<0.4	ND<0.3	ND<0.3	ND<0.4	1200	CEC
QC-1 (c)	11/13/95	---	---	---	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	---	CEC
QC-2 (d)	02/22/95	---	---	---	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	---	CEC
QC-2 (d)	05/24/95	---	---	---	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	---	CEC
QC-2 (d)	08/24/95	---	---	---	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	---	CEC
QC-2 (d)	11/13/95	---	---	---	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	---	CEC

ABBREVIATIONS:

TPH-D Total petroleum hydrocarbons as diesel
 TPH-MO Total petroleum hydrocarbons as motor oil
 B Benzene
 T Toluene
 E Ethylbenzene
 X Total xylenes
 TDS Total dissolved solids
 ug/l Micrograms per liter
 mg/l Milligrams per liter
 --- Not analyzed/applicable
 ND Not detected above reported detection limit
 D&M D&M Laboratories
 CEC Clayton Environmental Consultants

NOTES:

- (a) Top of casing elevations surveyed to the nearest 0.01 foot relative to mean lower low water (3.2 feet below mean sea level) Port of Oakland datum.
 (b) Groundwater elevations expressed in feet above mean lower low water.
 (c) Blind duplicate.
 (d) Travel blank.

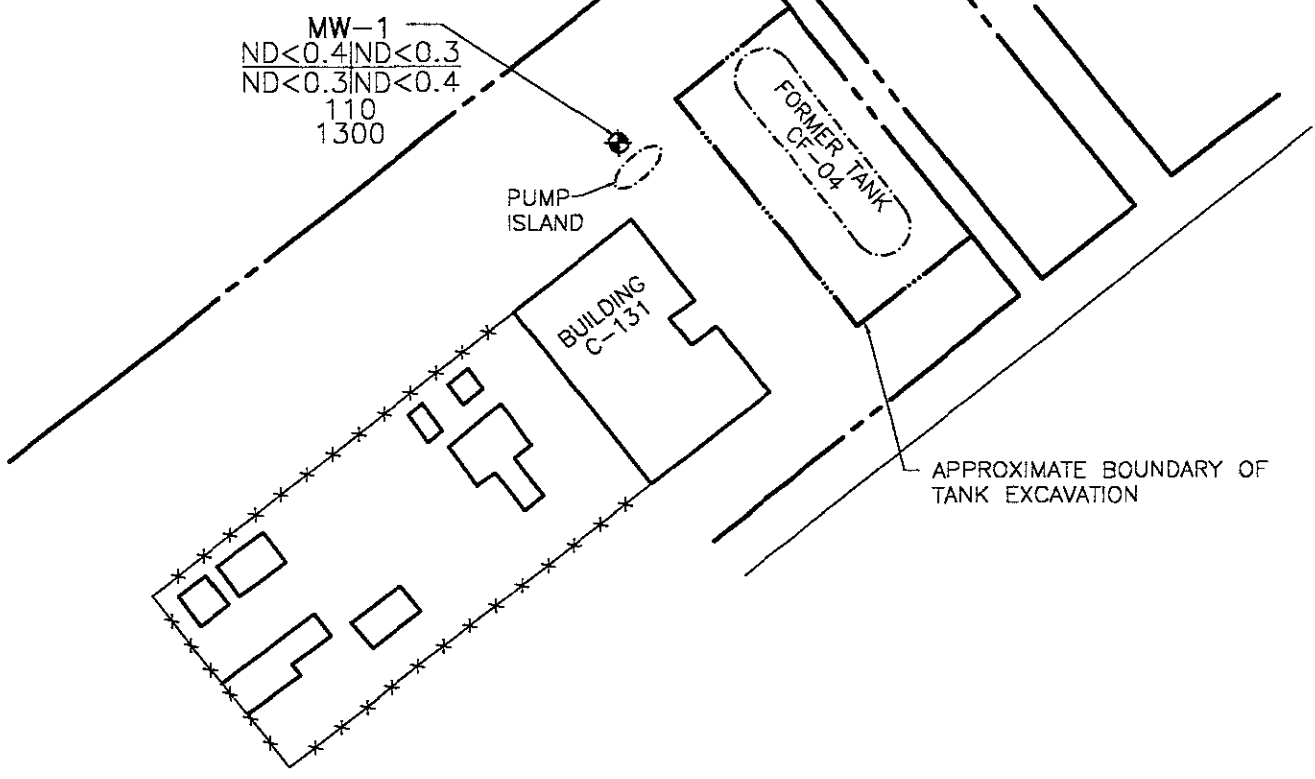
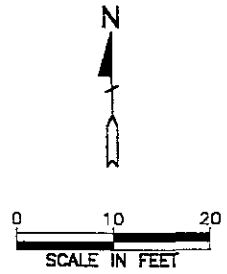


LEGEND


- ◆ GROUNDWATER MONITORING WELL
- ⊠ GROUNDWATER RECOVERY WELL
- SOIL BORING LOCATION
- ⊗ TIDAL STUDY MONITORING POINT
- FORMER ABOVEGROUND PRODUCT STORAGE TANK
- (3.13) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 3.00 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL=0.50 FOOT)
- ← INTERPRETED GROUNDWATER GRADIENT DIRECTION
- *

* GROUNDWATER ELEVATION NOT USED IN PREPARING CONTOURS

FIGURE 2
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP
NOVEMBER 13, 1995
 PORT OF OAKLAND
 BERTH 25
 707 FERRY STREET
 OAKLAND, CALIFORNIA
 PROJECT NO. 10-255



LEGEND

-  GROUNDWATER MONITORING WELL
- | | | |
|-------|---|---|
| TPH-G | B | T |
| E | X | |

 CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER
- | | |
|--------|--|
| TPH-D | |
| TPH-MO | |
- | | |
|--------|---|
| TPH-G | TOTAL PETROLEUM HYDROCARBONS AS GASOLINE |
| B | BENZENE |
| T | TOLUENE |
| E | ETHYLBENZENE |
| X | TOTAL XYLENES |
| TPH-D | TOTAL PETROLEUM HYDROCARBONS AS DIESEL |
| TPH-MO | TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL |
| ND | NOT DETECTED ABOVE REPORTED DETECTION LIMIT |

FIGURE 3
CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER
 NOVEMBER 13, 1995
 PORT OF OAKLAND
 BERTH 25
 707 FERRY STREET
 OAKLAND, CALIFORNIA
 PROJECT NO. 10-255



10255E-D.DWG 12-19-95 MAP 1-20

APPENDIX A

**FIELD PROCEDURES FOR
GROUNDWATER MONITORING WELL SAMPLING
AND WATER SAMPLING FIELD SURVEY FORMS**

**FIELD PROCEDURES
FOR
GROUNDWATER MONITORING WELL SAMPLING**

Groundwater Level Measurement

Before groundwater sampling, the groundwater level in each well was measured from a marked survey reference point at the top of the well casing. Groundwater in each well was monitored for free-floating product or sheen. The depth to groundwater was measured to an accuracy of 0.01 foot from the top of the PVC well casing using an electronic sounder.

Groundwater Monitoring Well Sampling

To ensure that the groundwater samples were representative of the aquifer, the wells were purged of 3 well casing volumes before sample collection. This purging was accomplished using a clean bailer or pump.

The groundwater samples were collected using a disposable bailer, and then transferred into laboratory-supplied containers. Care was taken to avoid turbulence when transferring the water samples, and volatile analysis vials were filled so that no air bubbles were trapped. The sampling technician wore nitrile gloves at all times during purging and well sampling. The samples were labeled with the well number, site identification, date and time of sample collection, and sampler's initials, and transported in an iced cooler maintained at 4 degrees Centigrade to Clayton Environmental Consultants, a state-certified laboratory, following preservation and chain of custody protocol.

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP

Groundwater Sampling

1575 TREAT BOULEVARD, SUITE 201

WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823

Date: 11/13/05 Project No. 10-255-01-004

Day: Mon Station No. _____

Weather: Sunny Address 707 Ferry St, Oakland CA

SAMPLER: DC

Well ID	SAMPLE#	WATER	DEPTH	Well ID	SAMPLE #	WATER	DEPTH	Well ID	SAMPLE	WATER DEPTH
MW-1	-	10.18	1020							

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	<input type="checkbox"/> EPA 601____ <input type="checkbox"/> TPH-G/BTEX____ <input type="checkbox"/> TPH Diesel____ <input type="checkbox"/> TOG 5520____ Time Sampled	
MW-1	10.18	2"	DN	Ø	Ø	1	1047	72.7	7.05	1.34			
Total Depth - Water Level=						x Well Vol. Factor=	x#vol. to Purge=	PurgeVol.					
$14.85 - 10.18 = 4.67 \times 1.16 = 0.75 \times 3 = 2.25$						2.25	1056	70.1	7.14	1.29			1100
Purge Method: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input checked="" type="checkbox"/> Disp. Baller(s) <input type="checkbox"/> OSys Port													
Comments:													

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	<input type="checkbox"/> EPA 601____ <input type="checkbox"/> TPH-G/BTEX____ <input type="checkbox"/> TPH Diesel____ <input type="checkbox"/> TOG 5520____ Time Sampled	
Total Depth - Water Level=						x Well Vol. Factor=	x#vol. to Purge=	PurgeVol.					
Purge Method: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Baller(s) <input type="checkbox"/> OSys Port													
Comments:													

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	<input type="checkbox"/> EPA 601____ <input type="checkbox"/> TPH-G/BTEX____ <input type="checkbox"/> TPH Diesel____ <input type="checkbox"/> TOG 5520____ Time Sampled	
Total Depth - Water Level=						x Well Vol. Factor=	x#vol. to Purge=	PurgeVol.					
Purge Method: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Baller(s) <input type="checkbox"/> OSys Port													
Comments:													

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	<input type="checkbox"/> EPA 601____ <input type="checkbox"/> TPH-G/BTEX____ <input type="checkbox"/> TPH Diesel____ <input type="checkbox"/> TOG 5520____ Time Sampled	
Total Depth - Water Level=						x Well Vol. Factor=	x#vol. to Purge=	PurgeVol.					
Purge Method: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Baller(s) <input type="checkbox"/> OSys Port													
Comments:													

APPENDIX B

**FIELD PROCEDURES FOR CHAIN OF CUSTODY DOCUMENTATION,
LABORATORY REPORT, AND CHAIN OF CUSTODY RECORD**

**FIELD PROCEDURES
FOR
CHAIN OF CUSTODY DOCUMENTATION**

The samples were handled in accordance with the California Department of Health Services guidelines. Samples were labeled in the field and immediately stored in coolers and preserved with blue ice for transport to a state-certified laboratory for analysis.

A chain of custody record accompanied the samples, and included the site and sample identification, date and time of collection, analysis requested, and the name and signature of the sampling technician. When transferring possession of the samples, the transferee signed and dated the chain of custody record.

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

November 29, 1995

Mr. Brady Nagle
ALISTO ENGINEERING GROUP
1575 Treat Blvd., Suite 201
Walnut Creek, CA 94598

Client Ref.: 10-2SS-01-004
Clayton Project No.: 95112.06

Dear Mr. Nagle:

Attached is our analytical laboratory report for the samples received on November 15, 1995. Following the cover letter is the Quality Control Narrative detailing sample information/problems and a summary of the quality control issues. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after December 29, 1995, unless you have requested otherwise.

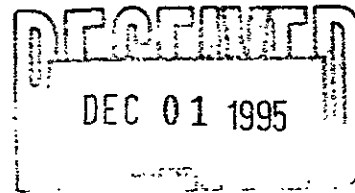
We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Andrew Brudler for
Harriotte A. Hurley, CIH
Director, Laboratory Services
San Francisco Regional Office

HAH/tjb

Attachments



QUALITY CONTROL NARRATIVE
for
Alisto Engineering Group
Client Reference: 10-2SS-01-004
Clayton Project No. 95112.06

Sample Information/Problems:

There were no problems with sample receipt.

Analytical Problems:

No problems were encountered with the sample analyses.

Quality Control:

The quality control data is summarized in the Quality Assurance Data Package, which follows the analytical report.

- MS/MSD: A matrix spike and matrix spike duplicate were analyzed where applicable, and all results were acceptable.
- LCS/LCSD: A laboratory control spike and duplicate were analyzed where applicable, and all results were acceptable.
- ICV/CCV: Response for all analytes met Clayton acceptance criteria.
- Surrogate Recoveries: All surrogate recoveries were acceptable. The surrogate recoveries, where applicable, are listed on the sample result pages.

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-2SS-01-004
Clayton Project No. 95112.06

Sample Identification:	MW-1	Date Sampled:	11/13/95
Lab Number:	9511206-01A	Date Received:	11/15/95
Sample Matrix/Media:	WATER	Date Prepared:	11/27/95
Preparation Method:	EPA 5030	Date Analyzed:	11/27/95
Method Reference:	EPA 8020	Analyst:	FAK

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	11-57-4	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	89	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-2SS-01-004
Clayton Project No. 95112.06

Sample Identification:	QC-1	Date Sampled:	11/13/95
Lab Number:	9511206-02A	Date Received:	11/15/95
Sample Matrix/Media:	WATER	Date Prepared:	11/27/95
Preparation Method:	EPA 5030	Date Analyzed:	11/27/95
Method Reference:	EPA 8020	Analyst:	FAK

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	11-57-4	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	95	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-2SS-01-004
Clayton Project No. 95112.06

Sample Identification:	QC-2	Date Sampled:	11/13/95
Lab Number:	9511206-03A	Date Received:	11/15/95
Sample Matrix/Media:	WATER	Date Prepared:	11/27/95
Preparation Method:	EPA 5030	Date Analyzed:	11/27/95
Method Reference:	EPA 8020	Analyst:	FAK

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	11-57-4	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	88	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-2SS-01-004
Clayton Project No. 95112.06

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9511206-04A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	11/27/95
Preparation Method:	EPA 5030	Date Analyzed:	11/27/95
Method Reference:	EPA 8020	Analyst:	FAK

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	11-57-4	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	93	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-2SS-01-004
Clayton Project No. 95112.06

Sample Identification:	See Below	Date Received:	11/15/95
Lab Number:	9511206	Date Extracted:	11/20/95
Sample Matrix/Media:	WATER	Date Analyzed:	11/21/95
Extraction Method:	EPA 3510		
Method Reference:	EPA 8015 (Modified)		

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-01	MW-1	11/13/95	110 a	50
-04	METHOD BLANK	--	ND	50

ND: Not detected at or above limit of detection
--: Information not available or not applicable

TPH-D = Extractable petroleum hydrocarbons from C10 to C20 quantitated as diesel.
a Sample does not match typical diesel pattern.

Analytical Results
 for
 Alisto Engineering Group
 Client Reference: 10-2SS-01-004
 Clayton Project No. 95112.06

Sample Identification: See Below	Date Received: 11/15/95
Lab Number: 9511206	Date Extracted: 11/20/95
Sample Matrix/Media: WATER	Date Analyzed: 11/21/95
Preparation Method: EPA 3510	
Method Reference: EPA 8015 (Modified)	

Lab Number	Sample Identification	Date Sampled	TPH-O (ug/L)	Method Detection Limit (ug/L)
-01	MW-1	11/13/95	1300	200
-04	METHOD BLANK	--	ND	200

ND: Not detected at or above limit of detection
 --: Information not available or not applicable

TPH-O = Extractable petroleum hydrocarbons from C20 to C42 quantitated as motor oil.

Analytical Results
 for
 Alisto Engineering Group
 Client Reference: 10-2SS-01-004
 Clayton Project No. 95112.06

Sample Identification: See Below
 Lab Number: 9511206
 Sample Matrix/Media: WATER
 Method Reference: EPA 160.1

Date Received: 11/15/95
 Date Analyzed: 11/17/95

Lab Number	Sample Identification	Date Sampled	Total Dissolved Solids (mg/L)	Method Detection Limit (mg/L)
-01	MW-1	11/13/95	1200	10
-04	METHOD BLANK	--	<10	10

ND: Not detected at or above limit of detection
 --: Information not available or not applicable

Quality Assurance Results Summary
Matrix Spike/Matrix Spike Duplicate Results
for
Clayton Project No. 95112.06

Quality Assurance Results Summary - Matrix Spike/Matrix Spike Duplicate
for
Clayton Project No. 95112.06

Clayton Lab Number: 9511206-LCS
Ext./Prep. Method: EPA 3510
Date: 11/20/95
Analyst: FHK
Std. Source: E951025-01W
Sample Matrix/Media: WATER

Analytical Method: EPA 8015
Instrument ID: 02883
Date: 11/20/95
Time: 21:36
Analyst: GUD
Units: UG/L
QC Batch No: 95112084

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	1,000	1,010	101	995	99	100	65	128	1.1	25

ND = Not detected at or above limit of detection
SOR = Spike out of range due to high sample concentration.

LCL = Lower Control Limit

UCL = Upper Control Limit

Quality Assurance Results Summary - Matrix Spike/Matrix Spike Duplicate
for
Clayton Project No. 95112.06

Clayton Lab Number: 9511246-06A
Ext./Prep. Method: EPA 5030
Date: 11/27/95
Analyst: FAK
Std. Source: V951109-02W
Sample Matrix/Media: WATER

Analytical Method: EPA 8015/8020
Instrument ID: 05587
Date: 11/28/95
Time: 06:22
Analyst: FAK
Units: ug/L
QC Batch No: 951127A1

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID) ND	4.39	4.84	110	4.68	107	108	79	125	3.4	20
ETHYLBENZENE	(PID) ND	5.56	5.21	94	5.13	92	93	91	123	1.5	20
GASOLINE	(FID) ND	500	492	98	505	101	100	80	120	2.6	25
TOLUENE	(PID) ND	24.8	23.7	96	23.2	94	95	84	118	2.1	20
TOTAL XYLENE	(PID) ND	35.1	31.6	90	31.1	89	89	85	115	1.6	20

ND = Not detected at or above limit of detection
SOR = Spike out of range due to high sample concentration.

LCL = Lower Control Limit

UCL = Upper Control Limit

Quality Assurance Results Summary - Laboratory Control Samples (LCS)
for
Clayton Project No. 95112.06

Clayton Lab Number: 9511249-LCS
Ext./Prep. Method: EPA 5030
Date: 11/27/95
Analyst: FAK
Std. Source: V951109-02W
Sample Matrix/Media: WATER

Analytical Method: EPA 8015/8020
Instrument ID: 05587
Date: 11/27/95
Time: 11:29
Analyst: FAK
Units: ug/L
QC Batch no: 951127A1

Analyte	Blank	Result	Spike Level	LCS Result	LCS		
					Recovery (%)	LCL (% R)	UCL (% R)
Benzene		ND	4.39	4.72	108	79	125
Ethylbenzene		ND	5.56	5.49	99	91	123
Gasoline		ND	500	527	105	80	120
SURR a,a,a-Trifluorotoluene		ND	100	90.0	90	50	150
Toluene		ND	24.8	24.2	98	84	118
Total Xylenes		ND	35.1	33.4	95	85	115

ND = Not detected at or above limit of detection LCL = Lower Control Limit UCL = Upper Control Limit

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only Page 1 of 1

Project No. _____

Batch No. **9511206**

Ind. Code _____ W.P. _____

Date Logged In 11/17 By [Signature]

REPORT RESULTS TO

Name Breda Naylor Title Project manager

Company Alisto Engineers Dept. _____

Mailing Address 1575 Walnut Blvd

City, State, Zip Walnut Creek CA 94598

Telephone No. (510) 225-1654 Telefax No. (510) 225-1823

Purchase Order No. 20157 Client Job No. 10-255-01-004

SEND INVOICE TO

Name Suzanne

Company Port of Oakland Dept. _____

Address Oakland CA (530 West St)

City, State, Zip Oakland CA

Date Results Req.: _____ Rush Charges Authorized? Yes No

Phone / Fax Results Phone Fax

Special Instructions: (method, limit of detection, etc.)
"P" = H₂O

* Explanation of Preservative: _____

Samples are: (check if applicable)

Drinking Water

Collected in the State of New York

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added.)

Number of Containers

Box (8020)
7043 5/11/95
20157
10/15

CLIENT SAMPLE IDENTIFICATION		DATE SAMPLED	MATRIX/MEDIA	AIR VOLUME (specify units)	Number of Containers	ANALYSIS REQUESTED										FOR LAB USE ONLY		
<u>ms-1</u>	<u>1100</u>	<u>11/3/95</u>	<u>H₂O</u>	<u>40ml</u>	<u>4</u>	<u>X</u>	<u>X</u>	<u>X</u>										<u>01A-D</u>
<u>QC-1</u>	<u>---</u>	<u>↓</u>		<u>40ml</u>	<u>2</u>	<u>↓</u>												<u>02 AB</u>
<u>QC-2</u>	<u>---</u>	<u>↓</u>		<u>40ml</u>	<u>2</u>	<u>↓</u>												<u>03 AB</u>

Collected by: [Signature] D. [Name] (print)

Relinquished by: [Signature] Date/Time 11-15-95 11:50

Relinquished by: [Signature] Date/Time 11-15-95 3:45

Method of Shipment: _____

Collector's Signature: [Signature]

Received by: [Signature] Date/Time 11-15-95 11:50

Received at Lab by: [Signature] Date/Time 11-15-95 3:45

Sample Condition Upon Receipt: Acceptable Other (explain)

Authorized by: _____ Date _____

(Client Signature Must Accompany Request)