THIRD QUARTER 1999
GROUNDWATER SAMPLING

Mariner Square Associates
2415 Mariner Square Drive
Alameda, California

OCTOBER 1999

Prepared for

2415 Mariner Square Drive
Alameda, California

Prepared by

EARTH SYSTEMS CONSULTANTS
Northern California
47853 Warm Springs Boulevard
Fremont, California 94539

Earth Systems Consultants
Northern California

47853 Warm Springs Blvd.
Fremont, CA 94539-7400
(510) 353-0320
Fax (510) 353-0344

File No. NFE-4392-01
October 11, 1999

Doc. No. 9910-027

Alameda County Health Care Services Agency
Environmental Protection Division
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502-6577

Attention: Mr. Larry Seto, Senior Hazardous Materials Specialist

Subject: 2415 Mariner Square Drive
Alameda, California
THIRD QUARTER 1999 GROUNDWATER SAMPLING

Dear Mr. Seto:

Earth Systems Consultants Northern California (ESCNC) is submitting this report which describes the third quarter 1999 groundwater sampling and analysis at the subject site (Figure 1).

Groundwater Sampling

On September 9, 1999, Blaine Tech Services measured the depth to groundwater in monitoring wells MW-1 through MW-5, MW-6A, and MW-7 through MW-9. Blaine Tech Services personnel then purged and sampled all wells except MW-1 because of its historical low and nondetectable hydrocarbon concentrations. The wells were purged of at least three well casing volumes of water and allowed to recharge to at least 80% prior to collecting samples. During purging, it was noted that wells MW-6A and MW-10 had a sheen and well MW-7 had an odor. Samples were collected with new disposable bailers. Purge water was stored in labeled 55-gallon drums and stored at the subject site. Well monitoring forms are included in Attachment A.

Groundwater elevations across the site ranged from 7.05 to 10.87 feet above mean sea level. The groundwater flow direction was toward the southeast with a gradient ranging from 0.006 to 0.012 (32 to 63 ft/mile). Groundwater elevations are summarized in Table 1. The groundwater gradient map is shown on Figure 2.

The groundwater samples were delivered under chain of custody protocol to Entech Analytical Labs, Inc. (ELAP #2346). Kiff Analytical (ELAP #2236) was used as a subcontracted laboratory. The samples were analyzed for total petroleum hydrocarbons as gasoline, diesel, and motor oil (TPHg, TPHd, and TPHmo, respectively) using EPA methods 3510/3630/8015; and benzene, toluene, ethylbenzene, total xylenes (BTEX), and methyl tert-butyl ether (MTBE) using EPA method 8020. The analytical results are summarized in Table 2. The laboratory analytical reports are included in Attachment A.

Results

The analytical results of groundwater samples collected from wells MW-2 through MW-5, MW-6A, and MW-7 through MW-10 indicated the following:

1. TPHg was detected in all wells sampled this quarter ranging from 56 parts per billion (ppb) in well MW-8 to 5,000 ppb in well MW-5.
2. TPHd was detected in all wells sampled this quarter ranging from 100 ppb in well MW-3 to 180,000 ppb in well MW-6A.
3. TPHmo was detected at concentrations of 130 ppb and 210,000 ppb in samples collected from wells MW-8 and MW-10, respectively.
4. BTEX concentrations were nondetectable or near detection limits in samples collected from wells MW-2, MW-3, MW-4, MW-6A, MW-8, and MW-9.
5. BTEX concentrations in wells MW-5, MW-7, and MW-10 were similar to historical levels.
6. MTBE was detected at concentrations of 25 ppb and 12 ppb in samples collected from wells MW-4 and MW-5, respectively.

Conclusions/Discussion

The groundwater elevation has decreased an average of 0.19 feet since the last sampling round on August 10, 1999. However, the groundwater flow direction is consistent toward the southeast.

- The analytical results indicate that analytes present in the samples from wells MW-2 and MW-3 are similar to recent historical levels, except for 130 and 100 ppb TPHd, respectively. The TPHd levels had been below detection limits in both wells since December 1997.

- Similarly, the sample collected from well MW-4 contained analytes near historical levels, and TPHmo returned to nondetectable after 320 ppb were detected during August 1999.

- The sample collected from MW-5 contained the highest historical level of TPhd, however the remaining analytes were at concentrations similar to historical levels.

- The sample collected from MW-6A contained the highest level of TPHd for the site during this round of sampling while BTEX were at or near detection limits. These are similar to those reported for MW-6.

- The concentrations of analytes detected in the sample from well MW-7 are similar to historical levels, except that TPHd was detected for the first time since September 1997.

- The sample collected from well MW-8 contained TPHd for the first time since September 1997, TPHmo for the first time since sampling began in September 1994, and BTEX returned to nondetectable levels.

- The analytes detected in the sample from well MW-9 returned to historical levels.

- The sample collected from well MW-10 contained the highest level of TPHmo for the site during this sampling round.

Recommendations

ESCNC recommends destroying wells MW-4, MW-7, and MW-9 since the analyte concentrations detected this quarter returned to historical levels. Wells MW-1 and MW-8 are also recommended

for destruction, however, both wells have recently had concentrations of TPHmo reported in laboratory results.

In a letter dated October 1, 1999, ACHCS required one additional round of sampling well MW-1 for TPHmo. In addition, due to an anomalous detection of TPHmo in well MW-8 this quarter, ESCNC recommends one additional round of sampling of well MW-8 for TPHmo. Additional sampling of these wells will be reevaluated after completion of the fourth quarter 1999 sampling.

ESCNC recommends sampling wells MW-2, MW-3, MW-5, MW-6A, and MW-10 on a consecutive quarterly basis until first quarter 2000. These wells should be analyzed for TPHg and TPHd using modified EPA method 8015 and BTEX and MTBE using EPA method 8020. In addition, wells MW-6A and MW-10 should be analyzed for TPHmo using modified EPA method 8015. Additional sampling of these wells will be reevaluated after completion of the first quarter 2000 sampling is completed.

If you have any questions regarding this report, please call the undersigned at your earliest convenience.

Very truly yours,

EARTH SYSTEMS CONSULTANTS
Northern California

Jeanne Buckthal
Staff Geologist

Gary Pischke, CEG #1501
Senior Geologist

JB/GP:sw rep#304

Distribution: 1 to addressee
1 to Mr. John Beery

TABLE 1
Historical Groundwater Elevations
Mariner Square, Alameda, California

Well	Date	Top of Casing (feet above MSL)	Depth to Water (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet above MSL)
MW-1	07/30/92	5.08	6.41	-	-1.33
	07/31/92	5.08	6.41	-	-1.33
	08/03/92	5.08	6.50	-	-1.42
	08/05/92	5.08	6.50	-	-1.42
	11/20/92	5.08	6.23	-	-1.15
	06/13/94	11.99	5.69	-	6.30
	09/27/94	11.99	5.64	-	6.35
	10/25/94	11.99	5.86	-	6.13
	06/28/96	11.99	5.34	-	6.65
	10/31/96	11.99	5.38	-	6.61
	09/30/97	11.99	5.08	-	6.91
	12/12/97	11.99	4.16	-	7.83
	02/18/98	11.99	2.97	-	9.02
	05/08/98	11.99	4.55	-	7.44
	06/24/99	11.99	4.75	-	7.24
	08/10/99	11.99	4.82	-	7.17
	09/09/99	11.99	4.94	-	7.05
MW-2	07/30/92	8.30	5.98	-	2.32
	07/31/92	8.30	6.07	-	2.23
	08/03/92	8.30	6.11	-	2.19
	08/05/92	8.30	6.18	-	2.12
	11/20/92	8.30	6.42	-	1.88
	06/13/94	15.21	5.92	-	9.29
	09/26/94	15.21	6.51	-	8.70
	10/25/94	15.21	6.67	-	8.54
	06/28/96	15.21	5.68	-	9.53
	10/31/96	15.21	6.37	-	8.84
	09/30/97	15.21	6.17	-	9.04
	12/12/97	15.21	5.18	-	10.03
	02/18/98	15.21	3.96	-	11.25
	05/08/98	15.21	4.82	-	10.39
	06/24/99	15.21	4.69	-	10.52
	08/10/99	15.21	4.72	-	10.49
	09/09/99	15.21	5.31	-	9.90

TABLE 1
Historical Groundwater Elevations
Mariner Square, Alameda, California

Well	Date	Top of Casing (feet above MSL)	Depth to Water (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet above MSL)
MW-3	07/30/92	7.28	4.97	-	2.31
	07/31/92	7.28	5.05	-	2.23
	08/03/92	7.28	4.43	-	2.85
	08/05/92	7.28	5.06	-	2.22
	11/20/92	7.28	5.27	-	2.01
	06/13/94	14.19	4.91	-	9.28
	09/27/94	14.19	5.29	-	8.90
	10/25/94	14.19	5.42	-	8.77
	06/28/96	14.19	4.69	-	9.50
	10/31/96	14.19	5.24	-	8.95
	09/30/97	14.19	5.04	-	9.15
	12/12/97	14.19	4.32	-	9.87
	02/18/98	14.19	2.97	-	11.22
	05/08/98	14.19	3.85	-	10.34
	06/24/99	14.19	2.95	-	11.24
	08/10/99	14.19	3.01	-	11.18
	09/09/99	14.19	4.10	-	10.09
MW-4	07/30/92	7.05	4.81	-	2.24
	07/31/92	7.05	4.88	-	2.17
	08/05/92	7.05	4.96	-	2.09
	11/20/92	7.05	5.13	-	1.92
	06/13/94	13.95	4.50	-	9.45
	09/27/94	13.95	5.39	-	8.56
	10/25/94	13.95	5.55	-	8.40
	06/28/96	13.95	4.25	-	9.70
	10/31/96	13.95	5.05	-	8.90
	09/30/97	13.95	4.73	-	9.22
	12/12/97	13.95	3.65	-	10.30
	02/18/98	13.95	2.38	-	11.57
	05/08/98	13.95	3.47	-	10.48
	08/10/99	13.95	4.90	-	9.05
	09/09/99	13.95	3.99	-	9.96

TABLE 1
Historical Groundwater Elevations
Mariner Square, Alameda, California

Well	Date	Top of Casing (feet above MSL)	Depth to Water (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet above MSL)
MW-5	07/30/92	7.68	5.30	-	2.38
	07/31/92	7.68	5.42	-	2.26
	08/03/92	7.68	5.40	-	2.28
	08/05/92	7.68	5.47	-	2.21
	11/20/92	7.68	5.74	-	1.94
	06/13/94	14.60	5.30	-	9.30
	09/26/94	14.60	5.82	-	8.78
	10/25/94	14.60	5.95	-	8.65
	06/28/96	14.60	5.04	-	9.56
	10/31/96	14.60	5.73	-	8.87
	09/30/97	14.60	5.45	-	9.15
	12/12/97	14.60	4.71	-	9.89
	02/18/98	14.60	3.10	-	11.50
	05/08/98	14.60	4.13	-	10.47
	06/24/99	14.60	3.65	-	10.95
	08/10/99	14.60	3.71	-	10.89
	09/09/99	14.60	4.51	-	10.09
MW-6	6/13/94	14.81	5.96	0.02	8.85
	9/27/94	14.81	5.90	0.03	8.91
	10/07/94	14.81	5.82	Sheen	8.99
	10/14/94	14.81	5.89	Sheen	8.92
	10/21/94	14.81	5.90	Sheen	8.91
	10/25/94	14.81	5.99	Sheen	8.82
	06/28/96	14.81	5.33	0.16	9.48
	10/31/96	14.81	5.17	0.02	9.64
	09/30/97	14.81	5.58	Sheen	9.23
	12/12/97	14.81	4.84	0.39	9.97
	02/18/98	14.81	3.70	0.55	11.11
	04/28/98		Well Destroyed		
MW-6A	08/10/99	15.22	4.96	Sheen	10.26
	09/09/99	15.22	4.35	Sheen	10.87

TABLE 1
Historical Groundwater Elevations
Mariner Square, Alameda, California

Well	Date	Top of Casing (feet above MSL)	Depth to Water (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet above MSL)
MW-7	09/27/94	13.61	5.95	-	7.66
	10/25/94	13.61	6.09	-	7.52
	06/28/96	13.61	5.42	-	8.19
	10/31/96	13.61	5.90	-	7.71
	09/30/97	13.61	5.71	-	7.90
	12/12/97	13.61	4.58	-	9.03
	02/18/98	13.61	3.21	-	10.40
	05/08/98	13.61	4.49	-	9.12
	06/24/99	13.61	4.78	-	8.83
	08/10/99	13.61	4.76	-	8.85
	09/09/99	13.61	5.14	-	8.47
MW-8	09/27/94	12.64	6.06	-	6.58
	10/25/94	12.64	6.26	-	6.38
	06/28/96	12.64	6.00	-	6.64
	10/31/96	12.64	5.85	-	6.79
	09/30/97	12.64	5.60	-	7.04
	12/12/97	12.64	4.87	-	7.77
	02/18/98	12.64	3.80	-	8.84
	05/08/98	12.64	5.30	-	7.34
	06/24/99	12.64	5.42	-	7.22
	08/10/99	12.64	5.48	-	7.16
	09/09/99	12.64	5.50	-	7.14
MW-9	09/26/94	14.92	5.88	-	9.04
	10/25/94	14.92	6.04	-	8.88
	06/28/96	14.92	5.14	-	9.78
	10/31/96	14.92	6.37	-	8.55
	09/30/97	14.92	5.59	-	9.33
	12/12/97	14.92	4.53	-	10.39
	02/18/98	14.92	3.12	-	11.80
	05/08/98	14.92	4.20	-	10.72
	06/24/99	14.92	3.45	-	11.47
	08/10/99	14.92	3.56	-	11.36
	09/09/99	14.92	4.59	-	10.33

TABLE 1
Historical Groundwater Elevations
Mariner Square, Alameda, California

Well	Date	Top of Casing (feet above MSL)	Depth to Water (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet above MSL)
MW-10	08/10/99	14.91	4.55	Sheen	10.36
	09/09/99	14.91	5.08	Sheen	9.83

MSL Mean Sea Level NA Not Available
- None Measured

TABLE 2
Historical Groundwater Analytical Results -- Organics
Mariner Square, Alameda, California

WELL	DATE	TPHg	TPHd	TPHmo	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	VOCs	VINYL CHLORIDE
MW-1	08/03/92	-	580	<5,000	<0.5	<0.5	<0.5	<0.5	-	-	-
	11/20/92	<50	600	<5,000	<0.5	<0.5	<0.5	<0.5	-	-	<2
	09/27/94	<50	530	<50	<0.3	<0.3	<0.3	<0.3	-	-	-
	06/28/96	<100	<50	<200	<0.5	<1.0	<1.0	<2.0	-	-	<0.5
	10/31/96	<100	93	<200	<0.5	<1.0	<1.0	<2.0	<10	-	<1.0
	09/30/97	120	<50	<200	4.7	<1.0	3.7	21	<10	-	<0.8
	12/12/97	<50	<50	<200	<0.5	<0.5	<0.5	<2.0	<5	-	<2
	02/18/98	<50	<50	<200	1.5	0.6	1.8	8	<5	-	<2
	05/08/98	<50	<50	<200	1.0	<0.5	0.7	5	<5	-	<2
	06/24/99	<50	<50	110	<0.50	<0.50	<0.50	<1.5	<5.0	-	<0.50
	09/09/99	Sampling discontinued									
MW-2	08/03/92	-	2,200	<5,000	<0.5	6.5	3.2	5.3	-	-	-
	11/20/92	340	2,100	<5,000	<0.5	<0.5	<0.5	2.4	-	-	<2
	09/26/94	320	<50	240	<3.0	<3.0	<3.0	<3.0	-	-	-
	06/28/96 (1)	980	100 (2,3)	<200	0.5	<1.0	2.3	3.1	-	-	<0.5
	10/31/96	220	180	<200	<0.5	<1.0	<1.0	<2.0	<10	-	<1.0
	09/30/97	900	150 (2)	<200	0.8	<1.0	2	6.2	<10	-	<0.8
	12/12/97	360	<50	<200	1.1	<0.5	2.2	3	<5	-	<2
	02/18/98	90	<50	<200	<0.5	<0.5	1.1	2	<5	-	<2
	05/08/98	170	<50	<200	<0.5	<0.5	1.7	3	<5	-	<2
	06/24/99	<50	<50	<100	<0.50	0.66	<0.50	<1.5	<5.0	-	<0.50
	09/09/99	120	130	<100	<0.50	<0.50	<0.50	<0.50	<5.0	-	-
MW-3	08/03/92	-	1,000	<5,000	<0.5	1	<0.5	2.4	-	-	-
	11/20/92	98	2,000	<5,000	<0.5	<0.5	0.9	1	-	-	<2
	09/27/94	<50	720	<50	<3.0	<0.3	<0.3	<0.3	-	-	-
	06/28/96	<100	120 (2)	<200	<0.5	<1.0	<1.0	<2.0	-	-	<0.5
	10/31/96	<100	160	<200	<0.5	<1.0	<1.0	<2.0	<10	-	<1.0
	09/30/97	<100	70	<200	0.8	<1.0	<1.0	3.3	<10	-	<0.8
	12/12/97	80	<50	<200	0.7	<0.5	0.7	4	9	-	<2
	02/18/98	60	<50	<200	<0.5	<0.5	<0.5	4	7	-	<2

TABLE 2
Historical Groundwater Analytical Results -- Organics
Mariner Square, Alameda, California

WELL	DATE	TPHg	TPHd	TPHmo	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	VOCs	VINYL CHLORIDE
MW-3 continued	05/08/98	<50	<50	<200	0.5	<0.5	0.5	4	<5	-	<2
	06/24/99	<50	<50	<100	<0.50	1.1	<0.50	2.6	5.0	-	<0.50
	09/09/99	64	100	<100	<0.50	<0.50	<0.50	0.65	<5.0	-	-
MW-4	08/05/92	-	1,300	<5,000	16	2.6	0.6	2.7	-	-	9.0
	11/20/92	330	2,400	<5,000	31	5.2	0.7	2	-	-	13
	09/27/94	<50	890	<50	12	0.43	<0.3	<0.3	-	-	8.0
	06/28/96	180	170 (2,3)	<200	4	<1.0	<1.0	<2.0	-	-	2.5
	10/31/96	110	330	<200	6.2	<1.0	<1.0	<2.0	<10	-	4.3
	09/30/97	650	170 (2)	<200	3.9	<1.0	<1.0	<2.0	460	-	3.1
	12/12/97	260	<50	<200	4.9	0.9	<0.5	<2.0	320	-	3
	02/18/98	240	<50	<200	1.0	1.0	2.1	10	290	-	2
	05/08/98	90	<50	<200	0.5	0.5	0.8	5	30	-	<2
	08/10/99	93	270 (4)	320	0.59	1.4	<0.5	4.2	11	-	<0.5
	09/09/99	72	250	<100	<0.50	<0.50	<0.50	<0.50	25	-	-
MW-5	08/03/92	-	2,200	<5,000	9	6	49	11	-	-	-
	11/20/92	4,800	1,500	<5,000	7.6	12	5.8	26	-	-	<2
	09/26/94	3,100	780	<500	7.9	11	8.7	14	-	-	-
	06/28/96	5,000	610 (2,3)	790	1.2	6.8	21	14	-	-	<0.5
	10/31/96	6,800	4,900	860	20	5.9	15	19	<10	-	<1.0
	09/30/97	9,000	4,100 (2)	520	35	5.3	36	32	12	-	<0.8
	12/12/97	3,400	90	<200	26	4.6	5.9	13	11	-	<2
	02/18/98	3,200	<50	<200	7.9	1.4	14	12	<5	-	<2
	05/08/98	3,900	<50	<200	8.0	22	19	10	<5	-	<2
	06/24/99	290	60	<100	48	8.8	8.6	33	<5.0	-	<0.50
	09/09/99	5,000	8,800	<100	32	16	20	14	12	-	-

TABLE 2
Historical Groundwater Analytical Results -- Organics
Mariner Square, Alameda, California

WELL	DATE	TPHg	TPHd	TPHmo	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	VOCs	VINYL CHLORIDE
MW-6	05/25/93	460	2,700,000	-	<5.0	<5.0	<5.0	<5.0	-	-	<10
	9/27/94	1,100	9,900	3,200	<3.0	<3.0	<3.0	<3.0	-	-	<1.0
	06/28/96					Not Sampled-Sheen Present					
	09/30/97					Not Sampled-Sheen Present					
	12/12/97	21,000	1,900,000	43,000	5	<0.5	8	19	<50	-	<2
	02/18/98	70,000	<50	<200	20	20	20	70	<100		<2
	04/28/98	800	920	<200	<0.5	<0.5	<0.5	<2	<5	-	<2
	04/28/98					Well Destroyed					
MW-6A	08/10/99	770	5,400 (4)	3,900 (4)	1.7	<0.5	<0.5	1.9	<5.0	-	<0.5
	09/09/99	670	180,000	<5,000	<0.50	0.61	0.66	<0.50	<5.0	-	-
MW-7	09/27/94	<250	1,800	<250	<0.3	<0.3	<0.3	<0.3	-	-	<1.0
	06/28/96	560	490 (2,3)	<200	0.6	<1.0	<1.0	2.7	-	-	<0.5
	10/31/96	200	420	<200	1.1	<1.0	<1.0	<2.0	<10	-	<1.0
	09/30/97	750	190 (2)	<200	8.1	5.3	<1.0	6.9	<10	-	<0.8
	12/12/97	420	<50	<200	7.9	<0.5	<0.5	5	<5	-	<2
	02/18/98	650	<50	<200	9.5	0.6	<0.5	6	16	-	<2
	05/08/98	710	<50	<200	3.4	4.8	0.8	7	34	0.9 (5)	<2
	06/24/99	620	<250	<100	89	16	16	64	<5.0	-	<0.50
	09/09/99	420	400	<100	1.1	0.85	1.1	3.4	<5.0	-	-
MW-8	09/27/94	<50	320	<50	<0.3	<0.3	<0.3	<0.3	-	-	-
	06/28/96	<100	58 (2)	<200	<0.5	<1.0	<1.0	<2.0	-	-	<0.5
	10/31/96	<100	120	<200	<0.5	<1.0	<1.0	<2.0	<10	-	<1.0
	09/30/97	110	70 (2)	<200	4.2	<1.0	3.4	16	<10	-	<0.8
	12/12/97	<50	<50	<200	<0.5	<0.5	<0.5	<2.0	15	-	<2
	02/18/98	<50	<50	<200	0.9	<0.5	0.8	3	<5	-	<2
	05/08/98	<50	<50	<200	<0.5	<0.5	<0.5	<2.0	<5	-	<2
	06/24/99	350	<50	<100	64	11	12	45	<5.0	-	<0.50
	09/09/99	56	120	130	<0.50	<0.50	<0.50	<0.50	<5.0	-	-

TABLE 2
Historical Groundwater Analytical Results -- Organics
Mariner Square, Alameda, California

WELL	DATE	TPHg	TPHd	TPHmo	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	VOCs	VINYL CHLORIDE
MW-9	09/26/94	<500	2,200	<500	<0.3	<0.3	<0.3	<0.3	-	-	<1.0
	06/28/96	390	550 (2,3)	<200	5.2	<1.0	<1.0	<2.0	-	-	<0.5
	10/31/96	300	590	720	5.9	<1.0	<1.0	<2.0	<10	-	<1.0
	09/30/97	150	460 (2)	<200	0.6	<1.0	<1.0	2.7	<10	-	<0.8
	12/12/97	180	<50	<200	<0.5	<0.5	<0.5	<2.0	<5	-	<2
	02/18/98	100	<50	<200	<0.5	0.5	<0.5	<2.0	6	-	<2
	05/08/98	70	130	<200	<0.5	<0.5	<0.5	<2.0	16	-	<2
	06/24/99	380	140	<100	51	10	11	39	<5.0	-	<0.50
	09/09/99	140	340	<100	<0.5	<0.50	<0.50	1.0	<5.0	-	-
MW-10	08/10/99	1,300	3,000 (4)	8,200 (4)	9.2	1.9	12	46	<5.0	-	NA
	09/09/99	890	8,600	210,000	5.2	<0.50	13	37	<5.0	-	-

Notes:

All results reported in parts per billion

TPHg Total Petroleum Hydrocarbons as gasoline
THPd Total Petroleum Hydrocarbons as diesel
MTBE Methyl Tert-Butyl Ether
TPHmo Total Petroleum Hydrocarbons as motor oil
TRPH Total Recoverable Petroleum Hydrocarbons
VOCs Volatile Organic Compounds

< Analyte not detected at or above stated detection limit

(1) Water sample also analyzed for Freon 113 by EPA Method 8010A. Results were below the detection limit of 1.0 ppb.

(2) Qualitative identification is uncertain because the material present does not match laboratory standards.

(3) Quantitation uncertain due to matrix interferences

(4) Results within quantitation range; chromatographic pattern not typical of fuel

(5) Tetrochloroethene reported by lab on vinyl chloride sample unedited run.

File No. NFE-4392-01
October 1999

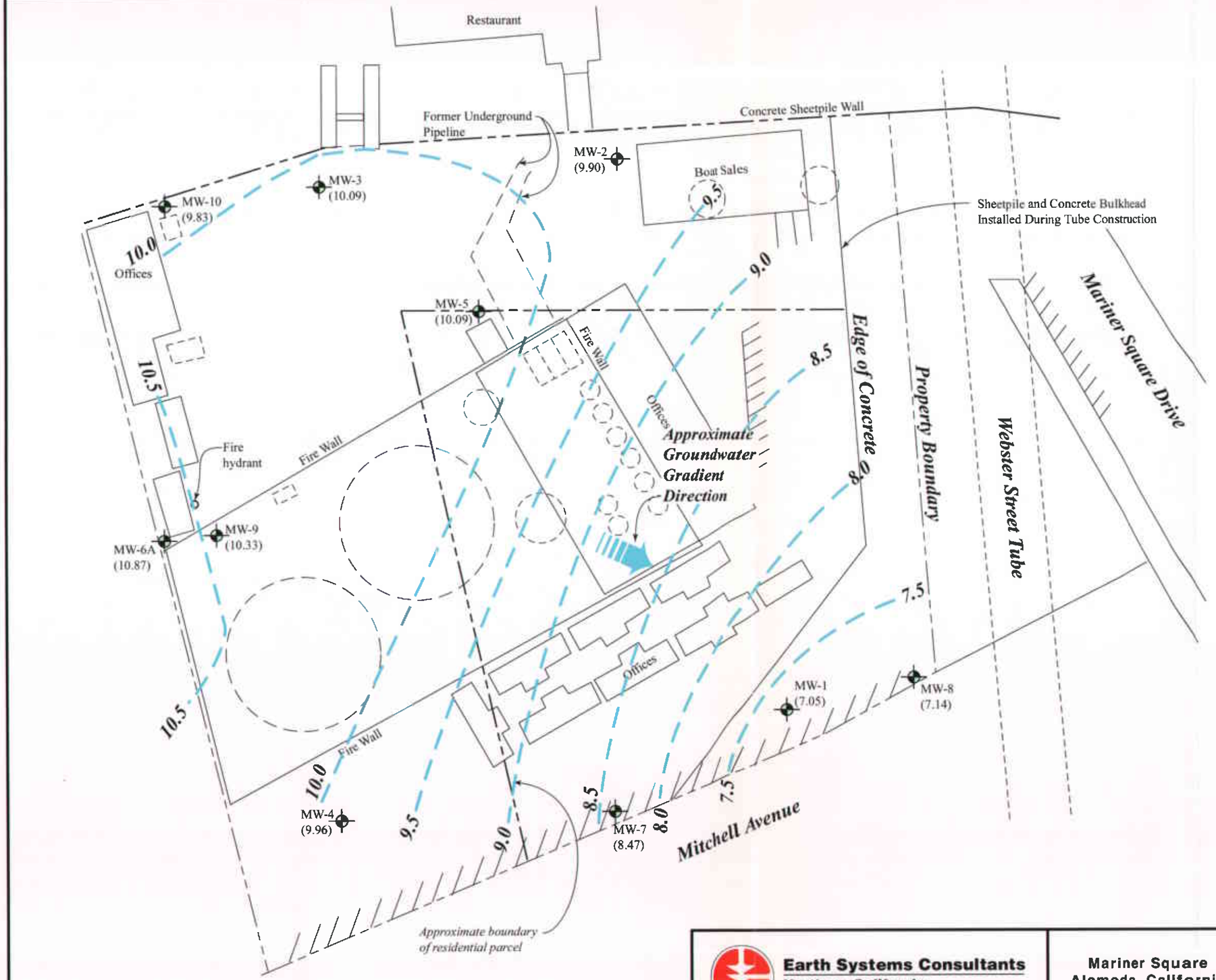
Approximate Scale 1: 24,000

1 0 1 Mile

1 0 1 Kilometer

Base: U.S.G.S. 7.5 minute Oakland West Quadrangle (1980)
Printed from TOPO!™ ©1997 Wildflower Productions (415) 558-8700, www.topo.com

Earth Systems Consultants Northern California	Mariner Square Alameda, California	**SITE LOCATION** Figure 1



Earth Systems Consultants
Northern California

Mariner Square
Alameda, California

GROUNDWATER GRADIENT MAP 9/9/99

Date: October 1999
File No: NFE-4392-01

Figure 2

WELL GAUGING DATA

Project # 990989-M1 Date 9-9-99 Client ___

EARTH SYSTEMS
Mariners Square
Alameda, CA

Site ___

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					4.94	11.42	TOC	✓✓
mw-2	2					5.31	14.18		✓✓
mw-3		Inaccessible				car over well			
mw-4	2					~~3.24~~ 3.99	~~11.42~~ 12.47		✓✓
mw-5		Inaccessible				car over well			
mw-6R	1	Sheen				4.35	11.90		✓✓
mw-7	4	odor				5.14	13.95		
mw-8	4					5.50	13.90		✓✓
mw-9	4					4.59	13.27		✓✓
mw-10	1	Sheen				5.08	11.98	↓	✓✓
MW3	2					4.10	11.22		✓✓
MW5	2					4.51	12.73		✓✓

WELL MONITORING DATA SHEET

Project #: 990909-N1	Client: Earth Systems
Sampler: MS	Start Date: 9-9-99
Well I.D.: MW-2	Well Diameter: ~~2~~ 3 4 6 8 ___
Total Well Depth: 14.18	Depth to Water: 5.31
Before: After:	Before: After:
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: ___

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

1.4 (Gals.) X 3 = 4.2 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1147	71.0	7.0	2190	>200	1.5	Turbid
1149	71.4	7.0	2210	>200	3	
1151	71.5	7.0	2150	>200	4.25	
		80%	= 7.08		actual = 6.07	

Did well dewater? Yes (No) Gallons actually evacuated: 4.25

Sampling Time: 1155 Sampling Date: 9-9-99

Sample I.D.: MW-2 Laboratory: Entech

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

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 #: 990909-M1	Client: Earth Systems
Sampler: MS	Start Date: 9-9-99
Well I.D.: MW-3	Well Diameter: ② 3 4 6 8 ___
Total Well Depth: 11.22	Depth to Water: 4.10
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSi HACH

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

Sampling Method: Bailer X
Disposable Bailer
Extraction Port
Other: _____

1.1 (Gals.) X 3 = 3.3 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
1411	69.2	6.8	2170	>200	1.25	Turb. & odor
1412	68.4	7.0	2030	>200	2.5	
1413	68.9	7.0	1970	>200	3.5	
	80%	= 5.52		actual =	4.15	

Did well dewater? Yes No — Gallons actually evacuated: 3.5

Sampling Time: 1420 — Sampling Date: 9-9-99

Sample I.D.: MW-3 — Laboratory: Entech

Analyzed for: TPH-G BTEX MTBE TPH-D — Other: motor oil

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 #: 990909-N1	Client: Earth Systems
Sampler: MS	Start Date: 9-9-99
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 12.47	Depth to Water: 5.99
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

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

Sampling Method: Bailer X
Disposable Bailer
Extraction Port
Other: ___

1.4 (Gals.) X 3 = 4.2 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.17	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
1119	68.0	7.0	1150	7200	1.5	Turbid
1122	68.3	7.0	1260	7200	3	
1124	68.3	7.0	1311	>200	4.25	
	80% = 5.68		actual =		4.41	

Did well dewater? Yes (No)	Gallons actually evacuated: 4.25
Sampling Time: 1130	Sampling Date: 9-9-99
Sample I.D.: MW-4	Laboratory: Entech
Analyzed for: TPH-G (BTEX) MTBE (TPH-D)	Other: motor oil
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 #: 990909-N1	Client: Enth Systems
Sampler: MS	Start Date: 9-9-99
Well I.D.: MW-5	Well Diameter: ⊙ 3 4 6 8 ___
Total Well Depth: 12.70	Depth to Water: 4.51
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

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

Sampling Method: Bailer X
Disposable Bailer
Extraction Port
Other: ___

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

1.3 (Gals.) X 3 = 3.9 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1438	70.9	6.9	1980	7200	1.5	odor/turbid
1440	70.6	6.9	1560	7200	3	
1441	70.7	6.9	1500	7200	4	
		80% =	6.14	actual =	5.42	

Did well dewater? Yes No		Gallons actually evacuated: 4	
Sampling Time: 1495		Sampling Date: 9-9-99	
Sample I.D.: MW-5		Laboratory: Entech	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other: Motor oil	
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 #: 990909-N1	Client: Earth Systems
Sampler: MS	Start Date: 9-9-99
Well I.D.: MW-6A	Well Diameter: 2 3 4 6 8 1
Total Well Depth: 11.90	Depth to Water: 9.35
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

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

Sampling Method: Bailer X; Disposable Bailer; Extraction Port; Other: _____

0.3 (Gals.) X 3 = 0.9 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

1" = 0.04

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
830	66.1	7.7	240	7200	0.3	Turbid / Sheen
837	65.8	7.9	225	7200	0.6	
844	65.7	7.9	218	7200	0.9	
		8.5% recharge		= 5.86	actual = 4.75	

Did well dewater? Yes (No) Gallons actually evacuated: 1.0

Sampling Time: 850 Sampling Date: 9-9-99

Sample I.D.: MW-6A Laboratory: Entech

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

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 #: 990909-N1	Client: Earth Systems
Sampler: MS	Start Date: 9-9-99
Well I.D.: MW-7	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 13.45	Depth to Water: 5.14
Before: After:	Before: After:
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 X
- Extraction Pump
- Other: ___

Sampling Method:
- Bailer X
- Disposable Bailer
- Extraction Port
- Other: ___

5.4 (Gals.) X 3 = 16.2 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
1222	70.4	6.7	7260	51	5.5	
1223	71.6	6.7	7340	44	11	
1224	72.3	6.7	8000	107	16.5	
		80% =	6.80	actual =	5.93	

Did well dewater? Yes (No)	Gallons actually evacuated: 17
Sampling Time: 1240	Sampling Date: 9-9-99
Sample I.D.: MW-7	Laboratory: Entech
Analyzed for: (TPH-G) (BTEX) MTBE (TPH-D)	Other: motor oil
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 #: 990909-M1	Client: Earth Systems
Sampler: MS	Start Date: 9-9-99
Well I.D.: MW-8	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 13.90	Depth to Water: 5.50
Before: After:	Before: After:
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 X / Extraction Pump / Other: ___

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

5.5 (Gals.) X 3 = 16.5 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
1009	68.7	7.4	1389	12	5.5	[redacted]
1010	68.5	7.5	1330	11	11	
1011	68.4	7.6	1400	11	16.5	
	80% =	7.18		actual = 5.68		

Did well dewater? Yes (No) — Gallons actually evacuated: 17

Sampling Time: 1015 — Sampling Date: 9-9-99

Sample I.D.: MW-8 — Laboratory: Entech

Analyzed for: ~~TPH-G~~ (BTEX) ~~MTBE~~ (TPH-D) — Other: motor oil

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 #: 990909-N1	Client: Earth Systems
Sampler: MS	Start Date: 9-9-99
Well I.D.: mw-9	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 13.27	Depth to Water: 4.59
Before: After:	Before: After:
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 X / Extraction Pump / Other: ___

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

5.6 (Gals.) X 3 = 16.8 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
1102	68.8	6.9	5920	17	5.75	
1103	68.9	6.9	4030	35	11.5	
1104	69.8	6.9	2030	50	17.25	
1105	69.9	7.0	1750	52	23	
1106	70.2	7.0	~~2200~~	49	28	
	80% =	6.32	actual =		4.65	

Did well dewater? Yes (No) — Gallons actually evacuated: 28

Sampling Time: 1200 — Sampling Date: 9-9-99

Sample I.D.: mw-9 — Laboratory: Entech

Analyzed for: ~~TPH-G~~ (BTEX) ~~MTBE~~ (TPH-D) — Other: motor oil

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 #: 990900-N1	Client: Earth Systems
Sampler: MS	Start Date: 9-9-99
Well I.D.: MW-10	Well Diameter: 2 3 4 6 8 1
Total Well Depth: 11.98	Depth to Water: 5.08
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

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

Sampling Method: Bailer X
Disposable Bailer
Extraction Port
Other: _____

0.3 (Gals.) X 3 = 0.9 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

0.04

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
923	68.4	7.1	1570	7200	0.3	turbid/sheen
930	68.3	7.0	1570	7200	0.6	
937	68.4	7.0	1580	7200	0.9	
	80% = 6.46			actual = 5.0		

Did well dewater? Yes (No) Gallons actually evacuated: 1.0

Sampling Time: 945 Sampling Date: 9-9-99

Sample I.D.: MW-10 Laboratory: Entech

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

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

ATTACHMENT B

Laboratory Analytical Reports

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

September 10, 1999

Jeanne Buckthal
Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400

Subject:	1 Water Sample
Lab #'s:	16254-005
Project Name:	Mariners Square
Project Number:	
P.O. Number:	Mariners Square Assoc.
Method(s):	EPA 8015, EPA 8020
Subcontract Lab(s):	Kiff Analytical (CAELAP 2236)

Dear Jeanne Buckthal,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#I-2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

KIFF ANALYTICAL LLC

Report Number : 14913
Date : 09/10/99

Michelle Anderson
Entech Analytical Labs
525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

Subject : 1 Water Sample
Project Name : Earth Systems Consultants
Project Number : 16254

Dear Ms. Anderson,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 14913
Date : 09/10/99

Project Name : **Earth Systems Consultants**
Project Number : **16254**

Sample : **MW-8** Matrix : Water
Sample Date :09/09/99

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8020	09/10/99
Toluene	**< 0.50**	0.50	ug/L	EPA 8020	09/10/99
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8020	09/10/99
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8020	09/10/99
Methyl-t-butyl ether	**< 5.0**	5.0	ug/L	EPA 8020	09/10/99
TPH as Gasoline	**56**	50	ug/L	M EPA 8015	09/10/99
TPH as Diesel	**120**	50	ug/L	M EPA 8015	09/10/99
TPH as Motor Oil	**130**	100	ug/L	M EPA 8015	09/10/99
aaa-Trifluorotoluene (8020 Surrogate)	103		% Recovery	EPA 8020	09/10/99
aaa-Trifluorotoluene (Gasoline Surrogate)	94.0		% Recovery	M EPA 8015	09/10/99

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

14913

Entech Analytical Labs, Inc.

CA ELAP # I-2346

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

Subcontract Chain of Custody

SAME DAY RUSH!

Subcontract Lab:	Project Name:	Date Sent:	Due Date:
Kiff	Earth Systems Consultants	9/9/99	9/10/99

Sample Number:	Customer Sample Number:	Matrix:	Test:	Method:	Collect Date:	Collect Time:	Bottle Type:	Preservative:
16254-005	MW-8	Water	BTEX-MTBE-Kiff	EPA 8020	9/9/99	10:15 AM	Amber/Voa	HCl ; 4 C -01
16254-005	MW-8	Water	TPH as Diesel-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	10:15 AM	Amber/Voa	HCl ; 4 C ~~-02~~
16254-005	MW-8	Water	TPH as Gasoline-Kiff	EPA 8015 MOD. (Purgeable)	9/9/99	10:15 AM	Amber/Voa	HCl ; 4 C -03
16254-005	MW-8	Water	TPH as Motor Oil-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	10:15 AM	Amber/Voa	HCl ; 4 C ~~-04~~

MEL 09/10/99 0816

Relinquished By:	Received By:	Date:	Time:
Jennifer Dunkin	via Golden State	9/9/99	18:00
Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:
	Chris Shutt	9/10/99	0824

Notes: Same Day RUSH!! Samples are due 9/10/99 for 16254-005 only

Samples received @ 13.3°C via Golden State Overnight. CT 9/10/99 0825

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY BTS # 990909-NM

CLIENT Earth Systems

SITE Mariners Square
Alameda, CA

CONDUCT ANALYSIS / DETECT

LAB ENTECH DHS #

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

☐ EPA ☐ RWQCB REGION _____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS

~~Invoice~~ / Report / ⓒ

Invoice to: Mariners Square Assoc.
Attn. John Rogers
2500 Main St. #100
Alameda, CA 94601

Report to: Earth Systems
Attn Jean Bucktrall

SAMPLE I.D.			MATRIX S = SOIL W = H2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	TPH-G / BTEX / MTBE	TPH-D	MOTOR OIL	Purgeable Halocarbons	Purgeable Aromatics	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-2	9-9-99	1155	W	5		X	X	X			*MW-8 only			16254-001
MW-4		1150				X	X	X			24 hour TAT			16254-002
MW-7		1240				X	X	X						16254-003
MW-6A		850				X	X	X						16254-004
* MW-8		1215				X	X	X			RUSH			16254-005
MW-9		1200				X	X	X						16254-006
MW-10		945				X	X	X						16254-007
MW-3		1420				X	X	X						16254-008
MW-5		1445				X	X	X						16254-009

SAMPLING COMPLETED	DATE	TIME
	9-9-99	1500

SAMPLING PERFORMED BY Zi K

RESULTS NEEDED NO LATER THAN

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Zi K	9-9-99	1600	Vinh Chu	9/9/99	16:00

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

September 16, 1999

Jeanne Buckthal
Earth Systems Consultants
47853 Warm Springs Blvd.
Fremont, CA 94539-7400

Subject:	8 Water Samples
Lab Order #:	16254
Project Name:	Mariners Square
Project Number:	
P.O. Number:	Mariners Square Assoc.
Method(s):	EPA 8015, EPA 8020
Subcontract Lab(s):	Kiff Analytical (CAELAP #2236)

Dear Jeanne Buckthal,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#I-2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

KIFF ANALYTICAL LLC

Report Number : 14914
Date : 09/16/99

Michelle Anderson
Entech Analytical Labs
525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

Subject : 8 Water Samples
Project Name : Earth Systems Consultants
Project Number :

Dear Ms. Anderson,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 14914
Date : 09/16/99

Project Name : **Earth Systems Consultants**
Project Number :

Sample : **MW-2** Matrix : Water
Sample Date :09/09/99

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	09/16/99
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	09/16/99
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	09/16/99
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	09/16/99
Methyl-t-butyl ether	**< 5.0**	5.0	ug/L	EPA 8260B	09/16/99
TPH as Gasoline	**120**	50	ug/L	EPA 8260B	09/16/99
TPH as Diesel	**130**	50	ug/L	M EPA 8015	09/16/99
TPH as Motor Oil	**< 100**	100	ug/L	M EPA 8015	09/16/99
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	09/16/99
4-Bromofluorobenzene (Surr)	96.3		% Recovery	EPA 8260B	09/16/99

Sample : **MW-4** Matrix : Water
Sample Date :09/09/99

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Toluene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Methyl-t-butyl ether	**25**	5.0	ug/L	EPA 8020	09/16/99
TPH as Gasoline	**72**	50	ug/L	M EPA 8015	09/16/99
TPH as Diesel	**250**	50	ug/L	M EPA 8015	09/16/99
TPH as Motor Oil	**< 100**	100	ug/L	M EPA 8015	09/16/99
aaa-Trifluorotoluene (8020 Surrogate)	98.6		% Recovery	EPA 8020	09/16/99
aaa-Trifluorotoluene (Gasoline Surrogate)	90.6		% Recovery	M EPA 8015	09/16/99

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 14914

Date : 09/16/99

Project Name : **Earth Systems Consultants**

Project Number :

Sample : **MW-7** Matrix : Water

Sample Date :09/09/99

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.1**	0.50	ug/L	EPA 8020	09/16/99
Toluene	**0.85**	0.50	ug/L	EPA 8020	09/16/99
Ethylbenzene	**1.1**	0.50	ug/L	EPA 8020	09/16/99
Total Xylenes	**3.4**	0.50	ug/L	EPA 8020	09/16/99
Methyl-t-butyl ether	**< 5.0**	5.0	ug/L	EPA 8020	09/16/99
TPH as Gasoline	**420**	50	ug/L	M EPA 8015	09/16/99
TPH as Diesel	**400**	50	ug/L	M EPA 8015	09/16/99
TPH as Motor Oil	**< 100**	100	ug/L	M EPA 8015	09/16/99
aaa-Trifluorotoluene (8020 Surrogate)	101		% Recovery	EPA 8020	09/16/99
aaa-Trifluorotoluene (Gasoline Surrogate)	94.3		% Recovery	M EPA 8015	09/16/99

Sample : **MW-6A** Matrix : Water

Sample Date :09/09/99

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Toluene	**0.61**	0.50	ug/L	EPA 8020	09/16/99
Ethylbenzene	**0.55**	0.50	ug/L	EPA 8020	09/16/99
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Methyl-t-butyl ether	**< 5.0**	5.0	ug/L	EPA 8020	09/16/99
TPH as Gasoline	**670**	50	ug/L	M EPA 8015	09/16/99
TPH as Diesel	**180000**	2500	ug/L	M EPA 8015	09/16/99
TPH as Motor Oil	**< 5000**	5000	ug/L	M EPA 8015	09/16/99
aaa-Trifluorotoluene (8020 Surrogate)	100		% Recovery	EPA 8020	09/16/99
aaa-Trifluorotoluene (Gasoline Surrogate)	91.0		% Recovery	M EPA 8015	09/16/99

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 14914

Date : 09/16/99

Project Name : **Earth Systems Consultants**

Project Number :

Sample : **MW-9** Matrix : Water

Sample Date :09/09/99

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Toluene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Total Xylenes	**1.0**	0.50	ug/L	EPA 8020	09/16/99
Methyl-t-butyl ether	**< 5.0**	5.0	ug/L	EPA 8020	09/16/99
TPH as Gasoline	**140**	50	ug/L	M EPA 8015	09/16/99
TPH as Diesel	**340**	50	ug/L	M EPA 8015	09/16/99
TPH as Motor Oil	**< 100**	100	ug/L	M EPA 8015	09/16/99
aaa-Trifluorotoluene (8020 Surrogate)	102		% Recovery	EPA 8020	09/16/99
aaa-Trifluorotoluene (Gasoline Surrogate)	93.4		% Recovery	M EPA 8015	09/16/99

Sample : **MW-10** Matrix : Water

Sample Date :09/09/99

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**5.2**	0.50	ug/L	EPA 8020	09/16/99
Toluene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Ethylbenzene	**13**	0.50	ug/L	EPA 8020	09/16/99
Total Xylenes	**37**	0.50	ug/L	EPA 8020	09/16/99
Methyl-t-butyl ether	**< 5.0**	5.0	ug/L	EPA 8020	09/16/99
TPH as Gasoline	**890**	50	ug/L	M EPA 8015	09/16/99
TPH as Diesel	**8600**	2500	ug/L	M EPA 8015	09/16/99
TPH as Motor Oil	**210000**	5000	ug/L	M EPA 8015	09/16/99
aaa-Trifluorotoluene (8020 Surrogate)	96.1		% Recovery	EPA 8020	09/16/99
aaa-Trifluorotoluene (Gasoline Surrogate)	92.9		% Recovery	M EPA 8015	09/16/99

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 14914

Date : 09/16/99

Project Name : **Earth Systems Consultants**

Project Number :

Sample : **MW-3** Matrix : Water

Sample Date :09/09/99

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Toluene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8020	09/16/99
Total Xylenes	**0.65**	0.50	ug/L	EPA 8020	09/16/99
Methyl-t-butyl ether	**< 5.0**	5.0	ug/L	EPA 8020	09/16/99
TPH as Gasoline	**64**	50	ug/L	M EPA 8015	09/16/99
TPH as Diesel	**100**	50	ug/L	M EPA 8015	09/16/99
TPH as Motor Oil	**< 100**	100	ug/L	M EPA 8015	09/16/99
aaa-Trifluorotoluene (8020 Surrogate)	104		% Recovery	EPA 8020	09/16/99
aaa-Trifluorotoluene (Gasoline Surrogate)	95.3		% Recovery	M EPA 8015	09/16/99

Sample : **MW-5** Matrix : Water

Sample Date :09/09/99

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**32**	5.0	ug/L	EPA 8020	09/16/99
Toluene	**16**	5.0	ug/L	EPA 8020	09/16/99
Ethylbenzene	**20**	5.0	ug/L	EPA 8020	09/16/99
Total Xylenes	**14**	5.0	ug/L	EPA 8020	09/16/99
Methyl-t-butyl ether	**12**	5.0	ug/L	EPA 8020	09/16/99
TPH as Gasoline	**5000**	50	ug/L	M EPA 8015	09/16/99
TPH as Diesel	**8800**	50	ug/L	M EPA 8015	09/16/99
TPH as Motor Oil	**< 100**	100	ug/L	M EPA 8015	09/16/99
aaa-Trifluorotoluene (8020 Surrogate)	124		% Recovery	EPA 8020	09/16/99
aaa-Trifluorotoluene (Gasoline Surrogate)	149		% Recovery	M EPA 8015	09/16/99

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

14914

Entech Analytical Labs, Inc.

CA ELAP # I-2346

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

Subcontract Chain of Custody

Subcontract Lab:	Project Name:	Date Sent:	Due Date:
Kiff	Earth Systems Consultants	9/9/99	9/16/99

Sample Number:	Customer Sample Number:	Matrix:	Test:	Method:	Collect Date:	Collect Time:	Bottle Type:	Preservative:	
16254-001	MW-2	Water	BTEX+MTBE-Kiff	EPA 8020	9/9/99	11:55 AM	Amber/Voa	HCl ; 4 C	-01
16254-001	MW-2	Water	TPH as Diesel-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	11:55 AM	Amber/Voa	HCl ; 4 C	
16254-001	MW-2	Water	TPH as Gasoline-Kiff	EPA 8015 MOD. (Purgeable)	9/9/99	11:55 AM	Amber/Voa	HCl ; 4 C	
16254-001	MW-2	Water	TPH as Motor Oil-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	11:55 AM	Amber/Voa	HCl ; 4 C	
16254-002	MW-4	Water	BTEX+MTBE-Kiff	EPA 8020	9/9/99	11:30 AM	Amber/Voa	HCl ; 4 C	-02
16254-002	MW-4	Water	TPH as Diesel-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	11:30 AM	Amber/Voa	HCl ; 4 C	
16254-002	MW-4	Water	TPH as Gasoline-Kiff	EPA 8015 MOD. (Purgeable)	9/9/99	11:30 AM	Amber/Voa	HCl ; 4 C	
16254-002	MW-4	Water	TPH as Motor Oil-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	11:30 AM	Amber/Voa	HCl ; 4 C	
16254-003	MW-7	Water	BTEX+MTBE-Kiff	EPA 8020	9/9/99	12:40 PM	Amber/Voa	HCl ; 4 C	-03
16254-003	MW-7	Water	TPH as Diesel-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	12:40 PM	Amber/Voa	HCl ; 4 C	
16254-003	MW-7	Water	TPH as Gasoline-Kiff	EPA 8015 MOD. (Purgeable)	9/9/99	12:40 PM	Amber/Voa	HCl ; 4 C	
16254-003	MW-7	Water	TPH as Motor Oil-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	12:40 PM	Amber/Voa	HCl ; 4 C	
16254-004	MW-6A	Water	BTEX+MTBE-Kiff	EPA 8020	9/9/99	6:50 PM	Amber/Voa	HCl ; 4 C	-04

Relinquished By:	Received By:	Date:	Time:
Mara Gruslis	Golden State	9/9/99	15:00
Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By: [signature]/KIFF	9/10/99	0815

Notes: Received samples @ 13.3°C via Golden State
[initials] 9/10/99 0820

Entech Analytical Labs, Inc.

CA ELAP # I-2346

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

Subcontract Chain of Custody

Subcontract Lab:	Project Name:	Date Sent:	Due Date:
Kiff	Earth Systems Consultants	9/9/99	9/16/99

Sample Number:	Customer Sample Number:	Matrix:	Test:	Method:	Collect Date:	Collect Time:	Bottle Type:	Preservative:	
16254-004	MW-6A	Water	TPH as Diesel-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	6:50 PM	Amber/Voa	HCl ; 4 C	-04
16254-004	MW-6A	Water	TPH as Gasoline-Kiff	EPA 8015 MOD. (Purgeable)	9/9/99	6:50 PM	Amber/Voa	HCl ; 4 C	
16254-004	MW-6A	Water	TPH as Motor Oil-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	6:50 PM	Amber/Voa	HCl ; 4 C	
16254-006	MW-9	Water	BTEX+MTBE-Kiff	EPA 8020	9/9/99	12:00 PM	Amber/Voa	HCl ; 4 C	-05
16254-006	MW-9	Water	TPH as Diesel-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	12:00 PM	Amber/Voa	HCl ; 4 C	
16254-006	MW-9	Water	TPH as Gasoline-Kiff	EPA 8015 MOD. (Purgeable)	9/9/99	12:00 PM	Amber/Voa	HCl ; 4 C	
16254-006	MW-9	Water	TPH as Motor Oil-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	12:00 PM	Amber/Voa	HCl ; 4 C	
16254-007	MW-10	Water	BTEX+MTBE-Kiff	EPA 8020	9/9/99	9:45 AM	Amber/Voa	HCl ; 4 C	-06
16254-007	MW-10	Water	TPH as Diesel-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	9:45 AM	Amber/Voa	HCl ; 4 C	
16254-007	MW-10	Water	TPH as Gasoline-Kiff	EPA 8015 MOD. (Purgeable)	9/9/99	9:45 AM	Amber/Voa	HCl ; 4 C	
16254-007	MW-10	Water	TPH as Motor Oil-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	9:45 AM	Amber/Voa	HCl ; 4 C	
16254-008	MW-3	Water	BTEX+MTBE-Kiff	EPA 8020	9/9/99	2:20 PM	Amber/Voa	HCl ; 4 C	-07
16254-008	MW-3	Water	TPH as Diesel-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	2:20 PM	Amber/Voa	HCl ; 4 C	

Relinquished By:	Received By:	Date:	Time:
Maria Grisles	Golden State	9/9/99	18:00
Relinquished By:	Received By:	Date:	Time:
Relinquished By:	Received By:	Date:	Time:
	KIFF	9/10/99	0815

Notes:

Entech Analytical Labs, Inc.

CA ELAP # I-2346

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

Subcontract Chain of Custody

Subcontract Lab:	Project Name:	Date Sent:	Due Date:
Kiff	Earth Systems Consultants	9/9/99	9/16/99

Sample Number:	Customer Sample Number:	Matrix:	Test:	Method:	Collect Date:	Collect Time:	Bottle Type:	Preservative:
16254-008	MW-3	Water	TPH as Gasoline-Kiff	EPA 8015 MOD. (Purgeable)	9/9/99	2:20 PM	Amber/Voa	HCl ; 4 C -07
16254-008	MW-3	Water	TPH as Motor Oil-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	2:20 PM	Amber/Voa	HCl ; 4 C
16254-009	MW-5	Water	BTEX+MTBE-Kiff	EPA 8020	9/9/99	2:45 PM	Amber/Voa	HCl ; 4 C -08
16254-009	MW-5	Water	TPH as Diesel-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	2:45 PM	Amber/Voa	HCl ; 4 C
16254-009	MW-5	Water	TPH as Gasoline-Kiff	EPA 8015 MOD. (Purgeable)	9/9/99	2:45 PM	Amber/Voa	HCl ; 4 C
16254-009	MW-5	Water	TPH as Motor Oil-Kiff	EPA 8015 MOD. (Extractable)	9/9/99	2:45 PM	Amber/Voa	HCl ; 4 C

Relinquished By:	Received By:	Date:	Time:
Mara Grisles	Golden State	9/9/99	1800
	Chris Shutt / KIFF	9/10/99	0815

Notes:

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY: BTS # 990909-N3

CLIENT: Levent Systems

SITE: Mariners Square
Alameda, CA

CONDUCT ANALYSIS TO DETECT: C = COMPOSITE ALL CONTAINERS | TPH-G / BTEX / MTBE | TPH-D | Motor Oil | ① | ②

LAB: Entech

DHS #

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

☐ EPA ☐ RWQCB REGION
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS
~~Invoice / Report~~ ②
Invoice to: Mariner Square Assoc.
Attn: John Rossi
2900 Main St. #100
Alameda, CA 94601
Report to: Levent Systems
Attn: Jeanne Buckthal

SAMPLE I.D.	DATE	TIME	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		C	TPH-G/BTEX/MTBE	TPH-D	MOTOR OIL				ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-2	9-9-99	1155	W	5			X	X	X				*MW-8 only			16254-001
MW-4	↓	1150	↓	↓			X	X	X				24 hour TAT			16254-002
MW-7		1240					X	X	X							16254-003
MW-6A		850					X	X	X							16254-004
*MW-8		1115					X	X	X				RUSH			16254-005
MW-9		1200					X	X	X							16254-006
MW-10		945					X	X	X							16254-007
MW-3		1420					X	X	X							16254-008
MW-5	↓	1445	↓	↓			X	X	X							16254-009

SAMPLING COMPLETED: DATE 9-9-99 TIME 1500
SAMPLING PERFORMED BY: [signature]
RESULTS NEEDED NO LATER THAN

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	9-9-99	1600	Vinh Khu	9/9/99	16:00

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #