PORT OF OAKLAND

September 16, 1996

Ms. Jennifer Eberle
Hazardous Materials Specialist
Alameda County Environmental Protection Division
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502-6577

SUBJECT: THIRD QUARTER 1996
GROUNDWATER MONITORING AND SAMPLING REPORT
BUILDING C-401, 2277 7TH STREET, OAKLAND
STID # 3899

Dear Jennifer:

Please find enclosed a copy of the Groundwater Monitoring and Sampling Report, Third Quarter 1996, prepared on the behalf of the Port of Oakland by Alisto Engineering Group (Alisto). The report, dated September 3, 1996, addresses groundwater monitoring and sampling and product recovery activities that were performed by Alisto at Building C-401, 2277 7th Street, Oakland, California.

Alisto's contract with the Port has expired. Future site activities will be conducted by Uribe and Associates through their Oakland office. Uribe will discontinue the weekly product removal by hand methods. Product removal will restart in approximately two weeks after Uribe completes the installation of an automated product only recovery system in wells MW-1, MW-3, and MW-8. The system proposed should increase the rate of product recovery.

If you have any questions, please feel free to contact me at 272-1373.

Sincerely,

John Prall, R.G.
Associate Environmental Scientist

Enclosure

cc (w/enclosure): Don Ringsby, Dongary Investments
Rich Hiett, RWQCB

bcc (w/o enclosure): Neil Werner

GROUNDWATER MONITORING AND SAMPLING REPORT
THIRD QUARTER 1996

Port of Oakland
Building C-401
2277 Seventh Street
Oakland, California

Project No. 10-270-04-002

Prepared for:

Port of Oakland
530 Water Street
Oakland, California

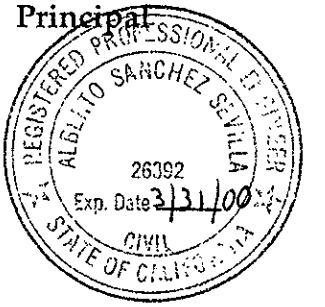
Prepared by:

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

September 3, 1996

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal



GROUNDWATER MONITORING AND SAMPLING REPORT
THIRD QUARTER 1996

Port of Oakland
Building C-401
2277 Seventh Street
Oakland, California

Project No. 10-270-04-002

September 3, 1996

INTRODUCTION

This report presents the results and findings of the groundwater monitoring and sampling conducted by Alisto Engineering Group at the Port of Oakland, Building C-401, 2277 Seventh Street, Oakland, California for the third quarter 1996. A site vicinity map is shown on Figure 1.

The monitoring and sampling was performed on July 10, 1996. Monitoring Wells MW-1, MW-3, and MW-8 were not sampled due to the presence of liquid-phase petroleum hydrocarbons.

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 each well was measured from a permanent mark on top of the casing to the nearest 0.01 foot using an electronic sounder. The depth to groundwater and top of casing elevation data were used to calculate the groundwater elevation in each well in reference to mean lower low water. The survey data and groundwater elevation measurements collected to date are presented in Table 1. The volume of liquid-phase hydrocarbons removed from Monitoring Wells MW-1, MW-3, and MW-8 is presented in Table 2.

Before sample collection, each well was purged of 3 casing volumes while recording field readings of pH, temperature, and electrical conductivity. Groundwater samples were collected for laboratory analysis by lowering a bottom-fill, disposable bailer to just below the water level in each 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 samples were analyzed by Clayton Environmental Consultants, Inc., a state-certified laboratory, for the following:

WELL ID	ANALYTE			
	TPH-G	BTEX	TPH-D	TPH-O
MW-1	---	---	---	---
MW-2	X	X	X	X
MW-3	---	---	---	---
MW-4	X	X	X	X
MW-5	X	X	X	X
MW-6	X	X	X	X
MW-7	X	X	X	X
MW-8	---	---	---	---

TPH-G Total petroleum hydrocarbons as gasoline, generally C4 to C12, using EPA Method 8015

BTEX Benzene, toluene, ethylbenzene, and total xylenes using EPA Method 8020

TPH-D Total petroleum hydrocarbons as diesel, generally C10 to C20, using EPA Method 8015 (modified)

TPH-O Total petroleum hydrocarbons as oil, generally C20 to C42, using EPA Method 8015 (modified)

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 as interpreted from the results of this monitoring event are shown on Figure 2. The results of groundwater analysis are shown on Figure 3. The field procedures for chain of custody documentation, laboratory report, and chain of custody record are presented in Appendix B.

RESULTS AND FINDINGS

The findings of the third quarter 1996 groundwater monitoring and sampling event are summarized as follows:

- Liquid-phase hydrocarbons were observed at thicknesses ranging from 0.03 to 5.34 feet in Monitoring Wells MW-1, MW-3, and MW-8.

- Groundwater elevations indicated a gradient of 0.001 foot per foot in a northerly direction across the site.

- Analysis of samples collected from the monitoring wells detected the following:

  - TPH-G at concentrations of 1200, 440, and 80 micrograms per liter (ug/l) in the samples collected from MW-4, MW-6, and MW-7. TPH-G was not detected in the samples collected from MW-2 and MW-5.

  - TPH-D at concentrations of 120, 120, 120, 8300, and 840 ug/l in the samples collected from MW-2, MW-4, MW-5, MW-6, and MW-7.

  - TPH-O at concentrations of 1400, 300, 1500, 5500, and 1700 ug/l in the samples collected from MW-2, MW-4, MW-5, MW-6, and MW-7.

  - Benzene, toluene, ethylbenzene, and total xylenes (BTEX) at concentrations of up to 470, 1.5, 3.0, and 2.7 ug/l in the samples collected from MW-4 and MW-6. BTEX were not detected in the samples collected from MW-2, MW-5, and MW-7.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
PORT OF OAKLAND, BUILDING C-401
2277 SEVENTH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-270

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION) (a) (feet)	DEPTH TO WATER (feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	TPH-O (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	LAB
MW-1	03/29/95	14.14	7.67	0.17	6.60	—	—	—	—	—	—	—	—
MW-1	09/06/95	14.14	9.45	0.77	5.27	—	—	—	—	—	—	—	—
MW-1	09/28/95	14.14	9.85	1.11	5.12	—	—	—	—	—	—	—	—
MW-1	12/27/95	14.14	9 04	0.53	5.50	—	—	—	—	—	—	—	—
MW-1	01/08/96	14.14	9.15	0.48	5 35	—	—	—	—	—	—	—	—
MW-1	04/04/96	14.14	8.50	0.25	5 83	—	—	—	—	—	—	—	—
MW-1	07/10/96	14.14	9.52	0.82	5.24	—	—	—	—	—	—	—	—
MW-2	05/27/94	14.36	8.01	—	6.35	87	470	—	ND<0.50	ND<0.50	ND<0.50	ND<0.50	D&M
MW-2	03/29/95	14 36	7.47	—	6.89	ND<50	110	1400	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
QC-1 (c)	03/29/95	—	—	—	—	ND<50	—	—	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
MW-2	09/06/95	14.36	9.04	—	5.32	ND<50	—	—	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
QC-1 (c)	09/06/95	—	—	—	—	ND<50	ND<60	400	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
MW-2	09/28/95	14.36	7.47	—	6.89	—	—	—	—	—	—	—	—
MW-2	12/27/95	14.36	8.95	—	5.41	—	—	—	—	—	—	—	—
MW-2	01/08/96	14.36	8.95	—	5.41	ND<50	ND<50	1200	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
MW-2	04/04/96	14.36	8.46	—	5.90	ND<50	160	320	ND<0.5	ND<0.5	ND<0.5	ND<1	PACE
MW-2	07/10/96	14.36	9.03	—	5.33	ND<50	120	1400	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
MW-3	03/29/95	14.22	9.59	2.93	6.83	—	—	—	—	—	—	—	—
MW-3	09/06/95	14.22	13.70	5.22	4.44	—	—	—	—	—	—	—	—
MW-3	09/28/95	14.22	13.60	5.80	4.97	—	—	—	—	—	—	—	—
MW-3	12/27/95	14.22	12.71	4.70	5 04	—	—	—	—	—	—	—	—
MW-3	01/08/96	14.22	13.10	4 94	4.83	—	—	—	—	—	—	—	—
MW-3	04/04/96	14.22	11.50	4.40	6.02	—	—	—	—	—	—	—	—
MW-3	07/10/96	14.22	13.28	5.34	4.95	—	—	—	—	—	—	—	—
MW-4	03/29/95	13 15	9 59	—	3.56	—	—	—	—	—	—	—	—
MW-4	09/06/95	13.15	8.48	—	4.67	—	—	—	—	—	—	—	—
MW-4	09/11/95	13.15	9.59	—	3.56	150	ND<200	500	23	ND<0 3	ND<0.3	ND<0.4	CEC
MW-4	09/28/95	13.15	9.59	—	3.56	—	—	—	—	—	—	—	—
MW-4	12/27/96	13.15	8.39	—	4.76	—	—	—	—	—	—	—	—
MW-4	01/08/96	13.15	8.42	—	4.73	790	90	400	170	1.2	0.6	0.6	CEC
MW-4	04/04/96	13.15	8.19	—	4.96	1100	180	300	320	1.6	1.1	1.2	PACE
QC-1 (c)	04/04/96	—	—	—	—	1200	—	—	320	2.2	0.57	1.2	PACE
MW-4	07/10/96	13.15	8.56	—	4.59	1200	120	300	470	1.5	0.8	0.8	CEC
MW-5	09/06/95	13.49	6.90	—	6.59	—	—	—	—	—	—	—	—
MW-5	09/11/95	13.49	9.59	—	3.90	90	ND<300	2500	3.3	ND<0.3	ND<0.3	ND<0.4	CEC
MW-5	09/28/95	13.49	9.59	—	3.90	—	—	—	—	—	—	—	—
MW-5	12/27/96	13.49	7.17	—	6.32	—	—	—	—	—	—	—	—
MW-5 (d)	01/08/96	13.49	—	—	—		—	—					
MW-5	04/04/96	13.49	6.44	—	7.05	ND<50	180	520	ND<0.5	ND<0.5	ND<0.5	ND<1	PACE
MW-5	07/10/96	13.49	6.79	—	6.70	ND<50	120	1500	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
PORT OF OAKLAND, BUILDING C-401
2277 SEVENTH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-270

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION) (a) (feet)	DEPTH TO WATER (feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	TPH-O (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	LAB
MW-6	09/06/95	14.00	7.40	2.93	8.80	---	---	---	---	---	---	---	---
MW-6	09/28/95	14.00	9.59	2.93	6.61	---	---	---	---	---	---	---	---
MW-6	12/27/96	14 00	8.07	---	5.93	---	---	---	---	---	---	---	---
MW-6	01/08/96	14.00	7.70	---	6.30	480	11000	6100	15	1.9	9.7	5.2	CEC
QC-1 (c)	01/08/96	---	---	---	---	530	---	---	15	1.9	12	6.4	CEC
MW-6	04/04/96	14.00	7.70	---	6.30	440	6100	1200	16	0.97	3.9	3	PACE
MW-6	07/10/96	14.00	7.55	---	6.45	550	8300	5500	16	0.9	3.0	2.7	CEC
MW-7	09/06/95	14.35	9.10	---	5.25	ND<50	ND<300	800	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
MW-7	09/28/95	14.35	9.74	---	4.61	---	---	---	---	---	---	---	---
MW-7	12/27/96	14.35	9 06	---	5.29	---	---	---	---	---	---	---	---
MW-7	01/08/96	14.35	9.06	---	5.29	ND<50	410	1100	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
MW-7	04/04/96	14.35	8.57	---	5.78	ND<50	530	340	ND<0.5	ND<0.5	ND<0.5	ND<1	PACE
MW-7	07/10/96	14.35	9.11	---	5.24	80	840	1700	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
MW-8	09/06/95	12.94	7.84	---	5.10	---	---	---	---	---	---	---	---
MW-8	09/28/95	12.94	8.91	0.12	4.12	---	---	---	---	---	---	---	---
MW-8	12/27/95	12 94	8.61	0.31	4.56	---	---	---	---	---	---	---	---
MW-8	01/08/96	12.94	8.80	0.45	4.48	---	---	---	---	---	---	---	---
MW-8	04/04/96	12.94	8.37	0.05	4.61	---	---	---	---	---	---	---	---
MW-8	07/10/96	12.94	9.44	0.03	3.52	---	---	---	---	---	---	---	---
QC-2 (e)	03/29/95	---	---	---	---	ND<50	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
QC-2 (e)	09/06/95	---	---	---	---	ND<50	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
QC-2 (e)	09/28/95	---	---	---	---	ND<50	---	---	ND<0 4	ND<0.3	ND<0.3	ND<0.4	CEC
QC-2 (e)	01/08/96	---	---	---	---	ND<50	---	---	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC
QC-2 (e)	04/04/96	---	---	---	---	ND<50	---	---	ND<0.5	ND<0.5	ND<0.5	ND<1	PACE
QC-2 (e)	07/10/96	---	---	---	---	ND<50	ND<50	ND<200	ND<0.4	ND<0.3	ND<0.3	ND<0.4	CEC

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel (C10 to C20)
TPH-O	Total petroleum hydrocarbons as oil (C20 to C42)
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
ug/l	Micrograms per liter
---	Not analyzed/applicable/measured
ND	Not detected above reported detection limit
D&M	D&M Laboratories
CEC	Clayton Environmental Consultants, Inc.
PACE	Pace Analytical Services, Inc.

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 in feet above mean lower low water.

(c) Blind duplicate.

(d) Well inaccessible.

(e) Travel blank.

TABLE 2 - LIQUID-PHASE HYDROCARBON REMOVAL STATUS
PORT OF OAKLAND, BUILDING C-401
2277 SEVENTH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-270

WELL ID	DATE	CASING ELEVATION (a) (feet)	DEPTH TO WATER (feet)	DEPTH TO PRODUCT	PRODUCT THICKNESS	GROUNDWATER ELEVATION (b) (Feet)	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)	
MW-1	06/30/94	14.17	9.75	9 20	0 55	4 83	1.5	1 5	(c)
	07/08/94	14.17	9.88	9.12	0.76	4.86	1.5	3.0	(c)
	07/14/94	14 17	9.90	9.12	0.78	4.86	1.5	4.5	(c)
	7/21-22/94	14.17	9.78	9.16	0.62	4.86	1.5	6.0	(c)
	07/29/94	14.17	10.30	9.13	0.87	4 52	3.0	9.0	(c)
	08/03/94	14.17	10.00	9 19	1 11	5.00	3 0	12 0	(c)
	08/11/94	14.17	10.51	9.24	1.27	4.61	3.0	15.0	(c)
	08/18/94	14.17	10.38	9 25	1 13	4.64	3.0	18 0	(c)
	09/29/94	14.17	10.50	9.30	1.20	4.57	3.0	21.0	(c)
	10/04/94	14.17	9.75	9.30	0.45	4.76	1.5	22.5	(c)
	10/14/94	14.17	10.05	9.25	0.80	4.72	1.5	24.0	(c)
	10/21/94	14 17	10.84	9.49	1.35	4.34	---	24.0	(c)
	11/02/94	14.17	10.26	9.44	0.82	4.53	2.5	26.5	(c)
	11/10/94	14.17	9.80	8.45	1 35	5.38	3.0	29.5	(c)
	11/18/94	14.17	9.76	8 78	0.98	5.15	3.0	32.5	(c)
	12/08/94	14.17	9.46	8.69	0.77	5 29	3.0	35.5	(c)
	01/20/95	14.17	8 01	7.73	0.28	6.37	2.0	37.5	(c)
	01/27/95	14.17	7.54	7.52	0.02	6.65	2.0	39.5	(c)
	02/10/95	14.17	8.15	7.92	0.23	6.19	2.0	41.5	(c)
	02/16/95	14.17	8.40	8.18	0.23	5.94	1.0	42.5	(c)
	02/23/95	14.17	8 46	8.21	0.25	5.90	2.0	44.5	(c)
	03/03/95	14.17	8 25	8.15	0.10	6.00	2.0	46 5	(c)
	03/10/95	14.17	7.63	7.53	0.10	6.62	2.0	48.5	(c)
	03/17/95	14.17	8.00	7.80	0.20	6.32	2.0	50.5	(c)
	04/07/95	14.17	—	---	---	14.17	2.0	52.5	
	04/14/95	14.17	—	---	---	14.17	3.0	55.5	
	04/19/95	14.17	8.34	7.10	0 24	6.01	0.5	56.0	
	04/26/95	14.17	8.26	7.98	0 28	6.12	1 0	57.0	
	05/03/95	14.17	8.77	8.47	0.30	5.63	0.5	57.5	
	05/12/95	14.17	8 33	7.87	0.46	6.19	2 0	59.5	
	05/16/95	14.17	8.42	8 64	0.22	5.92	1.5	61 0	
	05/23/95	14.17	8 68	8 51	0.17	5.62	1.5	62.5	
	05/31/95	14.17	8.71	8 54	0.17	5.59	1.0	63.5	
	06/07/95	14.17	8.77	8.61	0.16	5.52	2.5	66.0	
	06/14/95	14.17	9.51	7 88	1.63	5.88	5.0	71 0	
	06/23/95	14.17	9.60	8 20	1.40	5.62	4.0	75.0	
	06/28/95	14.17	8.41	7.61	0.80	6.36	15 0	90.0	
	07/07/95	14.17	8.70	8.09	0.61	5.93	8 0	98.0	
	07/10/95	14.17	8.91	8.00	0.91	5.94	12 0	110.0	
	07/19/95	14.17	8.87	8.49	0.38	5.59	10.0	120.0	
	07/28/95	14.17	9.01	8.54	0 47	5.51	10 0	130.0	
	08/04/95	14.17	9 20	8.76	0.44	5.30	8.0	138.0	
	08/11/95	14.17	9 30	9.07	0.23	5.04	6.0	144.0	
	08/14/95	14.17	9 06	8 52	0.54	5.52	4.0	148 0	
	08/17/95	14.17	8.89	8 41	0 48	5.64	8.0	156 0	
	08/23/95	14.17	9.55	8.95	0.60	5.07	5.0	161.0	
	09/07/95	14.17	9.42	8.87	0.55	5.16	11.0	172.0	
	09/15/95	14.17	9 21	8.98	0.23	5.13	12.0	184.0	
	09/20/95	14.17	9.23	8.79	0.44	5 27	5.0	189.0	
	10/06/95	14.17	9 45	9.14	0.31	4 95	8.0	197.0	
	10/11/95	14.17	9.08	8.48	0.60	5 54	4.0	201.0	
	10/18/95	14.17	9.20	8.72	0.48	5.33	8.0	209.0	
	10/26/95	14.17	9.11	8.43	0 68	5.57	8 0	217.0	
	11/01/95	14.17	8.98	8.52	0.46	5.54	8.0	225.0	
	11/06/95	14.17	9.32	8.86	0.46	5.20	10.0	235.0	
	11/21/95	14.17	9 44	8.78	0.66	5.23	6.0	241.0	
	11/25/95	14.17	9.22	8.38	0.84	5.58	5.0	246.0	
	12/15/95	14.17	9 36	8.65	0.71	5 34	3 0	249.0	
	01/05/96	14.17	9.08	8.64	0.44	5.42	8 0	257.0	
	01/13/96	14.17	9 33	8.79	0.54	5.25	4 0	261.0	
	01/30/96	14.17	9.66	8.62	1.04	5.29	4.0	265.0	
	02/09/96	14.17	9.44	8.91	0.53	5.13	4.0	269.0	
	02/23/96	14.17	9.63	8.95	0.68	5.05	4 0	273.0	
	03/08/96	14 17	9.58	9 09	0.49	4.96	4 0	277.0	
	03/13/96	14.17	9.66	9.18	0.48	4.87	4.0	281 0	
	04/05/96	14 17	8.70	8.45	0.25	0.00	8 0	289.0	
	04/26/96	14.17	8 91	8.55	0.36	5.53	4.0	293 0	
	05/17/96	14.17	8.87	8.44	0.43	5.62	5.0	298.0	
	06/02/96	14.17	9 01	8.28	0.73	5.71	5.0	303 0	
	06/07/96	14 17	9.20	8 56	0.64	5.45	10.0	313.0	
	06/10/96	14.17	9 30	8.83	0.47	5.22	5.0	318.0	
	06/17/96	14 17	9 06	8 33	0.73	5.66	8.0	326.0	
	06/28/96	14.17	8.89	8 22	0.67	5.78	15 0	341.0	
	07/10/96	14.17	9.55	8.73	0 82	5 24	10.0	351.0	
	07/16/96	14.17	9 42	8 54	0.88	5.41	10.0	361.0	
	07/24/96	14.17	9.21	8.42	0.79	5 55	5.0	366.0	
	08/01/96	14.17	9 23	8.36	0.87	5.59	15.0	381.0	
	08/13/96	14 17	9.34	8 33	0.77	5.41	15.0	396.0	

TABLE 2 - LIQUID-PHASE HYDROCARBON REMOVAL STATUS
PORT OF OAKLAND, BUILDING C-401
2277 SEVENTH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-270

WELL ID	DATE	CASING ELEVATION (a) (feet)	DEPTH TO WATER (feet)	DEPTH TO PRODUCT	PRODUCT THICKNESS	GROUNDWATER ELEVATION (b) (Feet)	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-3	06/30/94	14.24	14.97	8.83	6.14	3.88	45 0	45.0
	07/08/94	14.24	14.85	8.34	6.51	4 27	45.0	90.0
	07/14/94	14.24	14.41	8.35	6.06	4 38	45.0	135.0
	7/21-22/94	14 24	14.32	8.45	5.87	4.32	45.0	180.0
	07/29/94	14.24	14.45	8.90	5.55	3.95	18.0	198 0
	08/03/94	14.24	14.45	8 45	6.00	4 29	30.0	228 0
	08/11/94	14.24	14.45	9.52	4.93	3 49	30.0	258.0
	08/18/94	14.24	14.38	9.48	4.90	3 54	45.0	303 0
	09/23/94	14.24	14.45	8 75	5.70	4.07	100 0	403.0
	09/29/94	14.24	14.45	8.85	5.60	3 99	165.0	568 0
	10/04/94	14.24	14.50	8.65	5.85	4.13	165 0	733.0
	10/14/94	14.24	14.50	9.60	4.90	3 42	165 0	898.0
	10/21/94	14.24	14.50	8.88	5.62	3 96	90.0	988.0
	11/02/94	14 24	14.50	8.79	5.71	4.02	50.0	1038 0
	11/10/94	14 24	13.12	8.07	5.05	4 91	---	1038 0
	11/18/94	14.24	13.10	7.91	5.19	5.03	90 0	1128.0
	12/08/94	14.24	13.58	7.95	5.63	4.88	50.0	1178.0
	01/20/95	14 24	10.11	7.09	3.02	6.40	40.0	1218.0
	01/27/95	14.24	11.09	7.15	3.94	6.11	20.0	1238 0
	02/10/95	14.24	11.05	7.05	4.00	6.19	0 0	1238.0
	02/16/95	14 24	12.10	7.20	4.90	5.82	140.0	1378 0
	02/23/95	14.24	12.00	7.33	4.67	5.74	100.0	1478.0
	03/03/95	14.24	12.25	7.40	4.85	5 63	150 0	1628 0
	03/10/95	14.24	10.40	7.10	3 30	6.32	150.0	1778.0
	03/17/95	14.24	9.80	6.90	2.90	6 62	165 0	1943.0
	03/31/95	14.24	---	6.60	---	---	100 0	2043.0
	04/07/95	14.24	---	6.80	---	---	160.0	2203.0
	04/14/95	14.24	---	6.90	---	---	160.0	2363.0
	04/19/95	14.24	11.30	4.26	7.04	8 22	110.0	2473.0
	04/26/95	14 24	11.11	4.83	6.28	7.84	125.0	2598 0
	05/03/95	14.24	10.84	4.89	5.95	7.86	130.0	2728.0
	05/12/95	14 24	11.08	4 86	6.22	7.83	140.0	2868 0
	05/16/95	14 24	11.11	4.72	6.39	7.92	150.0	3018.0
	05/23/95	14.24	11.09	4 63	6 46	8.00	100.0	3118 0
	05/31/95	14 24	10 84	5 20	5.64	7.63	100.0	3218 0
	06/07/95	14.24	12 26	7 33	4.93	5.68	150.0	3368 0
	06/14/95	14.24	12.01	6.21	5.80	6.58	90.0	3458.0
	06/23/95	14.24	12 21	6.12	6 09	6.60	100.0	3558.0
	06/28/95	14.24	11.04	5.76	5 28	7.16	125 0	3683.0
	07/07/95	14.24	10.82	4.61	6.21	8.08	70.0	3753.0
	07/10/95	14.24	10 96	5 25	5 71	7.56	40.0	3793.0
	07/19/95	14.24	10.80	4.80	6.00	7 94	100 0	3893.0
	07/28/95	14 24	10.78	5.68	5.10	7 29	180 0	4073.0
	08/04/95	14.24	12.76	7.88	4.88	5.14	60.0	4133.0
	08/11/95	14 24	12.75	7.52	5.23	5.41	40.0	4173.0
	08/14/95	14.24	13.01	7.99	5.02	5 00	55.0	4228.0
	08/17/95	14.24	14.01	8.02	5.99	4.72	60.0	4288.0
	08/23/95	14 24	13.27	8.42	4.85	4 61	75.0	4363 0
	09/07/95	14.24	12.99	8.33	4.66	4.75	30.0	4393.0
	09/15/95	14 24	10.55	5.66	4.89	7.36	55 0	4448.0
	09/20/95	14 24	12.67	7.45	5.22	5.49	70 0	4518.0
	10/06/95	14.24	13.65	7.77	5.88	5.00	55.0	4573 0
	10/11/95	14 24	11.58	6.73	4 85	6.30	55.0	4628.0
	10/18/95	14.24	11.28	5 29	5.99	7.45	60.0	4688 0
	10/26/95	14.24	10 22	5 26	4 96	7.74	45.0	4733.0
	11/01/95	14 24	9.88	4.92	4.96	8 08	40.0	4773.0
	11/06/95	14.24	10.22	4 84	5.38	8.06	70.0	4843.0
	11/21/95	14.24	10 30	5.59	4 71	7.47	60.0	4903.0
	11/25/95	14 24	12.11	6.80	5.31	6 11	30.0	4933.0
	12/15/95	14.24	11 88	6.11	5 77	6.69	40.0	4973.0
	01/05/96	14 24	10.34	5.46	4.88	7 56	55.0	5028.0
	01/13/96	14.24	9 65	4 63	5.02	8.36	55.0	5083 0
	01/30/96	14.24	11.62	5.94	5.68	6.88	55.0	5138.0
	02/09/96	14.24	12.33	7.37	4.96	5 63	55 0	5193.0
	02/23/96	14 24	11 21	5.90	5.31	7.01	55.0	5248 0
	03/08/96	14.24	11.56	5.67	5 89	7.10	55 0	5303.0
	03/13/96	14 24	12.32	6.24	6.08	6.48	55.0	5358.0
	04/05/96	14 24	10 80	6.40	4.40	6.74	50.0	5408.0
	04/26/96	14 24	10.78	6.02	4.76	7.03	50.0	5458.0
	05/17/96	14.24	12.76	8.04	4.72	5.02	100.0	5558.0
	06/02/96	14 24	12.75	8.37	4.38	4.78	60.0	5618.0
	06/07/96	14 24	13 01	8 05	4.96	4.95	60.0	5678.0
	06/10/96	14.24	14.01	9 05	4 96	3 95	35.0	5713.0
	06/17/96	14 24	12.76	7.55	5.21	5.39	50.0	5763 0
	06/28/96	14 24	12 75	7 71	5.04	5.27	40.0	5803.0
	07/10/96	14.24	13 01	7.67	5.34	5 24	50.0	5853.0
	07/16/96	14 24	14.01	8.78	5.23	4.15	55.0	5908 0
	07/24/96	14 24	13.27	8.29	4.98	4.71	20 0	5928.0
	08/01/96	14.24	12.32	7.12	5.20	5 82	60.0	5988.0
	08/13/96	14.24	11.88	6.90	4 98	6.10	15.0	6003.0

TABLE 2 - LIQUID-PHASE HYDROCARBON REMOVAL STATUS
PORT OF OAKLAND, BUILDING C-401
2277 SEVENTH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-270

WELL ID	DATE	CASING ELEVATION (a) (feet)	DEPTH TO WATER (feet)	DEPTH TO PRODUCT	PRODUCT THICKNESS	GROUNDWATER ELEVATION (b) (Feet)	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-8	12/15/95	12.94	8.87	8.77	0.10	4.15	0.1	0.1
	01/05/96	12.94	9.02	8.96	0.06	3.97	0.5	0.6
	01/13/96	12.94	8.99	8.95	0.04	3.98	0.5	1.1
	01/30/96	12.94	9.01	8.95	0.06	3.98	0.5	1.6
	02/09/96	12.94	9.05	8.94	0.11	3.97	0 5	2.1
	02/23/96	12 94	9.12	9.09	0.03	3 84	0 5	2.6
	03/08/96	12.94	9.03	8.83	0.20	4.06	0.5	3.1
	03/13/96	12.94	9.11	8.95	0.16	3.95	0.5	3.6
	04/05/96	12.94	8.72	8.67	0.05	4 26	0.8	4.4
	04/26/96	12.94	8.33	8.29	0.04	4.64	0.5	4.9
	05/17/96	12.94	8.66	8.62	0.04	4.31	0.5	5.4
	06/02/96	12.94	8 95	8 93	0.02	4.01	0.3	5.6
	06/07/96	12.94	8.12	8.10	0.02	4.84	0 5	6.1
	06/10/96	12.94	8 44	8.38	0.06	4.55	0.6	6.7
	06/17/96	12.94	7.92	7 88	0.04	5.05	0.5	7.2
	06/28/96	12.94	9.02	8.98	0 04	3.95	2.0	9 2
	07/10/96	12.94	9.11	9.08	0.03	3.85	0.5	9.7
	07/16/96	12.94	8.77	8.74	0.03	4.19	0.3	10.0
	07/24/96	12.94	9.01	8 83	0.18	4.07	0.3	10.2
	08/01/96	12.94	9.11	9.07	0.04	3.86	0.3	10.5
	08/13/96	12.94	9.55	9.53	0.02	3.40	0.3	10.8

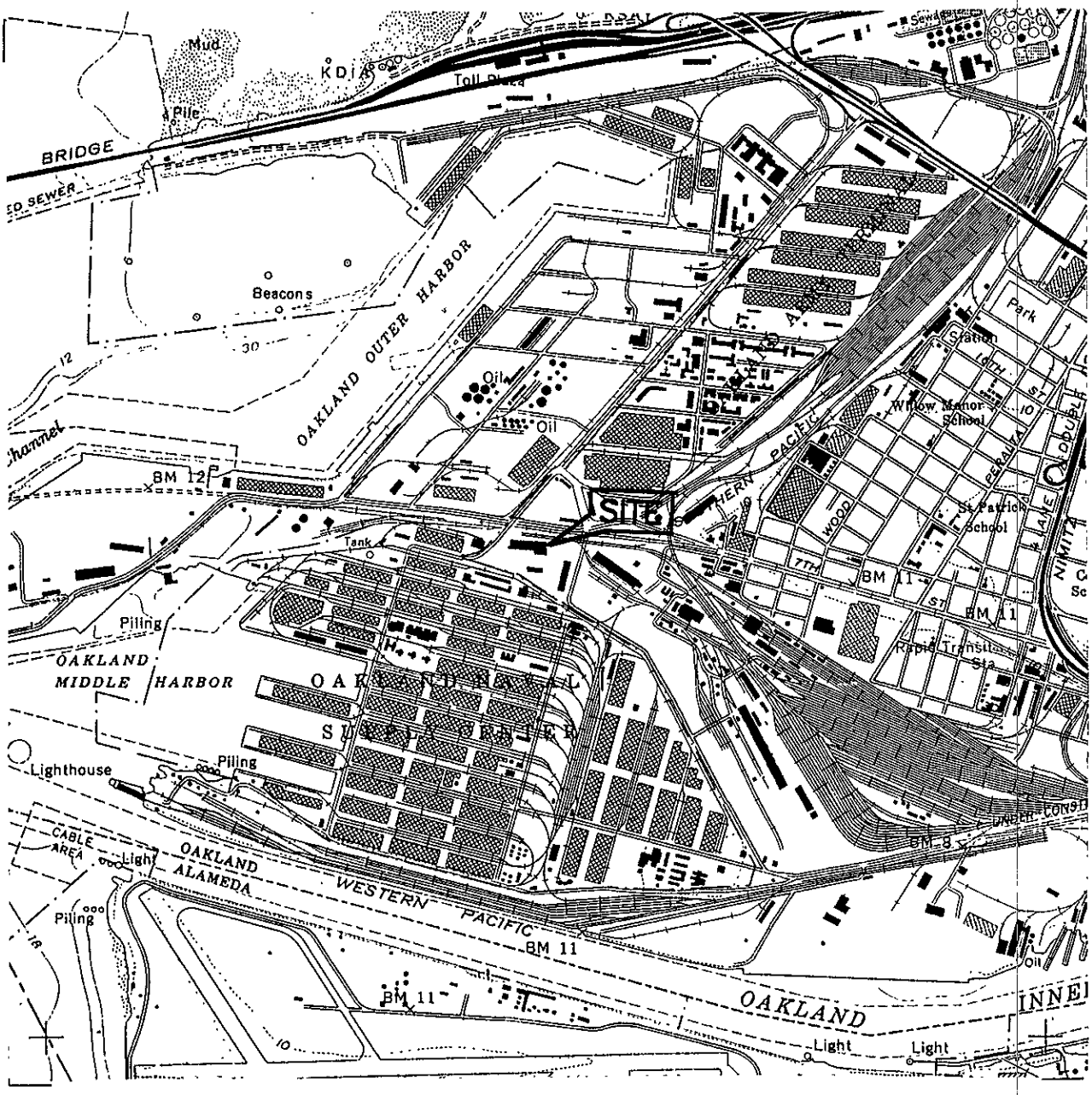
NOTES:

(a) 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 adjusted assuming a specific gravity of 0.75 for the liquid-phase hydrocarbons.

(c) The estimated amount bailed is approximately 75% product and 25% water

E:\0\10-270\PRODUCT



SOURCE:
USGS MAP, OAKLAND WEST QUADRANGLE,
7.5 MINUTE SERIES. 1959.
PHOTOREVISED 1980.

N

0 1000' 2000'

FIGURE 1

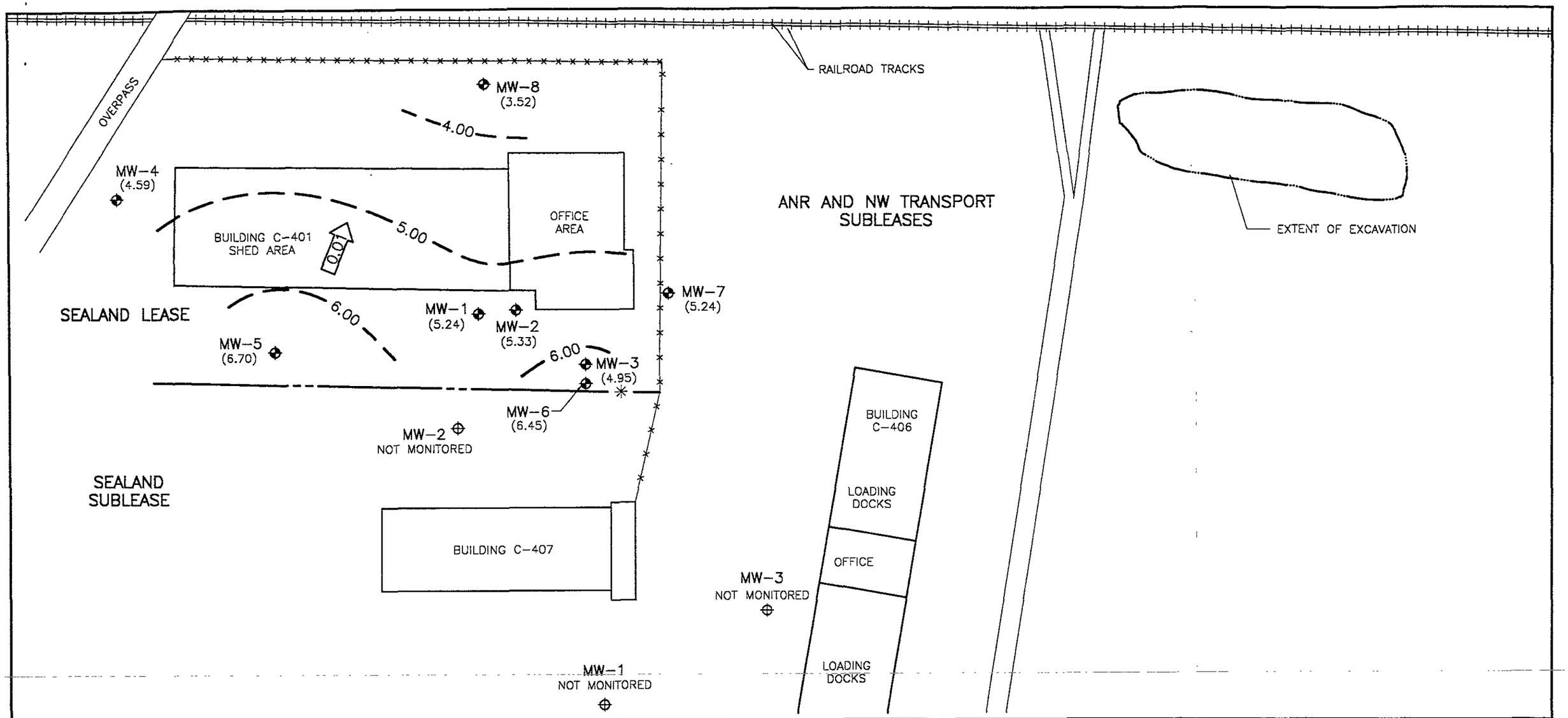
SITE VICINITY MAP

PORT OF OAKLAND
BUILDING C-401
2277 SEVENTH STREET
OAKLAND, CALIFORNIA

PROJECT NO. 10-270

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10270B---DWG 5-9-95 RKW 1=1



LEGEND

- ⊕ EXISTING PORT OF OAKLAND GROUNDWATER MONITORING WELL
- ⊕ EXISTING DONGARY INVESTMENTS GROUNDWATER MONITORING WELL
- (5.33) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 6.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL=1.0 FOOT)
- 0.01 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
- ✳ GROUNDWATER ELEVATION NOT USED IN PREPARING CONTOURS

N

0 100 200

SCALE IN FEET

FIGURE 2

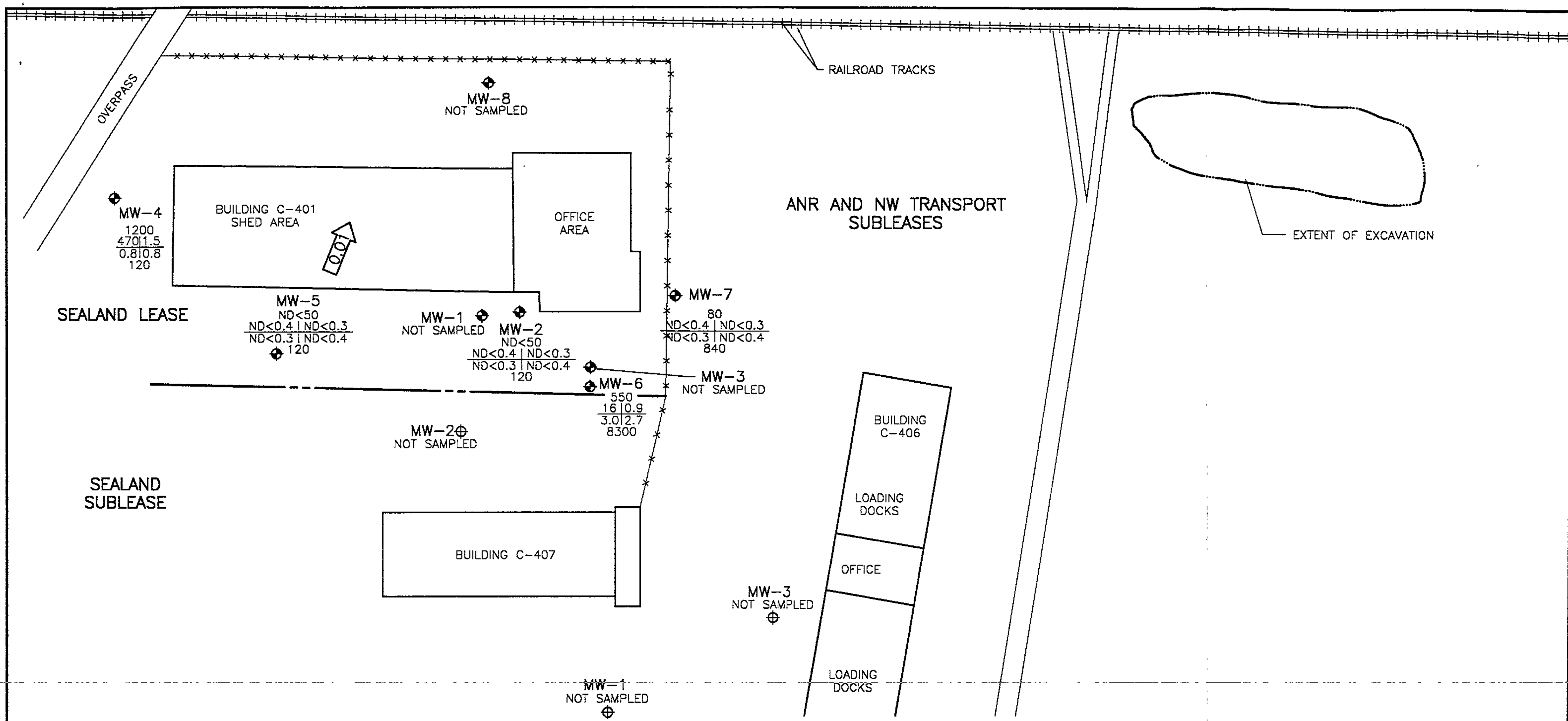
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

JULY 10, 1996

PORT OF OAKLAND
BUILDING C-401
2277 SEVENTH STREET
OAKLAND, CALIFORNIA

PROJECT NO. 10-270

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA



LEGEND

Symbol	Description
⊕ (bold)	EXISTING PORT OF OAKLAND GROUNDWATER MONITORING WELL
⊕	EXISTING DONGARY INVESTMENTS GROUNDWATER MONITORING WELL
TPH-G; B T; E X; TPH-D	CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER
TPH-G	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
TPH-D	TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ND	NOT DETECTED ABOVE REPORTED DETECTION LIMIT
⇦ 0.01	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

N

0 100 200

SCALE IN FEET

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

JULY 10, 1996

PORT OF OAKLAND
BUILDING C-401
2277 SEVENTH STREET
OAKLAND, CALIFORNIA

PROJECT NO. 10-270

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

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 beginning 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 all 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
1575 TREAT BOULEVARD, SUITE 201

Project No. 10-270-04-002 Date: 7/10/96
Address 2277 7th St. Day: M T (W) TH F
Contract No. City: Oakland
Station No. Sampler: LB

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ~~ID~~ Order	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME ~~SAMPLED~~ Measured	COMMENTS:
MW-1	7	2"	N/M	9.52	.82	~~0930~~	DTP = 8.70'
MW-2	2		15.00	9.03	Ø	0855	
MW-3	8		N/M	13.28	5.34	0940	DTP = 7.94
MW-4	3		18.00	8.56	Ø	0900	
MW-5	5		18.48	6.79	Ø	0920	
MW-6	4		15.00	7.55	Ø	0910	
MW-7	1		17.15	9.11	Ø	0850	
MW-8	6	↓	N/M	9.44	.03	0944	DTP = 9.41'

FIELD INSTRUMENT CALIBRATION DATA

pH METER Aqua Check 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED (Y) N TIME 0950

D.O. METER Aqua Check ZERO d.O. SOLUTION 0 BAROMETRIC PRESSURE 760 TEMP 67 WEATHER Cloudy

CONDUCTIVITY METER Aqua Check 10,000 _____ TURBIDITY METER _____ 5.0 NTU _____ OTHER _____

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-7	9.11	2"	OK	Ø	Y (N)	1	1000	70.9	8.34	2.03ms	3.3
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			2		70.1	8.21	1.98ms	
17.15 - 9.11 = 8.04	x .16 = 1.29	x3 =	3.87			4	1012	69.8	8.16	2.00ms	3.0

Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments:

O EPA 601 ____
⊗ TPH-G/BTEX HCL
⊗ TPH Diesel +M/O HCL
O TOG 5520 ___
TIME/SAMPLE ID
1022

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-2	9.03	2"	OK	Ø	Y (N)	1	1026	70.6	8.45	2.21ms	5.1
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			2		70.2	8.31	2.09ms	
15.00 - 9.03 = 5.97	x .16 = .96	x3 =	2.88			3	1032	69.8	8.27	2.04ms	4.5

Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments:

O EPA 601 ____
⊗ TPH-G/BTEX HCL
⊗ TPH Diesel +M/O HCL
O TOG 5520 ___
TIME/SAMPLE ID
1040

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94598 (510) 295-1650 FAX 295-1823

Project No. 10-270-4-2
Address Port of Oakland Oakland, CA
Contract No.
Station No.

Well ID	Depth to Wate	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-4	8.56	2"	OK	Ø	Y (N)	2	1050	68.5	8.63	1.42ms	2.3
						3		69.2	8.51	1.31ms	
						5	1056	70.1	8.43	1.28ms	2.0

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.
18.00 - 8.56 = 9.44 X .16 = 1.51 X 3 = 4.53

Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port

Comments:

O EPA 601___
X TPH-G/BTEX HCl
X TPH Diesel/MO HCl
O TOG 5520___

TIME/SAMPLE ID: 1100

Well ID	Depth to Wate	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-6	7.55	2"	OK	Ø	Y (N)	1	1104	72.3	8.54	4.20ms	4.3
						3		71.7	8.22	4.11ms	
						4	1110	71.1	8.20	4.03ms	3.6

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.
15.00 - 7.55 = 7.45 x .16 = 1.19 X 3 = 3.57

Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port

Comments:

O EPA 601___
X TPH-G/BTEX HCl
X TPH Diesel/MO HCl
O TOG 5520___

TIME/SAMPLE ID: 1120

Well ID	Depth to Wate	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-5	6.79	2"	OK	Ø	Y (N)	2	1126	70.2	8.61	2.20ms	2.8
						4		69.9	8.50	2.11ms	
						6	1131	69.3	8.21	2.05ms	3.0

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.
18.48 - 6.79 = 11.69 X .16 = 1.87 X 3 = 5.61

Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port

Comments:

O EPA 601___
X TPH-G/BTEX HCl
X TPH Diesel/MO HCl
O TOG 5520___

TIME/SAMPLE ID: 1140

Well ID	Depth to Wate	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
					Y N						

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.

Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port

Comments:

O EPA 601___
~~X TPH-G/BTEX HCl~~
~~X TPH Diesel/MO HCl~~
O TOG 5520___

TIME/SAMPLE ID:

Well ID	Depth to Wate	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
					Y N						

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.

Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port

Comments:

O EPA 601___
~~X TPH-G/BTEX HCl~~
~~X TPH Diesel/MO HCl~~
O TOG 5520___

TIME/SAMPLE ID:

APPENDIX B

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

FIELD PROCEDURES
FOR
CHAIN OF CUSTODY DOCUMENTATION

Samples were handled in accordance with the California Department of Health Services guidelines. The 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.

San Francisco Regional Office

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

Clayton
ENVIRONMENTAL
CONSULTANTS

July 29, 1996

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

Client Ref.: 10-270-4-2
Clayton Project No.: 96071.25

Dear Mr. Nagle:

Attached is our analytical laboratory report for the samples received on July 10, 1996. 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 August 23, 1996, 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,

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

HAH/tjb

Attachments

RECEIVED
JUL 30 1996

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-270-4-2
Clayton Project No. 96071.25

Sample Identification:	MW-5	Date Sampled:	07/10/96
Lab Number:	9607125-04A	Date Received:	07/10/96
Sample Matrix/Media:	WATER	Date Prepared:	07/11/96
Preparation Method:	EPA 5030	Date Analyzed:	07/11/96
Method Reference:	EPA 8015/8020	Analyst:	DTL

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
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	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	105	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: 10-270-4-2
Clayton Project No. 96071.25

Sample Identification:	MW-4	Date Sampled:	07/10/96
Lab Number:	9607125-03A	Date Received:	07/10/96
Sample Matrix/Media:	WATER	Date Prepared:	07/11/96
Preparation Method:	EPA 5030	Date Analyzed:	07/11/96
Method Reference:	EPA 8015/8020	Analyst:	DTL

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	470	0.4
Ethylbenzene	100-41-4	0.8	0.3
Toluene	108-88-3	1.5	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	0.8	0.4
Gasoline	--	1200	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	107	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: 10-270-4-2
Clayton Project No. 96071.25

Sample Identification:	MW-2	Date Sampled:	07/10/96
Lab Number:	9607125-02A	Date Received:	07/10/96
Sample Matrix/Media:	WATER	Date Prepared:	07/11/96
Preparation Method:	EPA 5030	Date Analyzed:	07/11/96
Method Reference:	EPA 8015/8020	Analyst:	DTL

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
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	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	109	50 - 150

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

QUALITY CONTROL NARRATIVE
for
Alisto Engineering Group
Client Reference: 10-270-4-2
Clayton Project No. 96071.25

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: 10-270-4-2
Clayton Project No. 96071.25

Sample Identification:	MW-6	Date Sampled:	07/10/96
Lab Number:	9607125-05A	Date Received:	07/10/96
Sample Matrix/Media:	WATER	Date Prepared:	07/11/96
Preparation Method:	EPA 5030	Date Analyzed:	07/11/96
Method Reference:	EPA 8015/8020	Analyst:	DTL

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	16	0.4
Ethylbenzene	100-41-4	3.0	0.3
Toluene	108-88-3	0.9	0.3
o-Xylene	95-47-6	1.3	0.4
p,m-Xylenes	--	1.4	0.4
Gasoline	--	550 a	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	104	50 - 150

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

a Purgeable hydrocarbons quantitated as gasoline may be due to heavier petroleum product.

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-270-4-2
Clayton Project No. 96071.25

Sample Identification:	MW-7	Date Sampled:	07/10/96
Lab Number:	9607125-01A	Date Received:	07/10/96
Sample Matrix/Media:	WATER	Date Prepared:	07/11/96
Preparation Method:	EPA 5030	Date Analyzed:	07/11/96
Method Reference:	EPA 8015/8020	Analyst:	DTL

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
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	--	ND	0.4
Gasoline	--	80	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	104	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: 10-270-4-2
Clayton Project No. 96071.25

Sample Identification:	QC-1	Date Sampled:	07/10/96
Lab Number:	9607125-06A	Date Received:	07/10/96
Sample Matrix/Media:	WATER	Date Prepared:	07/11/96
Preparation Method:	EPA 5030	Date Analyzed:	07/11/96
Method Reference:	EPA 8015/8020	Analyst:	DTL

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
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	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	98	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: 10-270-4-2
Clayton Project No. 96071.25

Sample Identification:	QC-2	Date Sampled:	07/10/96
Lab Number:	9607125-07A	Date Received:	07/10/96
Sample Matrix/Media:	WATER	Date Prepared:	07/11/96
Preparation Method:	EPA 5030	Date Analyzed:	07/11/96
Method Reference:	EPA 8015/8020	Analyst:	DTL

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
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	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	107	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: 10-270-4-2
Clayton Project No. 96071.25

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9607125-08A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	07/11/96
Preparation Method:	EPA 5030	Date Analyzed:	07/11/96
Method Reference:	EPA 8015/8020	Analyst:	DTL

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
BTEX/Gasoline			
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	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	106	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: 10-270-4-2
Clayton Project No. 96071.25

Sample Identification: See Below
Lab Number: 9607125
Sample Matrix/Media: WATER
Extraction Method: EPA 3510
Method Reference: EPA 8015 (Modified)

Date Received: 07/10/96
Date Extracted: 07/12/96
Date Analyzed: 07/16/96

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-01	MW-7	07/10/96	840	50
-02	MW-2	07/10/96	120	50
-03	MW-4	07/10/96	120	50
-04	MW-5	07/10/96	120	50
-05	MW-6	07/10/96	8300	50
-08	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.

Analytical Results
for
Alisto Engineering Group
Client Reference: 10-270-4-2
Clayton Project No. 96071.25

Sample Identification: See Below
Lab Number: 9607125
Sample Matrix/Media: WATER
Extraction Method: EPA 3510
Method Reference: EPA 8015 (Modified)

Date Received: 07/10/96
Date Extracted: 07/12/96
Date Analyzed: 07/16/96

Lab Number	Sample Identification	Date Sampled	TPH-O (ug/L)	Method Detection Limit (ug/L)
-01	MW-7	07/10/96	1700	200
-02	MW-2	07/10/96	1400	200
-03	MW-4	07/10/96	300	200
-04	MW-5	07/10/96	1500	200
-05	MW-6	07/10/96	5500	200
-08	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.

Clayton
ENVIRONMENTAL
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Quality Assurance Results Summary

Matrix Spike/Matrix Spike Duplicate Results

for

Clayton Project No. 96071.25

Quality Assurance Results Summary - Matrix Spike/Matrix Spike Duplicate
for
Clayton Project No. 96071.25

Clayton Lab Number:	9607142-LCS	Analytical Method:	EPA 8015
Ext./Prep. Method:	EPA 3510	Instrument ID:	02883
Date:	07/12/96	Date:	07/13/96
Analyst:	GTL	Time:	01:06
Std. Source:	E960615-01W	Analyst:	CTS
Sample Matrix/Media:	WATER	Units:	UG/L
		QC Batch No:	96071257

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	1,020	1,010	99	1,090	107	103	65	128	7.2	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. 96071.25

Clayton Lab Number: 9607044-01A
Ext./Prep. Method: EPA 5030
Date: 07/11/96
Analyst: DTL
Std. Source: V960513-02W
Sample Matrix/Media: WATER

Analytical Method: EPA 8015/8020
Instrument ID: 05587
Date: 07/11/96
Time: 14:20
Analyst: DTL
Units: ug/L
QC Batch No: 960711A1

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	5.57	5.34	96	5.32	96	96	79	125	0.2	20
ETHYLBENZENE	(PID)	ND	6.22	6.18	99	6.32	102	100	85	123	2.3	20
GASOLINE	(FID)	ND	500	552	110	552	110	110	80	120	0.0	25
SURR a,a,a-Trifluorotoluene		ND	100	109	109	109	109	109	50	150	0.0	20
TOLUENE	(PID)	16.1	26.7	43.4	102	43.5	103	103	84	118	0.3	20
TOTAL XYLENE	(PID)	ND	38.2	38.3	100	38.2	100	100	85	115	0.2	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. 96071.25

Clayton Lab Number:	9607125-LCS	Analytical Method:	EPA 8015
Ext./Prep. Method:	EPA 3510	Instrument ID:	02883
Date:	07/12/96	Date:	07/13/96
Analyst:	GTL	Time:	02:29
Std. Source:	G960207-05W	Analyst:	FAK
Sample Matrix/Media:	WATER	Units:	UG/L
		QC Batch no:	96071257

Analyte	Blank Result	Spike Level	LCS Result	LCS Recovery (%)	LCL (% R)	UCL (% R)
Oil	ND	1,020	439	43	30	130

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

Page 1 of 1

Clayton
ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

IMPORTANT
Date Results Requested: STAT
Rush Charges Authorized? ☐ Yes ☐ No
☐ Phone or ☒ Fax Results

For Clayton Use Only
Clayton Lab Project No.
9607125

Port of Oakland

REPORT RESULTS TO
Name: Alisto Brady Nagle
Client Job No. 10-270-4-2
Company: Alisto Engineering
~~Dept.~~ Oakland, Ca
Mailing Address: 1575 Treat Blvd #201
City, State, Zip: W.C., Ca 94598
Telephone No. (510) 295-1650
FAX No. 295-1823

SEND INVOICE TO
Purchase Order No.
Name
Company
Dept.
Address
City, State, Zip

Special Instructions and/or specific regulatory requirements:
(method, limit of detection, etc.)

* Explanation of Preservative:

Samples are:
(check if applicable)
☐ Drinking Water
☒ Groundwater
☐ Wastewater

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

	CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	TPH-G/BTXE	TPH-D	TPH-MO							*	FOR LAB USE ONLY
01A-E	MW-7	7/10/96		W		5	X	X	X							*	Run all TPH-D
2	MW-2	↓		↓		↓	↓	↓	↓								& Motor oil Samples
3	MW-4	↓		↓		↓	↓	↓	↓								in Series
4	MW-5	↓		↓		↓	↓	↓	↓								
5	MW-6	↓		↓		↓	↓	↓	↓								
6A-C	QC-1	↓		↓		3	↓	↓	↓								
7AB	QC-2	↓		↓		2	↓	↓	↓								
							[illegible] HCl	[illegible] HCl	[illegible] HCl								

CHAIN OF CUSTODY

Collected by: Larry Buenvenida (print)		Collector's Signature:	
Relinquished by: [signature]	Date/Time 7/10/96	Received by: [signature]	Date/Time 7/10/96 14:20
Relinquished by: [signature]	Date/Time 7/10/96 16:55	Received by:	Date/Time
Method of Shipment: Courier		Received at Lab by: Carol Hammerberg	Date/Time 7/10/96 4:55pm
Authorized by: ______ Date ______ (Client Signature MUST Accompany Request)		Sample Condition Upon Receipt: ☒ Acceptable ☐ Other (explain)	

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

Detroit Regional Lab
22345 Roethel Drive
Novi, MI 48375
(800) 806-5887
(810) 344-1770
FAX (810) 344-2655

Atlanta Regional Lab
400 Chastain Center Blvd., N.W., Suite 490
Kennesaw, GA 30144
(800) 252-9919
(770) 499-7500
FAX (770) 423-4990

San Francisco Regional Lab
1252 Quarry Lane
Pleasanton, CA 94566
(800) 294-1755
(510) 426-2657
FAX (510) 426-0106

Seattle Regional Lab
4636 E. Marginal Way S., Suite 215
Seattle, WA 98134
(800) 568-7755
(206) 763-7364
FAX (206) 763-4189

DISTRIBUTION:
White = Clayton Laboratory
Yellow = Clayton Accounting
Pink = Client Copy

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