Environmental/Engineering Consultants
382 Martin Avenue
Santa Clara, California 95050-3112
408-327-5700; (fax) 408-327-5707

TO:	Alameda County, Health Care Agency
	1131 Harbor Bay Parkway
	Suite 250
	Alameda, CA 94502-6577
Attn:	Barney M. Chan

DATE: 09/08/99	**JOB NO:** 1124SC01
RE: Quarterly Groundwater Monitoring Report	

WE ARE SENDING YOU:

- ☐ Plans ☐ Prints ☐ Shop drawings ☐ Specifications ☐ Project Invoice
- ☐ Draft field documents ☐ Field documents ☐ Electronic data ☐ Draft Elec. Data ☐ Samples
- ☐ Copy of Letter ☐ Change Order ☐ Contract Documents ☒ Reports ☐ _____

COPIES	DATE	VIA	DESCRIPTION
1	09-08-99	US Mail	Quarterly Groundwater Monitoring Second Quarter 1999

THESE ARE TRANSMITTED AS CHECKED BELOW:

- ☐ Approval ☒ Review and comment ☐ Return _____ corrected prints
- ☐ As requested ☐ Reviewed ☐ Submit _____ copies for distribution
- ☐ Approved as noted ☐ Returned for Corrections ☐ Resubmit _____ copies for approval

REMARKS: Enclosed is the quarterly groundwater monitoring report for the second quarter of 1999. We apologize for the delay. The next quarter's monitoring will be scheduled for this month and I will contact you with the proposed date of sampling. Should you have any questions, please feel free to contact me.

SIGNED: _____

COPY TO: Patrick Murray/McMorgan & Company

99 SEP 10 PM 3:11
ENVIRONMENTAL PROTECTION

If enclosures are not as noted, please notify us at once.

E_2C INC
ENVIRONMENTAL / ENGINEERING CONSULTANTS
Since 1970

Walter H. Kim
Vice President

382 Martin Avenue
Santa Clara, CA 95050-3112
Tel: 408.327.5700 Fax: 408.327.5707
e2cinc@ricochet.net

September 1, 1999
Project Number 1124SC01
Via Facsimile & US Mail

McMorgan & Company
One Bush Street, Suite 800
San Francisco, CA 94104

ATTN: Mr. Patrick G. Murray
SUBJECT: **QUARTERLY GROUNDWATER MONITORING SECOND QUARTER 1999**
444 Hegenberger ~~Road~~ Loop, Oakland, California

Dear Mr. Murray:

E_2C, Inc. presents herein the results of the quarterly groundwater monitoring conducted at the subject site (see Figure 1). The Scope of Work performed consisted of the purging and subsequent sampling of groundwater monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5 (see Figure 2).

CURRENT GROUNDWATER MONITORING

Groundwater samples were obtained on July 1, 1999. Prior to purging, depth-to-groundwater and total depth measurements were collected from each monitoring well. During the purging procedures approximately three well-casing volumes of groundwater were evacuated from the wells using disposable bailers. During purging, physical groundwater parameters, including electrical conductivity, temperature, turbidity, and pH were taken from the wells (refer to the well monitoring Field Data Sheets presented in Appendix A).

Once the wells had been purged, groundwater samples were collected using a disposable bailer. Sample material was dispensed into containers appropriate for the required analyses. The containers were then secured, labeled, and placed on ice in a cooler for transport to Entech Analytical Labs, Inc. of Sunnyvale, California, a State-certified analytical laboratory.

The groundwater samples were analyzed for Total Petroleum Hydrocarbons as diesel (TPHd) and gasoline (TPHg) and for Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX) using Environmental Protection Agency Test Methods 8015M and 8020.

RESULTS OF GROUNDWATER ANALYSES

The results of the sample analyses are presented in Tables 1 and Figure 2. Table 2 presents groundwater movement parameters including elevation, flow direction, and gradient. Table 3 presents physical groundwater parameters including conductivity, pH, temperature, and turbidity. Copies of the laboratory report and the corresponding chain-of-custody form are presented in Appendix B.

GROUNDWATER ELEVATIONS

Groundwater elevations from the July 1, 1999 sampling event indicate a southwesterly flow direction at a gradient of 0.0011 feet/foot as shown on Figure 3. During the March 1999 monitoring event the groundwater flow direction was to the west at a gradient of 0.00086. An unexpected and significant change in elevation occurred in monitoring well MW-4. In order to verify this anomaly, we remeasured the elevation on August 18, 1999, which indicated similar results but a westerly flow direction at a gradient of 0.0013 as shown on Figure 4.

CONCLUSIONS AND RECOMMENDATIONS

The results of this quarter's sampling event indicate that Benzene is the only constituent of concern that has met or exceeded its MCL. The levels of Benzene in monitoring wells MW1, MW4, and MW5 are 190, 120, and 160 times higher than the permissible MCL, respectively.

The levels of TPHg, TPHd, BTEX have increased 86 to 100 percent in monitoring well MW-5 from March to July of 1999. At the same time the level of these compounds have decreased 100 percent in monitoring well MW1. The levels of TPHg, TPHd, TEX in monitoring wells MW2, MW3, and MW4 have changed on the same order of magnitude as MW1 and MW5, but remain well below their respective MCLs.

Based on the requirements of the Alameda County Health Care Agency (ACHCA), E_2C, Inc. recommends that groundwater monitoring be continued in accordance with the approved sampling schedule. Copies of this and future reports should be sent to Mr. Barney Chan of the ACHCA.

E_2C, Inc. appreciates the opportunity to be of service to you on this project and looks forward to working with McMorgan & Company in the future. If you have any questions or would like any further information please call us at your convenience.

Sincerely,

Walter H. Kim
Senior Project Manager

Kendall W. Price, CEG/REA
President

WHK:mak/1124SC01 Quarterly GW Monitoring 0799

Enclosures

cc: Mr. Barney M. Chan/Alameda County Health Care Services

TABLE 1
QUARTERLY GROUNDWATER MONITORING RESULTS (µg/L)

WELL I.D.	DATE	TPHd	TPHg	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES
MW-1	12/2/98(a)	<50	<50	<0.05	<0.05	<0.05	<0.05
MW-2		99	<50	4.6	0.85	0.57	5
MW-3		300	970	160	6.5	16	9
MW-4		150	150	29	0.78	0.38	1.1
MW-5		620	<50	1.1	0.37	<0.3	2
MW-1	3/8/99	190	<50	<0.3	<0.3	<0.3	<0.3
MW-2		210	180	200(a)	0.74	1.3	2.3
MW-3		1,400	2,600	1,800(b)	30(c)	67(c)	26(c)
MW-4		<50	1,300	1,900(b)	9.4	1.2	11
MW-5		<50	58	23	0.31	<0.3	1.8
MW-1	7/1/99	<50	<50	<0.5	<0.5	<0.5	<0.5D
MW-2		<50	1,100	190	13	33	36
MW-3		150*	3,000	1.0	<0.5	32	36
MW-4		<50	610**	120	<0.5	<0.5	<0.5
MW-5		64*	1,900	160	10	13	22
MCLs		NE	NE	1.0	100	680	1,750

Notes: Shaded values meet or exceed their respective MCLs
NE = No MCL or Action Level has been established for this substance
MCLs = Maximum Contaminant Levels per State Office of Drinking Water Shaded values exceed MCLs
TPHd = Total petroleum hydrocarbons as diesel
TPHg = Total petroleum hydrocarbons as gasoline
* = The analytical results are within the quantitation range for diesel, however the chromatographic pattern are not typical of fuel
** = The analytical results are within the quantitation range for diesel, however the chromatographic pattern are not typical of fuel
(a) = Reporting limit for this monitoring event are elevated 10 times due to matrix interference
(b) = Reporting limit is elevated 100 times due to matrix interference
(c) = Reporting limit is elevated 5 times due to matrix interference

TABLE 2
GROUNDWATER FLOW PARAMETERS

DATE	WELL I.D.	WELL DEPTH	SCREEN INTERVAL	MEASURED DEPTH TO BOTTOM	CASING ELEVATION	DEPTH TO WATER	WATER ELEVATION	FLOW DIRECTION	GRADIENT (ft/ft)
12/2/98	MW-1	20'	5'-20'	19.53	100.74	2.90	97.84	W	0.00091
	MW-2	20'	5'-20'	19.43	102.44	4.61	97.83		
	MW-3	20'	5'-20'	19.54	102.00	4.24	97.76		
	MW-4	20'	5'-20'	19.48	100.00	2.20	97.80		
	MW-5	20'	5'-20'	19.61	102.22	4.59	97.63		
3/8/99	MW-1	20'	5'-20'	19.53	100.74	3.43	97.31	SW	0.00086
	MW-2	20'	5'-20'	19.43	102.44	5.16	97.28		
	MW-3	20'	5'-20'	19.54	102.00	4.90	97.10		
	MW-4	20'	5'-20'	19.48	100.00	2.80	97.20		
	MW-5	20'	5'-20'	19.61	102.22	5.20	97.02		
7/1/99	MW-1	20'	5'-20'	19.53	100.74	3.81	96.93	SW	0.0011
	MW-2	20'	5'-20'	19.43	102.44	5.91	96.53		
	MW-3	20'	5'-20'	19.54	102.00	5.35	96.65		
	MW-4	20'	5'-20'	19.48	100.00	5.23	94.77		
	MW-5	20'	5'-20'	19.61	102.22	5.59	96.63		
8/18/99	MW-1	20'	5'-20'	19.53	100.74	3.62	97.12	W	0.0013
	MW-2	20'	5'-20'	19.43	102.44	5.53	96.91		
	MW-3	20'	5'-20'	19.54	102.00	5.21	96.79		
	MW-4	20'	5'-20'	19.48	100.00	5.00	95.00		
	MW-5	20'	5'-20'	19.61	102.22	5.37	96.85		

TABLE 3
PHYSICAL GROUNDWATER PARAMETERS

DATE	WELL I.D.	GROUNDWATER PURGED (cumulative gallons)	pH	ELECTRICAL CONDUCTIVITY (S/cm)	TURBIDITY (NTU)	TEMPERITURE (°F)
7/1/99	MW-1	7.5	7.6	751	120	69.6
	MW-2	6.0	7.1	911	7200	71.1
	MW-3	6.0	7.6	944	150	69.9
	MW-4	8.0	7.1	805	140	70.9
	MW-5	7.0	7.1	1048	180	69.5

Notes: S/cm = seconds per centimeter
NTU = National Turbidity Units

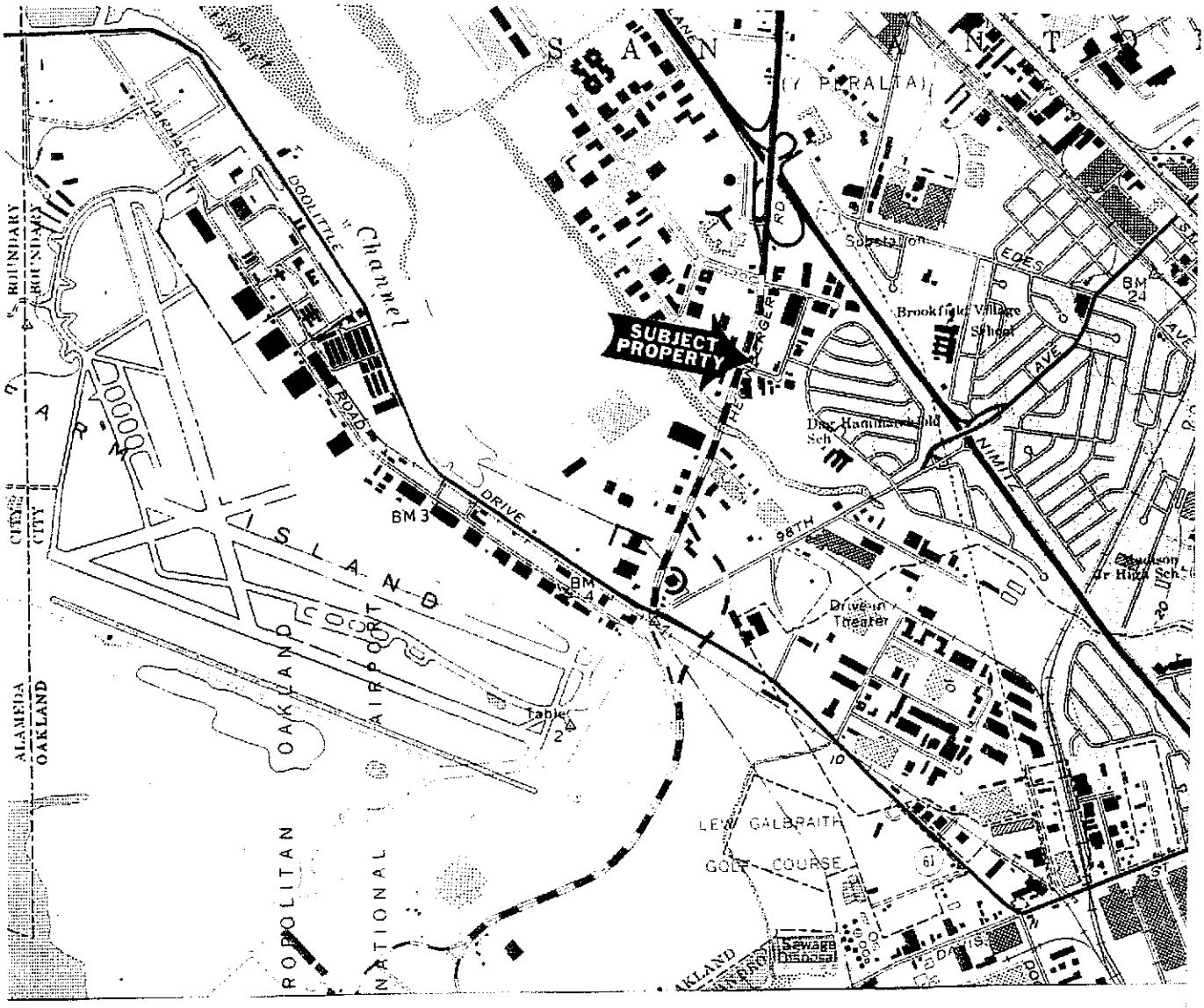
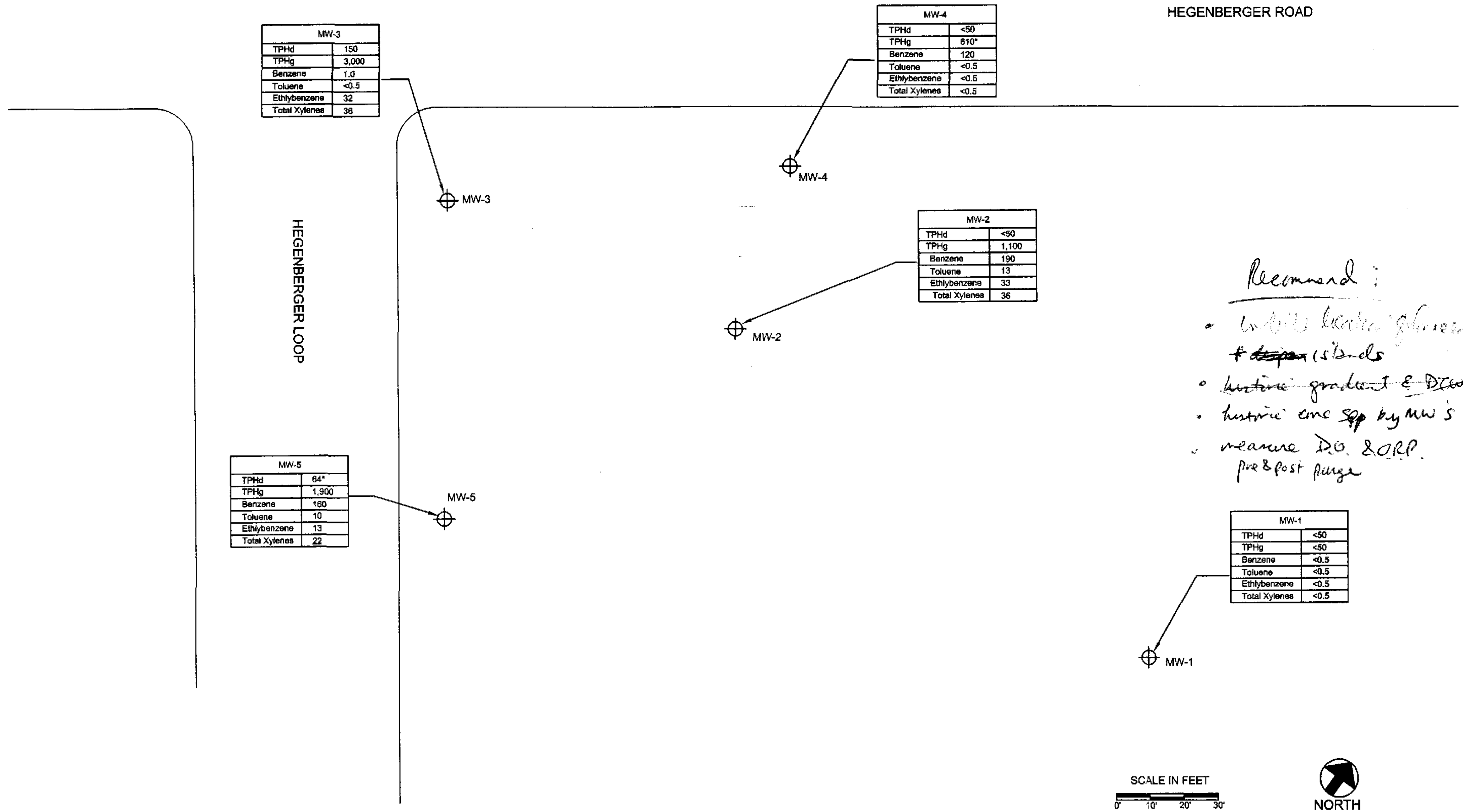


Figure 1

Environmental/Engineering Consultants 382 Martin Avenue Santa Clara, CA 95050	SITE LOCATION MAP 444 HEGENBARGER ROAD OAKLAND, CALIFORNIA	FILENAME: 1124SCOI DATE: 07.29.1998 REVISION: DRAWN:L.JUSTUS	Job Number: 1124SCOI



MW-3	
TPHd	150
TPHg	3,000
Benzene	1.0
Toluene	<0.5
Ethlybenzene	32
Total Xylenes	36

MW-4	
TPHd	<50
TPHg	610*
Benzene	120
Toluene	<0.5
Ethlybenzene	<0.5
Total Xylenes	<0.5

MW-2	
TPHd	<50
TPHg	1,100
Benzene	190
Toluene	13
Ethlybenzene	33
Total Xylenes	36

MW-5	
TPHd	64*
TPHg	1,900
Benzene	160
Toluene	10
Ethlybenzene	13
Total Xylenes	22

MW-1	
TPHd	<50
TPHg	<50
Benzene	<0.5
Toluene	<0.5
Ethlybenzene	<0.5
Total Xylenes	<0.5

EXPLANATION

⊕ = MONITORING WELL LOCATION
MW-5

Figure 2 - QUARTERLY MONITORING ANALYTICAL RESULT (ug/L)

Environmental/Engineering Consultants
382 Martin Avenue
Santa Clara, California 95050-3112
Tel: 408.327.5700 Fax: 408.327.5707

444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

FILENAME: 1124SC01
DATE: AUGUST 1999
REVISION:
DRAWN: L JUSTUS

Job Number:
1124SC01

HEGENBERGER ROAD

HEGENBERGER LOOP

(96.65)
MW-3

MW-4 *
(94.77)

MW-2
(96.53)

(96.63)
MW-5

GROUNDWATER FLOW
DIRECTION @ 0.0011

MW-1
(96.93)

GATE

SCALE IN FEET
0' 10' 20' 30'

NORTH

EXPLANATION

⊕ = MONITORING WELL LOCATION
MW5
(96.65) GROUNDWATER ELEVATION (FEET)
– – – GROUNDWATER CONTOUR
——► (0.0011) GROUNDWATER FLOW DIRECTION AND GRADIENT
✱ = NOT USED IN CALCULATING GROUNDWATER FLOW DIRECTION

Figure 3 - GROUNDWATER GRADIENT MAP 07.01.1999

Environmental/Engineering Consultants
382 Martin Avenue
Santa Clara, California 95050-3112
Tel: 408.327.5700 Fax: 408.327.5707

444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

FILENAME: 1124SC01
DATE: AUGUST 1999
REVISION:
DRAWN: LJUSTUS

Job Number:
1124SC01

HEGENBERGER ROAD

HEGENBERGER LOOP

MW-4 *
(95.00)

MW-3
(96.79)

MW-2
(96.91)

MW-5
(96.85)

GROUNDWATER FLOW
DIRECTION @ 0.0013

MW-1
(97.12)

SCALE IN FEET
0' 10' 20' 30'

NORTH

EXPLANATION

⊕ = MONITORING WELL LOCATION
MW5
(96.85) GROUNDWATER ELEVATION (FEET)
– – – GROUNDWATER CONTOUR
——→ (0.0013) GROUNDWATER FLOW DIRECTION AND GRADIENT
* = NOT USED IN CALCULATING GROUNDWATER FLOW DIRECTION

Figure 4 - GROUNDWATER GRADIENT 08.18.1999

Environmental/Engineering Consultants
382 Martin Avenue
Santa Clara, California 95050-3112
Tel: 408.327.5700 Fax: 408.327.5707

444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

FILENAME: 1124SC01
DATE: AUGUST 1999
REVISION:
DRAWN:L.JUSTUS

Job Number:
1124SC01

APPENDIX A

WELL MONITORING FIELD DATA SHEETS

WELL GAUGING DATA

Project # 990701Y3 Date 7/1 Client E2C

Site 444 HEGENBERGER OAKLAND CA

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW1	2					3.81	19.53	TOC	
MW2	2					5.91	19.43		
MW3	2					5.35	19.54		
MW4	2					5.23	19.44		
MW6	2					5.59	19.61		

WELL GAUGING DATA

Project # 990701Y3 Date 7/1 Client E-2C

Site 444 HEGENBERGER OAKLAND CA

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW1	2					3.81	19.53	TOC	
MW2	2					5.91	19.43		
MW3	2					5.35	19.54		
MW4	2					5.23	19.48		
MW-5 ~~MW-5~~	2					5.59	19.61		

WELL MONITORING DATA SHEET

Project #: 990701 Y 3	Client: E2C
Sampler: B. TAYLOR	Start Date: 7/1
Well I.D.: MW1	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 19.53	Depth to Water: 3.81
Before: After:	Before: ~~4.00~~ After: 4.97
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer / ~~Disposable Bailer~~ / Middleburg / Electric Submersible / Extraction Pump / Other: ___

Sampling Method: Bailer / ~~Disposable Bailer~~ / ~~Extraction Port~~ / Other: ___

2.5 (Gals.) X 3 = 7.5 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1201	71.0	8.2	769	~~>~~200	2.5	
1204	69.9	7.6	743	140	5.0	
1207	69.6	7.6	751	120	7.5	

Did well dewater? Yes (No) Gallons actually evacuated: 7.5

Sampling Time: 1210 Sampling Date: 7/1

Sample I.D.: MW1 Laboratory: ENTECH

Analyzed for: (TPH-G BTEX MTBE TPH-D) @ Time Other:

Equipment Blank I.D.: Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 990701 Y 3	Client: E2C
Sampler: B TAYLOR	Start Date: 7/1
Well I.D.: MW2	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 19.43	Depth to Water: 5.91
Before: After:	Before: After: 7.01
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer, ~~Disposable Bailer~~, Middleburg, Electric Submersible, Extraction Pump, Other: _____

Sampling Method: Bailer, (Disposable Bailer), Extraction Port, Other: _____

2 (Gals.) X 3 = 6 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius^2 * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1247	73.7	7.2	683	7200	2	
1249	71.4	7.1	907	7200	4	
1251	71.1	7.1	911	7200	6	

Did well dewater? Yes (No) Gallons actually evacuated: 6

Sampling Time: 1253 Sampling Date: 7/1

Sample I.D.: MW2 Laboratory: ENTECH

Analyzed for: (TPH-G BTEX MTBE TPH-D) @ Time Other:

Equipment Blank I.D.: Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 950701 Y 3	Client: E2C
Sampler: B. TAYLOR	Start Date: 7/1
Well I.D.: MW3	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth:	Depth to Water:
Before: 19.54 After:	Before: 5.35 After: 6.97
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer; (Disposable Bailer); Middleburg; Electric Submersible; Extraction Pump; Other: ___

Sampling Method: Bailer; (Disposable Bailer); Extraction Port; Other: ___

2 (Gals.) X	3	=	6 Gals.
1 Case Volume	Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1305	70.3	7.8	907	80	2	
1311	69.9	7.6	991	130	4	
1314	69.9	7.6	994	150	6	

Did well dewater? Yes (No)	Gallons actually evacuated: 6
Sampling Time: 1317	Sampling Date: 7/1
Sample I.D.: MW3	Laboratory: ENTECH
Analyzed for: (TPH-G BTEX MTBE TPH-D) Other:	
@ Time	
Equipment Blank I.D.:	Duplicate I.D.:
Analyzed for: TPH-G BTEX MTBE TPH-D Other:	

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 990701 Y 3	Client: E2C
Sampler: B. TAYLOR	Start Date: 7/1
Well I.D.: MW4	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 19.48	Depth to Water: 5.23
Before: After:	Before: After: 7.91
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer / ~~Disposable Bailer~~ / Middleburg / Electric Submersible / Extraction Pump / Other: ___

Sampling Method: Bailer / Disposable ~~Bailer~~ / Extraction Port / Other: ___

2.5 (Gals.) X 3 = 7.5 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1328	72.6	7.8	1031	107	3	
1331	71.4	7.2	807	130	6	
1334	70.9	7.1	805	140	8	

Did well dewater? Yes (No) Gallons actually evacuated: 8

Sampling Time: 1338 Sampling Date: 7/1

Sample I.D.: MW4 Laboratory: ENTECH

Analyzed for: (TPH-G BTEX MTBE TPH-D) Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 990701 Y 3	Client: E2C
Sampler: B. TAYLOR	Start Date: 7/1
Well I.D.: MW 6	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 19.61	Depth to Water: 5.59
Before: After:	Before: After: 7.09
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer; (Disposable Bailer); Middleburg; Electric Submersible; Extraction Pump; Other: _____

Sampling Method: Bailer; (Disposable Bailer); Extraction Port; Other: _____

2.2	(Gals.) X	3	=	6.6 Gals.
1 Case Volume		Specified Volumes		Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius^2 * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1219	70.7	7.3	911	100	3	
1222	69.6	7.1	1041	180	6	
1229	69.5	7.1	1049	180	7	

Did well dewater? Yes (No) Gallons actually evacuated: 7

Sampling Time: 1230 Sampling Date: 7/1

Sample I.D.: MW6 Laboratory: ENTECH

Analyzed for: (TPH-G BTEX MTBE TPH-D) Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 990701 Y 3	Client: E2C
Sampler: B. TAYLOR	Start Date: 7/1
Well I.D.: ~~MW-6~~ MW-5 @ 7/6/99	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 19.61	Depth to Water: 5.59
Before: After:	Before: After: 7.09
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer; (Disposable Bailer); Middleburg; Electric Submersible; Extraction Pump; Other: _____

Sampling Method: Bailer; (Disposable Bailer); Extraction Port; Other: _____

2.2 (Gals.) X 3 = 6.6 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1219	70.7	7.3	911	100	3	
1222	69.6	7.1	1041	180	5	
1225	69.5	7.1	1048	180	7	

Did well dewater? Yes (No) Gallons actually evacuated: 7

Sampling Time: 1230 Sampling Date: 7/1

Sample I.D.: ~~MW-6~~ MW-5 @ 7/20/99 Laboratory: ENTECH

Analyzed for: (TPH-G BTEX MTBE TPH-D) Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL GAUGING DATA

Project # 990818F1 Date 8-18-99 Client E2C

Site 444 Hegenberger Rd. Oakland California.

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	2					3.62	19.31	TOC	
MW-2	2					5.53	19.43	↓	
MW-3	2					5.21	19.55	↓	
MW-4	2					5.00	19.43	↓	
MW-5	2					5.31	19.54	↓	
		* Double Checked DTW:							

APPENDIX B

LABORATORY REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

July 26, 1999

E2C, Inc.
Ken Price
382 Martin Avenue
Santa Clara, CA 95050

Dear Ken Price,

Enclosed is the revised hard copy report for Lab # 15141-004-005 your project # 1124SC01. Sample I.D. was changed per your request. Please replace this page in your report package.

Sincerely,

Andrea M. Edwards

Andrea Edwards

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

E2C, Inc.
382 Martin Avenue
Santa Clara, CA 95050
Attn: Ken Price

Date: 7/14/99
Date Received: 7/7/99
Project: 1124SC01
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	MW1			MW2			MW3				
Sample Date	7/1/99			7/1/99			7/1/99				
Sample Time	12:10			12:53			13:17				
Lab #	15141-001			15141-002			15141-003				
	Result	DF	DLR	Result	DF	DLR	Result	DF	DLR	PQL	Method
Results in µg/Liter:											
Analysis Date	7/9/99			7/9/99			7/9/99				
TPH-Diesel	**ND**	1.0	50	**ND**	1.0	50	**150** [x]	1.0	50	50	8015M
Analysis Date	7/9/99			7/12/99			7/9/99				
TPH-Gas	**ND**	1.0	50	**1,100**	1.0	50	**3,000**	1.0	50	50	8015M
Benzene	**ND**	1.0	0.50	**190**	1.0	0.50	**1.0**	1.0	0.50	0.50	8020
Toluene	**ND**	1.0	0.50	**13**	1.0	0.50	**ND**	1.0	0.50	0.50	8020
Ethyl Benzene	**ND**	1.0	0.50	**33**	1.0	0.50	**32**	1.0	0.50	0.50	8020
Xylenes (total)	**ND**	1.0	0.50	**36**	1.0	0.50	**36**	1.0	0.50	0.50	8020

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

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

Michelle L. Anderson, Lab Director

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

E2C, Inc.
382 Martin Avenue
Santa Clara, CA 95050
Attn: Ken Price

Date: 7/14/99
Date Received: 7/7/99
Project: 1124SC01
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	MW4			MW6							
Sample Date	7/1/99			7/1/99							
Sample Time	13:38			12:30							
Lab #	15141-004			15141-005							
	Result	DF	DLR	Result	DF	DLR				PQL	Method
Results in µg/Liter:											
Analysis Date	7/9/99			7/9/99							
TPH-Diesel	**ND**	1.0	50	**64** [x]	1.0	50				50	8015M
Analysis Date	7/9/99			7/9/99							
TPH-Gas	**610** [x]	1.0	50	**1,900**	1.0	50				50	8015M
Benzene	**120**	1.0	0.50	**160**	1.0	0.50				0.50	8020
Toluene	**ND**	1.0	0.50	**10**	1.0	0.50				0.50	8020
Ethyl Benzene	**ND**	1.0	0.50	**13**	1.0	0.50				0.50	8020
Xylenes (total)	**ND**	1.0	0.50	**22**	1.0	0.50				0.50	8020

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

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

Michelle L. Anderson, Lab Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

STANDARD LAB QUALIFIERS
July, 1998

All Entech lab reports now reference standard lab qualifiers. These qualifiers are noted in the adjacent column to the analytical result and are adapted from the U.S. EPA CLP program. The current qualifier list is as follows:

Qualifier	Description
U	Compound was analyzed for but not detected
J	Estimated valued for tentatively identified compounds or if result is below PQL but above MDL
N	Presumptive evidence of a compound (for Tentatively Identified Compounds)
B	Analyte is found in the associated Method Blank
E	Compounds whose concentrations exceed the upper level of the calibration range
D	Multiple dilutions reported for analysis; discrepancies between analytes may be due to dilution
X	Results within quantitation range; chromatographic pattern not typical of fuel

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

E2C, Inc.
382 Martin Avenue
Santa Clara, CA 95050
Attn: Ken Price

Date: 7/14/99
Date Received: 7/7/99
Project: 1124SC01
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	MW4			MW5							
Sample Date	7/1/99			7/1/99							
Sample Time	13:38			12:30							
Lab #	15141-004			15141-005							
	Result	DF	DLR	Result	DF	DLR				PQL	Method
Results in µg/Liter:											
Analysis Date	7/9/99			7/9/99							
TPH-Diesel	**ND**	1.0	50	**64** [x]	1.0	50				50	8015M
Analysis Date	7/9/99			7/9/99							
TPH-Gas	**610** [x]	1.0	50	**1,900**	1.0	50				50	8015M
Benzene	**120**	1.0	0.50	**160**	1.0	0.50				0.50	8020
Toluene	**ND**	1.0	0.50	**10**	1.0	0.50				0.50	8020
Ethyl Benzene	**ND**	1.0	0.50	**13**	1.0	0.50				0.50	8020
Xylenes (total)	**ND**	1.0	0.50	**22**	1.0	0.50				0.50	8020

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

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

Michelle L. Anderson, Lab Director

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG4990709
Matrix: Water
Units: µg/L

Date Analyzed: 07/09/99
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP % R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	40	ND	37	**92**	35	**87**	6.2	25	83-109
Toluene	8020	<0.50	40	ND	37	**93**	34	**86**	7.7	25	65-112
Ethyl Benzene	8020	<0.50	40	ND	36	**91**	35	**88**	3.5	25	82-110
Xylenes	8020	<0.50	120	ND	109	**91**	107	**89**	2	25	83-110
Gasoline	8015	<50.0	500	ND	563	**113**	508	**102**	10.2	25	74-126
aaa-TFT(S.S.)-PID	8020			83%	84%		78%				65-135
aaa-TFT(S.S.)-FID	8015			99%	92%		92%				65-135

Note: LCS and LCSD results reported for the following Parameters:
All

Definition of Terms:

na: Not Analyzed in QC batch
MB: Method Blank
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike *Duplicate Result*
SPD (%R): Spike % Recovery
NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG2990712
Matrix: Water
Units: µg/L

Date Analyzed: 07/12/99
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP % R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	5.0	ND	4.0	**80**	3.6	**74**	8.2	25	69-118
Toluene	8020	<0.50	25.0	ND	26	**105**	26	**103**	2.0	25	79-122
Ethyl Benzene	8020	<0.50	5.0	ND	5.4	**109**	5.2	**104**	4.9	25	81-121
Xylenes	8020	<0.50	25.0	ND	29	**115**	28	**111**	3.7	25	79-120
Gasoline	8015	<50.0	500	ND	461	**92**	440	**88**	4.7	25	75-125
aaa-TFT(S.S.)-PID	8020			99%	100%		99%				65-135
aaa-TFT(S.S.)-FID	8015			102%	103%		102%				65-135

Note: LCS and LCSD results reported for the following Parameters:
All

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R): Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R): Spike % Recovery
- NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Spikes

QC Batch #: DW990703
Matrix: Water
Units: µg/L

Date analyzed: 07/09/99
Date extracted: 07/09/99
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP %R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Diesel	8015M	<50.0	950	ND	1138	**120**	964	**101**	16.6	25	59-130

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R) Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R) Spike Duplicate % Recovery
- NC: Not Calculated

BLAINE
TECH SERVICES INC.
1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY BTS # 990701 Y3

CLIENT: E2C

SITE: 444 HEGENBERGER LOOP
OAKLAND, CA

CONDUCT ANALYSIS TO DETECT: TPH-G, BTEX, TPH-DIESEL

LAB: Entech   DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

☐ EPA ☐ LIA ☐ OTHER ☐ RWQCB REGION

SPECIAL INSTRUCTIONS
Invoice & Report to
E2C
ATTN: Ken Price
Proj # 1124SC01

SAMPLE I.D.	Date	Time	MATRIX (S = SOIL, W = H2O)	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	TPH-G	BTEX	TPH-DIESEL	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW1	7/1	1210	W	5		X	X	X				15141-001
MW2	↓	1253	↓	↓		↓	↓	↓				15141-002
MW3	↓	1317	↓	↓		↓	↓	↓				15141-003
MW4	↓	1338	↓	↓		↓	↓	↓				15141-004
MW6	↓	1230	↓	↓		↓	↓	↓				15141-005

SAMPLING COMPLETED: DATE 7/1 TIME 1400
SAMPLING PERFORMED BY: B. TAYLOR
RESULTS NEEDED NO LATER THAN: Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	7/7/99	1520	J. Mulin	7/7/99	3:30
J. Mulin	7/7/99	5:15	Maria Gruseis	7/7/99	1715

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #