ENVIRONMENTAL PROTECTION

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5814

Electrofuel, TPH-d, TPH-g & Benzene, need to run MTBE.

May 11, 2000
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 FIRST QUARTER 2000** + INSTALLATION OF MW-6.
444 Hegenberger ~~Road~~ LOOP
Oakland, California

Dear Mr. Murray:

E_2C, Inc. presents herein the results of the first quarter groundwater monitoring performed at 444 Hegenberger Road, Oakland, California (Site) (see Figure 1). The work was performed in accordance with the Alameda County Health Care Services' (ACHCS) approved Groundwater Monitoring Workplan for the Site prepared by Northwest Envirocon, Inc. (NWE, 1999). The Scope of Work consisted of the following:

- Measurement of groundwater elevations,
- Purging and subsequent sampling of groundwater from groundwater monitoring wells MW-2, MW-3, MW-4, MW-5, and MW-6 (see Figure 2 for locations),
- Chemical analyses of the groundwater samples,
- Analysis of the data, and
- Preparation of this report.

In addition, this report presents the data concerning the installation of a groundwater monitoring well (MW-6) downgradient of the former waste oil UST.

CURRENT GROUNDWATER MONITORING

Four shallow wells (MW-2 through MW-5) were located on the Site. Figure 2 depicts the locations of the wells. Well MW-1 was destroyed in accordance with ACHCS guidelines in December 1999 and reported in the fourth quarter 1999 monitoring report (E_2C, 2000).

These wells are used specifically for monitoring the physical and chemical conditions of groundwater in the uppermost groundwater-bearing zone beneath the Site.

On March 24 and 29, 2000, the first quarter monitoring round was performed. This sampling round was coordinated to take place after installation of the new well, MW-6. Prior to the collection of groundwater samples, the water level in each well was measured using a Solinst water level meter. These water levels were then used to calculate the groundwater elevation at each well.

After groundwater levels were measured and recorded, three to five well volumes were purged using, either a bailer or an ABS submersible pump, as the physical parameters (temperature, pH, and electrical conductivity) were measured. When the parameters stabilized, a groundwater sample was collected (data is summarized in Table 1 and Field Data Sheets are included as Appendix A).

Once the wells had been purged, groundwater samples were collected using a dedicated 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.

DISCUSSION OF GROUNDWATER FLOW CONDITIONS

Groundwater level measurement data were used to calculate groundwater elevations, groundwater flow direction, and groundwater gradient at the Site (Table 2 summarizes historical and current groundwater flow data).

Groundwater elevations were higher (a maximum of 0.47 foot in Well MW-5) than last quarter with the exception of Well MW-2, which decreased 0.23 foot (see Table 2). Overall, groundwater levels at the Site are still decreasing with the exception of the level at MW-2, which increased this quarter. It must be noted that the groundwater level at Well MW-2 was measured 5 days after the other wells. As such, this data point may be skewed. See Figure 3, a graph depicting groundwater elevation changes from the first sampling round in December 1998 until the present. As shown on Figure 3, groundwater levels in all wells still generally mimic each other with all showing a general decrease, except for that at MW-2 this quarter.

DISCUSSION OF GROUNDWATER GRADIENT PLOT

The data for the fourth quarter were plotted onto a base map (Figure 4 depicts fourth quarter groundwater flow conditions). This plot was then compared to plots prepared for previous reporting periods and is discussed in the following Section.

Several features are prominent on the groundwater gradient plot (see Figure 4). The general slope of the groundwater gradient at the Site has flattened slightly since last quarter. Between wells MW-2 and MW-4 the highest gradient occurs, 0.0469 feet vertical per feet horizontal distance (ft/ft) with a northerly direction (average between wells MW-2 and MW-4). Last quarter the gradient between these same two wells was 0.489 ft/ft (E_2C, 2000).

There is also a flow component between Well MW-2 and the area encompassing wells MW-5 and MW-3. The gradient between these wells increased from 0.0010 ft/ft last quarter (E_2C, 2000) to 0.0131 ft/ft this quarter.

Steep gradients are suggestive of lower permeability materials, as discussed last quarter (E_2C, 2000) as possibly evident between wells MW-2 and MW-4. Contrasting that would be an area of a flat gradient, which would contain materials of a higher permeability. This condition is evident in the area between wells MW-2 and MW-5/MW-3 (now includes Well MW-6).

Although the general groundwater flow directions and gradients are similar to those interpreted in the past, additional data will be needed to assess significant trends as to seasonal changes over the long term.

GROUNDWATER ANALYSES

The groundwater samples were analyzed for Total Petroleum Hydrocarbons as diesel (TPHd) and gasoline (TPHg) and for Benzene, Toluene, Ethylbenzene, and Xylenes (total) (BTEX) using Environmental Protection Agency Test Methods 8015M, and 8020, respectively. The results of the sample analyses are presented in Table 4. Copies of the laboratory report and the corresponding chain-of-custody form are in Appendix B.

Discussion of Analytical Results

Benzene in Groundwater

Benzene in groundwater is of primary concern as it has the lowest action limit of those compounds found at the Site and it is a known carcinogenic compound. Benzene concentrations detected in groundwater samples ranged from a low of 110 micrograms per liter (µg/L) (MW-2) to a high of 4,100 µg/L (MW-3), which is equivocal to parts/billion (ppb). The Maximum Contaminant Limit (MCL) in water for Benzene is 1 µg/L.

Concentrations of Benzene in groundwater decreased at one well (MW-2), whereas it increased in groundwater at three wells (MW-3, MW-4, and MW-5). The most significant increase was at Well MW-3 (170 µg/L last quarter, 4,100 µg/L this quarter). In general, Benzene concentrations remained somewhat stable with the exception of March 1999 and the significant increase at MW-3 seen this quarter (see Figure 5, a chart comparing Benzene concentrations over time).

Figure 6 depicts an isoconcentration plot of Benzene in groundwater. The contour interval used was 500 µg/L. Groundwater at Well MW-4, which has always had the lowest groundwater elevation, shows significantly less Benzene than at Well MW-3 this quarter, whereas the Benzene concentrations in groundwater at these two wells have been relatively similar in the past.

The interpreted low permeability zone between wells MW-2 and MW-4 may be inhibiting the spread of the Benzene-impacted groundwater in that area. The flatter gradient between wells MW-2 and MW-3 suggests that higher permeability materials occur in that area, thus the potential for the Benzene-impacted groundwater to spread in that area is greater.

TPHg in Groundwater

The concentrations of TPHg increased in all wells with a maximum increase at Well MW-3 (560 µg/L last quarter and 8,400 µg/L this quarter). An isoconcentration plot of TPHg concentrations (see Figure 7) shows the TPHg groundwater plume to be similar to the Benzene groundwater plume.

TPHd in Groundwater

TPHd increased in concentration in groundwater at all wells with a maximum ~~decrease~~ increase at Well MW-2 (not detected last quarter, 31,000 µg/L this quarter) (see Table 4).

Dissolved Oxygen and Oxygen Reduction Potentials

Starting last quarter, dissolved oxygen (DO) and oxygen-reduction potentials (ORP) were measured, pre- and post-purging as requested by the ACHCS (ACHCS, 1999). These measurements and the current quarter's measurements are summarized in Table 5 (data from field measurements recorded in Appendix A). Only two quarters of measurements have been taken, so there are not enough data to make an evaluation.

Conclusions Regarding the Analytical Data

TPHg, TPHd, and Benzene increased in concentrations throughout the Site for this sampling round. As only five sampling rounds have been performed at the Site, there are not enough data to determine significant concentration trends over the long term, however a potential exists for migration of Benzene-impacted groundwater to move off Site.

As DO and ORP have only been measured twice, significant trends regarding these parameters cannot be determined.

INSTALLATION OF WELL MW-6

In accordance with an ACHCS mandate (ACHCS, 2000), Well MW-6 was installed downgradient of the former waste oil UST. On March 30, 2000, MW-6 was installed 25 feet downgradient of the former waste oil UST (see Figure 2). The permit and boring log for the well are included as Appendix C. The State of California Well Completion Report was prepared and submitted on April 25, 2000.

A soil sample was collected at the 11-foot depth. This sample was analyzed for TPHg, TPHd, Total Petroleum Hydrocarbons as motor oil (TPHmo), BTEX, halogenated volatile organic compounds (HVOCs), semi-volatile organic compounds (SVOCs), and five metals (cadmium, chromium, lead, nickel, and zinc), as specified in ACHCS, 2000.

Soil Sample Analytical Results

Laboratory data sheets are included as Appendix D. Results are itemized following (see laboratory data sheets for detection limits):

- HVOCs were not detected at or above the respective method detection limits;
- SVOCs were not detected at or above the respective method detection limits;
- Metals were not detected at concentrations at or above regulatory action limits;
- BTEX was not detected at or above the respective method detection limits;
- TPHd, TPHg, and TPHmo were not detected at or above the respective method detection limits;

The soil sampled did have a fuel-type odor (see boring log), however the results were all non-detect.

RECOMMENDATIONS

Based on the data collected and the requirements of ACHCS, E_2C, Inc. recommends that groundwater monitoring be continued in accordance with the approved sampling schedule. Copies of this and future reports will be sent to Mr. Barney Chan of ACHCS.

The groundwater gradient plots suggest that groundwater extraction may be underway nearby at a site downgradient from MW-4, as suggested last quarter (E_2C, 2000). In addition, there appears to be the potential for off-site migration in the area of Well MW-3.

As recommended in the 1999 fourth quarter report (E_2C, 2000), it is recommended that a database review be performed to determine if there is an off-site extractor. This is necessary as an off-site extractor could pull impacted groundwater from the Site onto their site. The possibility of cross contamination or comingling plumes, enlarging the on-Site contaminant plume, and unknowingly contributing contaminants to an extraction point should be thoroughly researched.

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,

William A. Lawson
Project Geologist

Daniel J. Hidalgo, CHG
Senior Hydrogeologist

cc: Barney M. Chan/Alameda County Health Care Service
Walter H. Kim/E_2C

CERTIFIED HYDROGEOLOGIST
DANIEL J. HIDALGO
NO. 659
STATE OF CALIFORNIA

REFERENCES

Alameda County Health Care Services, September 22, 1999, Quarterly Monitoring Report for 444 Hegenberger Loop, Oakland, CA 94621 (ACHCS, 1999).

Alameda County Health Care Services, 444 Hegenberger Loop, Oakland, CA 94621 (ACHCS, 2000).

E_2C, Inc., January 21, 2000, Quarterly Groundwater Monitoring, Fourth Quarter 1999 (E_2C, 1999)

Northwest Envirocon, Inc., December 18, 1998, Supplemental Soil and Groundwater Assessment, 444 Hegenberger Road, Oakland, CA; NWE Project No. 05-001594 (NWE, 1998)

Northwest Envirocon, Inc., February 19, 1999, Groundwater Monitoring Work Plan for 444 Hegenberger Loop, Oakland 94621 (NWE, 1999)

FIGURES

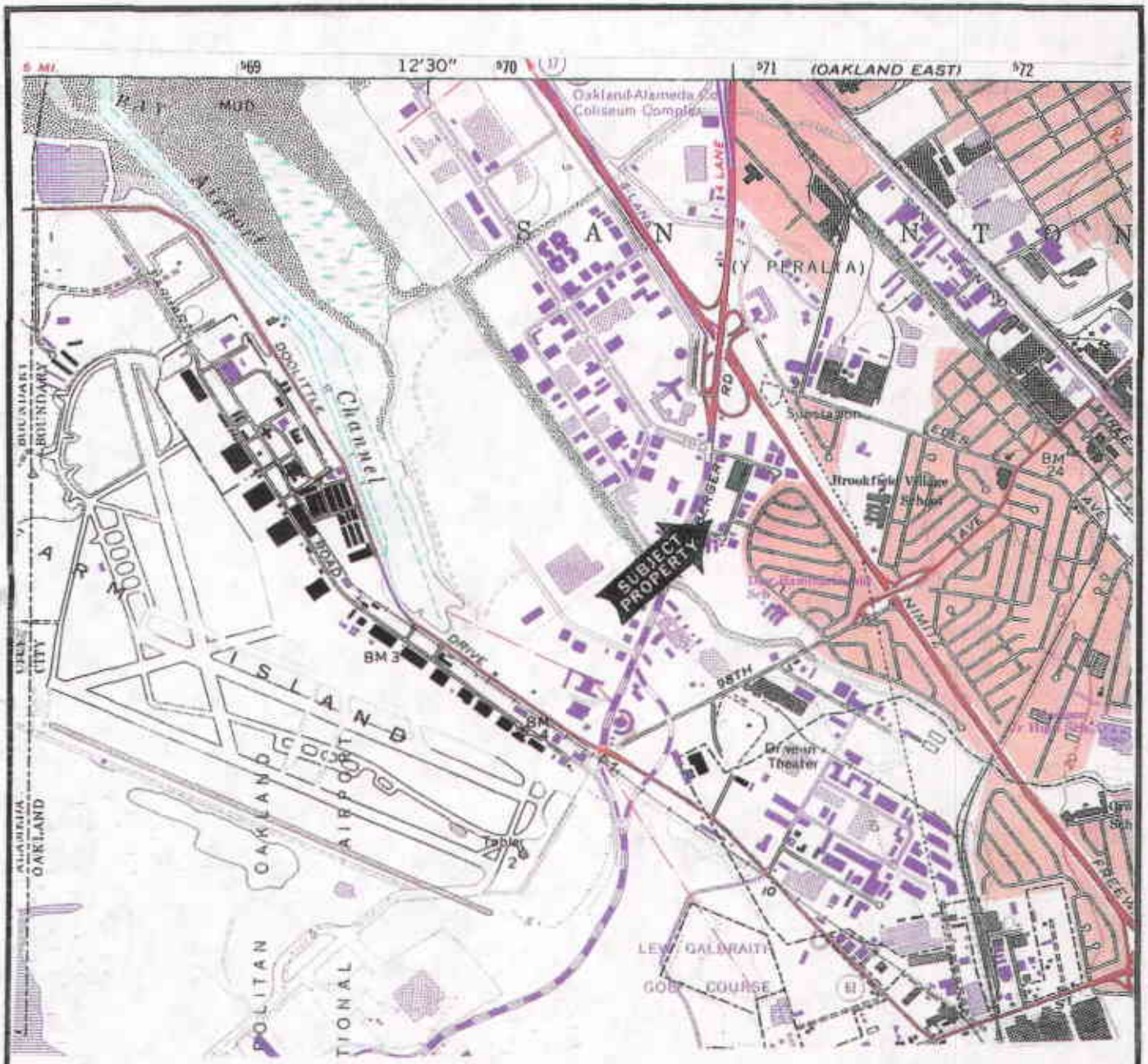

FIGURE 1 - SITE LOCATION MAP

444 Hegenberger Road	Client Name: McMorgan & Company
City, State: Oakland, California	E_2C Project Number: 1124SC01

E_2C INC.
Environmental/Engineering Consultants
382 Martin Avenue . Santa Clara, CA 95050

Source:
USGS Topo Map, San Leandro Quadrangle, California 7.5 Minute Series Topographic Map
1959, photorevised in 1980
1961 Photorevised 1980

N

HEGENBERGER ROAD

HEGENBERGER LOOP

GATE

MW-3

MW-4

FORMER PUMP ISLANDS

MW-2

MW-6

CONCRETE SLAB

MW-5

CONCRETE SLAB

FORMER WASTE
OIL TANK

MW-1
(DESTROYED 12.27.99)

SCALE IN FEET
0' 10' 20' 30'

EXPLANATION

MW-5 GROUNDWATER MONITORING WELL LOCATION

Figure 2 - SITE PLAN

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: MAY 2000
REVISION:
DRAWN:L.JUSTUS

Job Number:
1124SC01

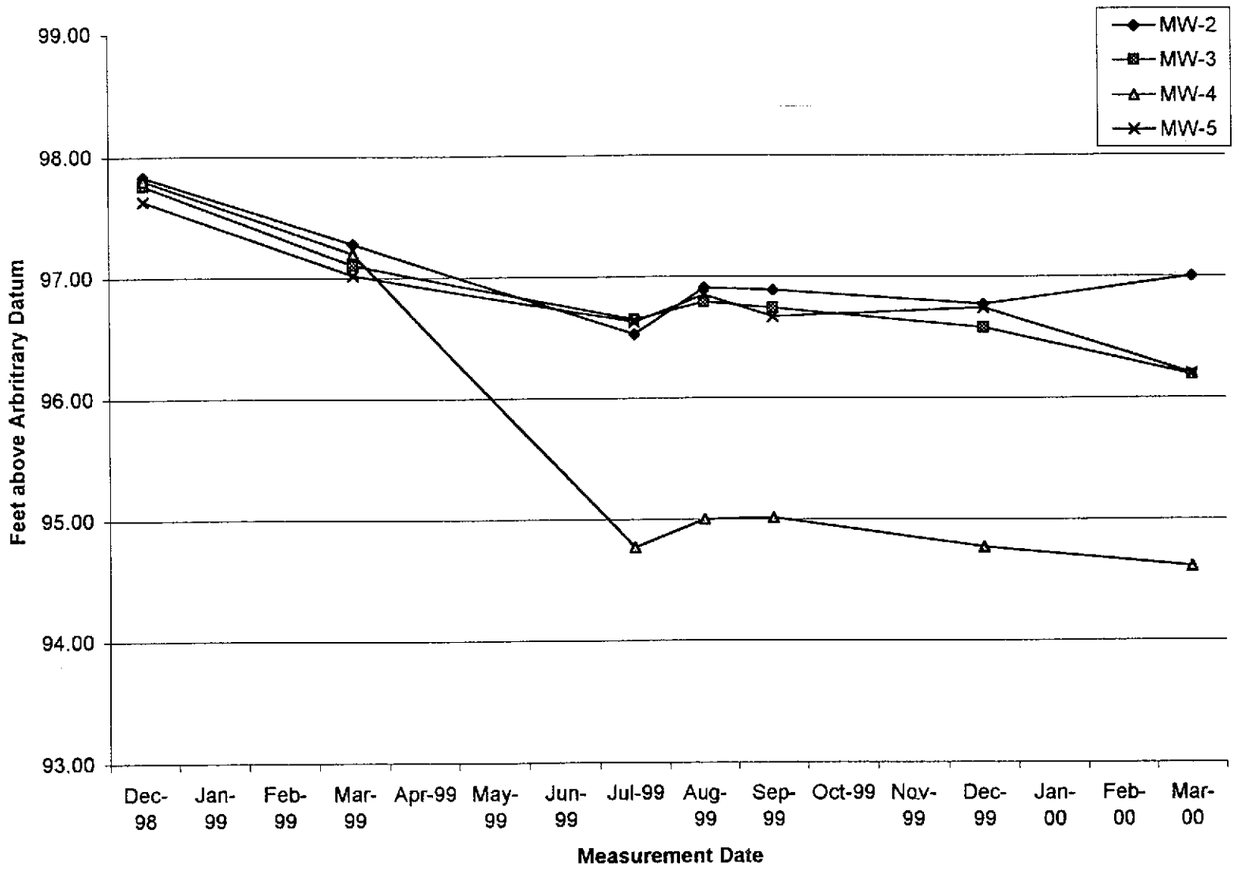

Figure 3 - COMPARISON OF GROUNDWATER LEVELS

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444 HEGENBERGER ROAD
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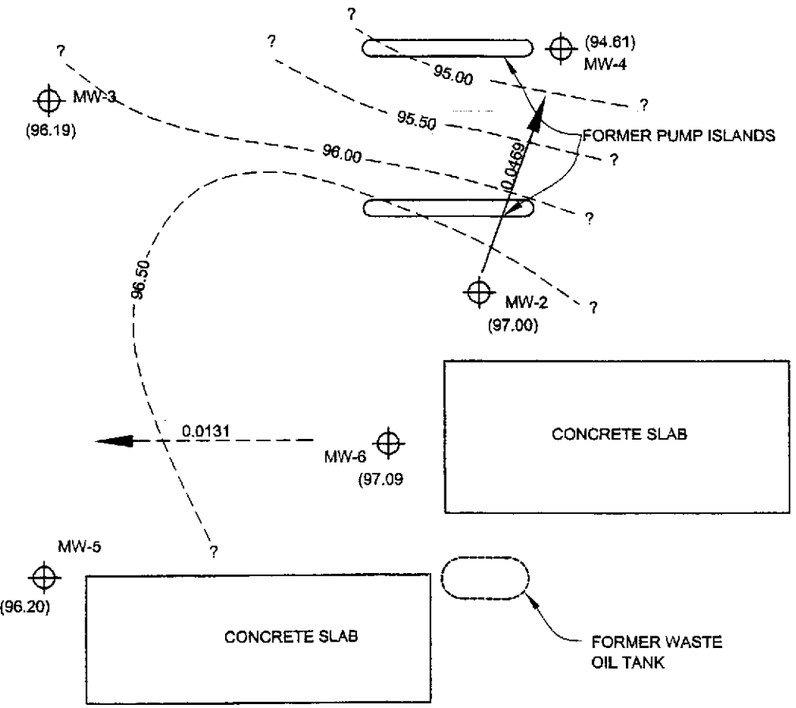
DRAWN: JUSTUS

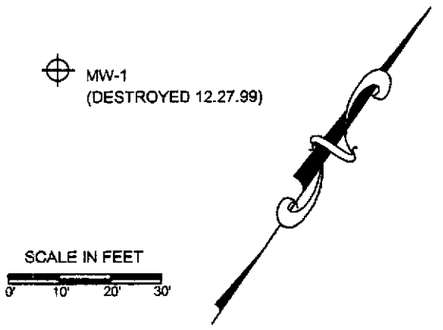
Job Number:
1124SC01

HEGENBERGER ROAD

HEGENBERGER LOOP

GATE





EXPLANATION

- MW-5 — GROUNDWATER MONITORING WELL LOCATION
- 96.5 — GROUNDWATER CONTOUR, CONTOUR INTERVAL = 0.5 FOOT; DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN)
- (96.20) — GROUNDWATER ELEVATION (BASED ON ARBITRARY DATUM)
- 0.0131 → GROUNDWATER FLOW DIRECTION INDICATING GRADIENT (ft/ft) AND DIRECTION

Figure 4 - GROUNDWATER GRADIENT PLOT (MARCH 2000)

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444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

FILENAME: 1124SC01
DATE: MAY 2000
REVISION:
DRAWN: JCL

Job Number:
1124SC01

Comparison of Benzene Levels

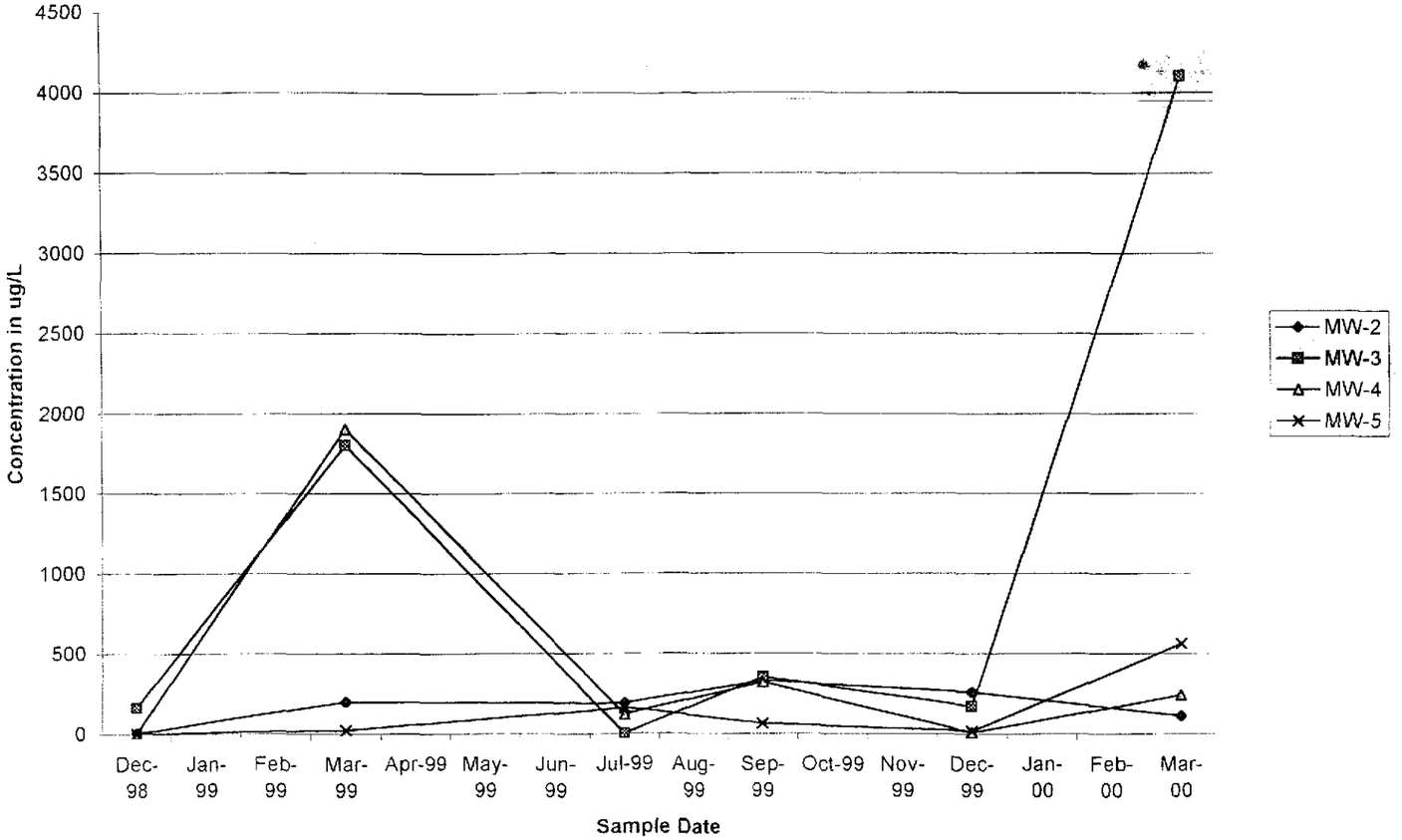

Figure 5 - BENZENE CONCENTRATION IN GROUNDWATER

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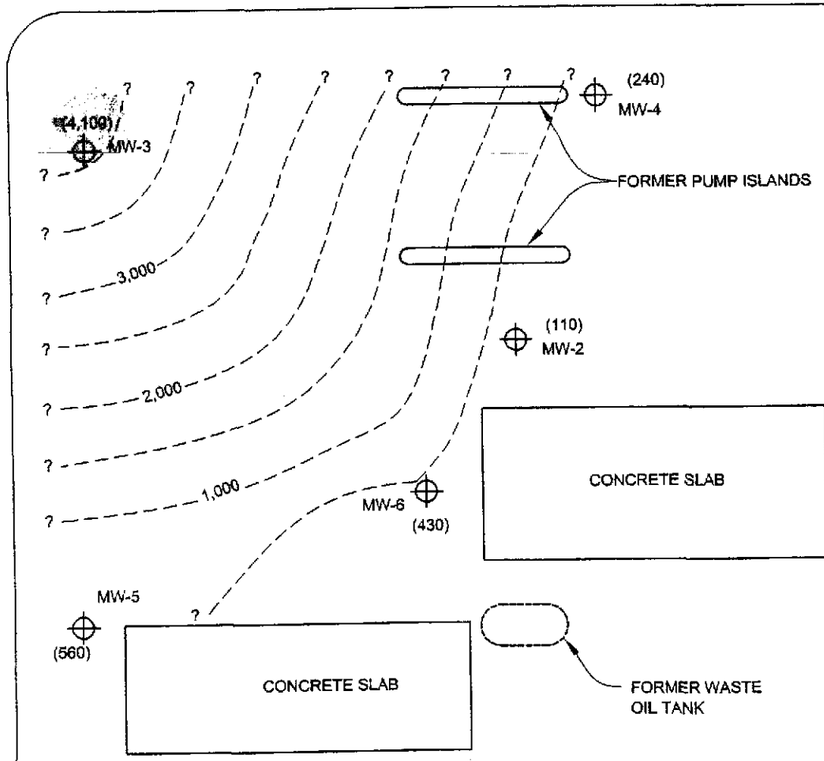
HEGENBERGER LOOP

GATE



MW-1
(DESTROYED 12.27.99)

SCALE IN FEET
0' 10' 20' 30'

EXPLANATION

MW-5 GROUNDWATER MONITORING WELL LOCATION

(110) BENZENE CONCENTRATION (µg/L)

? — — BENZENE ISOCONCENTRATION CONTOUR; CONTOUR INTERVAL 500µg/L; DASHED WHERE INFERRED, QUERIED WHERE UNKNOWN

Figure 6 - BENZENE GROUNDWATER ISOCONCENTRATION PLOT (MARCH 2000)

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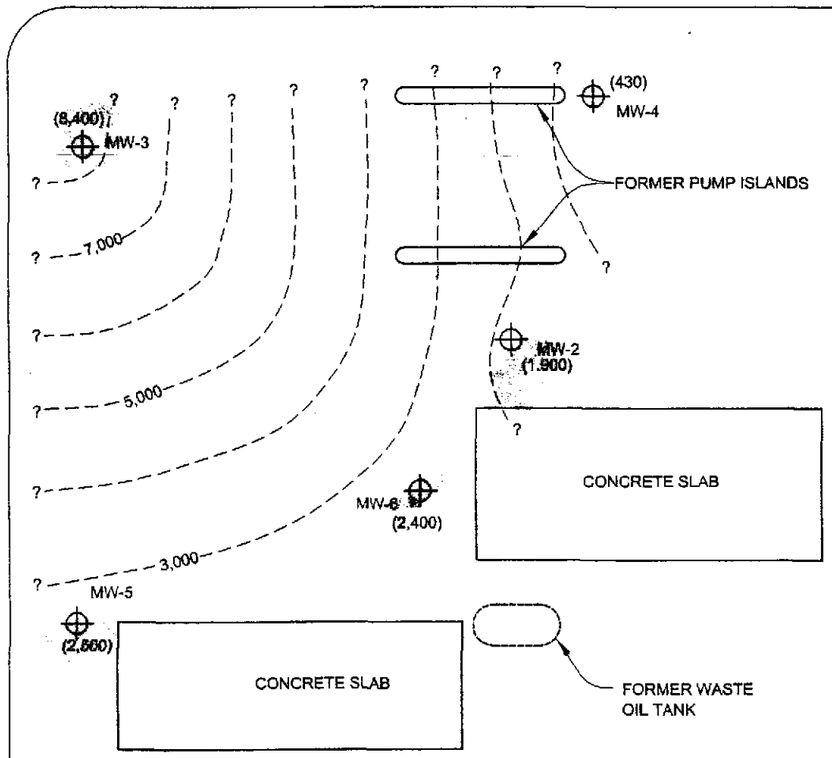
HEGENBERGER ROAD

HEGENBERGER LOOP

GATE



MW-1
(DESTROYED 12.27.99)

SCALE IN FEET
0' 10' 20' 30'

EXPLANATION

MW-5 GROUNDWATER MONITORING WELL LOCATION

(1,900) TPHg ISOCONCENTRATION IN µg/L

TPHg ISOCONCENTRATION CONTOUR;
CONTOUR INTERVAL = 1,000 µg/L;
DASHED WHERE APPROXIMATE, QUERIED WHERE UNKNOWN

Figure 7 - TPHg GROUNDWATER ISOCONCENTRATION PLOT (MARCH 2000)

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444 HEGENBERGER ROAD
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FILENAME: 1124SC01
DATE: MAY 2000
REVISION:
DRAWN: JUSTUS

Job Number:
1124SC01

TABLES

TABLE 1 - PHYSICAL CHARACTERISTICS OF GROUNDWATER MONITORING WELLS

WELL I.D.	DATE	INSTALLED WELL DEPTH (feet bgs)	SCREEN INTERVAL (feet bgs)	DEPTH TO BOC (feet bgs)	TOC ELEVATION (feet)	DEPTH TO GROUNDWATER (feet bgs)	GROUNDWATER ELEVATION (feet bgs)	COMMENTS
MW-1	12/02/98	20'	5'-20'	19.60	100.74	2.90	97.84	hard bottom
	03/08/99			19.35		3.43	97.31	soft bottom
	07/01/99			19.53		3.81	96.93	
	08/18/99			19.53		3.62	97.12	
	09/15/99			19.30		3.69	97.05	
	12/27/99			19.45		3.81	96.93	
	12/27/99	well destroyed						
MW-2	12/02/98	20'	5'-20'	19.79	102.44	4.61	97.83	soft bottom
	03/08/99			19.32		5.16	97.28	soft bottom
	07/01/99			19.43		5.91	96.53	
	08/18/99			19.43		5.53	96.91	
	09/15/99			19.43		5.55	96.89	
	12/27/99			19.52		5.55	96.89	
	03/29/00			19.57		5.44	97.00	
MW-3	12/02/98	20'	5'-20'	19.85	102.00	4.24	97.76	soft bottom
	03/08/99			19.24		4.90	97.10	soft bottom
	07/01/99			19.54		5.35	96.65	
	08/18/99			19.54		5.21	96.79	
	09/15/99			19.56		5.26	96.74	
	12/27/99			19.60		5.42	96.58	
	03/24/00			19.63		5.81	96.19	
MW-4	12/02/98	20'	5'-20'	19.15	100.00	2.20	97.80	soft bottom
	03/08/99			19.44		2.80	97.20	hard bottom
	07/01/99			19.48		5.23	94.77	
	08/18/99			19.48		5.00	95.00	
	09/15/99			19.42		4.99	95.01	
	12/27/99			19.58		5.23	94.77	
	03/24/00			19.63		5.39	94.61	
MW-5	12/02/98	20'	5'-20'	19.72	102.22	4.59	97.63	soft bottom
	03/08/99			19.72		5.20	97.02	hard bottom
	07/01/99			19.61		5.59	96.63	
	08/18/99			19.61		5.37	96.85	
	09/15/99			19.55		5.55	96.67	
	12/27/99			19.54		5.48	96.74	
	03/24/00			19.57		6.02	96.20	
MW-6	03/24/00	20	10'-20'	18.39	102.58	5.49	97.09	

bgs = below ground surface
BOC = Bottom of casing
TOC = Top of casing
TOC Elevation is relative to an arbitrary datum of 100 feet MSL

TABLE 2 - COMPARISON OF GROUNDWATER ELEVATIONS

WELL I.D.	DATE	GROUNDWATER ELEVATION (feet bgs)	DIFFERENTIAL	OVERALL DIFFERENTIAL (feet)
MW-1	12/02/98	97.84	na	na
	03/08/99	97.31	0.53	0.53
	07/01/99	96.93	0.38	0.91
	08/18/99	97.12	-0.19	0.72
	09/15/99	97.05	0.07	0.79
	12/27/99	96.93	0.12	0.91
	03/24/00	na	destroyed 12/27/99	
MW-2	12/02/98	97.83	na	na
	03/08/99	97.28	0.55	0.55
	07/01/99	96.53	0.75	1.30
	08/18/99	96.91	-0.38	0.92
	09/15/99	96.89	0.02	0.94
	12/27/99	96.77	0.12	1.06
	03/29/00	97.00	-0.23	0.83
MW-3	12/02/98	97.76	na	na
	03/08/99	97.10	0.66	0.66
	07/01/99	96.65	0.45	1.11
	08/18/99	96.79	-0.14	0.97
	09/15/99	96.74	0.05	1.02
	12/27/99	96.58	0.16	1.18
	03/24/00	96.19	decr. 0.39	1.57
MW-4	12/02/98	97.80	na	na
	03/08/99	97.20	0.6	0.60
	07/01/99	94.77	2.43	3.03
	08/18/99	95.00	-0.23	2.80
	09/15/99	95.01	-0.01	2.79
	12/27/99	94.77	0.24	3.03
	03/24/00	94.61	0.16	3.19
MW-5	12/02/98	97.63	na	na
	03/08/99	97.02	0.61	0.61
	07/01/99	96.63	0.39	1.00
	08/18/99	96.85	-0.22	0.78
	09/15/99	96.67	0.18	0.96
	12/27/99	96.74	-0.07	0.89
	03/24/00	96.20	0.54	1.43
MW-6	03/24/00	97.09	na	na

* = Flow component between Wells MW-2 and MW-4

** = Flow component between Wells MW-2, MW-3, and MW-5

Figure 2 presents groundwater gradient plot

TABLE 3 - SUMMARY OF HISTORICAL GROUNDWATER FLOW CONDITIONS

DATE	WELL I.D.	GROUNDWATER ELEVATION (feet bgs)	GROUNDWATER FLOW DIRECTION	GROUNDWATER GRADIENT (feet/feet)
12/02/98	MW-1	97.84	W	0.00091
	MW-2	97.83		
	MW-3	97.76		
	MW-4	97.80		
	MW-5	97.63		
03/08/99	MW-1	97.31	SW	0.00086
	MW-2	97.28		
	MW-3	97.10		
	MW-4	97.20		
	MW-5	97.02		
07/01/99	MW-1	96.93	SW	0.0011
	MW-2	96.53		
	MW-3	96.65		
	MW-4	94.77		
	MW-5	96.63		
8/18	MW-1	96.93	W	0.0013
	MW-2	96.91		
	MW-3	96.65		
	MW-4	94.77		
	MW-5	96.63		
09/15/99	MW-1	97.05	N*	0.04089*
	MW-2	96.89		
	MW-3	96.74		
	MW-4	95.01	W	0.00125**
	MW-5	96.81		
12/27/99	MW-1	96.93	W**	0.0010**
	MW-2	96.77		
	MW-3	96.58		
	MW-4	94.77	N*	0.0489*
	MW-5	96.74		
03/24/00	MW-2	97.00***	NW	0.0469 (from MW-2 to MW-4)
	MW-3	96.19		
	MW-4	94.61		
	MW-5	96.20	WSW	0.0131 (from MW-6 to area of MW-5)
	MW-6	97.09		

* = Flow component between Wells MW-2 and MW-4
** = Flow component between Wells MW-2, MW-3, and MW-5
*** = Measurement taken 3/29/00
Figure 2 presents groundwater gradient plot
Well MW-1 destroyed 12/27/99
Well MW-6 installed 3/20/00

TABLE 4 - HISTORICAL GROUNDWATER ANALYTICAL DATA

Well ID	Date	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1	12/2/98(a)	<50	<50	<0.05	<0.05	<0.05	<0.05
	03/08/99	190	<50	<0.3	<0.3	<0.3	<0.3
	07/01/99	<50	<50	<0.5	<0.5	<0.5	<0.5D
	09/15/99	<50	3,100	<0.5	9.6	7.8	12
	12/27/99	<50	<50	< 0.5	< 0.5	< 0.5	< 0.5
	12/27/99	well destroyed					
MW-2	12/2/98(a)	99	<50	4.6	0.85	0.57	5
	03/08/99	210	180	200(a)	0.74	1.3	2.3
	07/01/99	<50	1,100	190	13	33	36
	09/15/99	100*	990	330	9.7	11	19
	12/27/99	<50	1,000	260	7.2	1.3	10.0
	03/29/00	31,000	1,900	110	4.8	9.5	12.0
MW-3	12/2/98(a)	300	970	160	6.5	16	9
	03/08/99	1,400	2,600	1,800(b)	30(c)	67(c)	26(c)
	07/01/99	150*	3,000	1	<0.5	32	36
	09/15/99	110*	1,100	350	8.3	5.4	10
	12/27/99	70	560	170	2.1	7.6	3.1
	03/24/00	1,000	8,400	4,100	71	190	75
MW-4	12/2/98(a)	620	<50	1.1	0.37	<0.3	2.0
	03/08/99	<50	1,300	1,900(b)	9.4	1.2	11
	07/01/99	<50	610**	120	<0.5	<0.5	<0.5
	09/15/99	59*	830	320	6.5	1.7	<2.0
	12/27/99	<50	55	5.8	< 0.5	< 0.5	< 0.5
	03/24/00	77	430	240	3.3	0.98	1.5
MW-5	12/2/98(a)	620	<50	1.1	0.37	<0.3	2.0
	03/08/99	<50	58	23	0.31	<0.3	1.8
	07/01/99	64*	1,900	160	10	13	22
	09/15/99	<50	410	64	2.1	1.3	2.7
	12/27/99	<50	130	15	0.73	< 0.5	< 0.5
	03/24/00	460	2,500	560	57	18	87
MW-6	03/24/00	470	2,400	430	16	340	73
	MCLs	NE	NE	1	100	680	1,750

MTBE ?

Notes:

Concentrations in micrograms per liter (ug/L)

Values shaded exceed MCLs

NE = No MCL or Action Level has been established for this substance

MCLs = Maximum Contaminant Levels per State Office of Drinking Water Standards

TPHd = Total petroleum hydrocarbons as diesel

TPHg = Total petroleum hydrocarbons as gasoline

* = Analytical results within quantitation range for diesel, however chromatographic pattern not typical of fuel

** = Analytical results within quantitation range for diesel, however chromatographic pattern 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 5 - COMPARISON OF DO AND ORP DATA

WELL I.D.	DATE	Dissolved Oxygen (mg/L)		ORP (uS)	
		pre-purge	post-purge		
MW-1	12/27/98	1.9	2.0	171	239
MW-2	12/27/98	1.0	1.8	221	219
	03/24/00	0.1	0.7	-16	-14
MW-3	12/27/98	1.0	1.3	162	-24
	03/24/00	1.1	3.6	112	61
MW-4	12/27/98	1.0	2.1	257	nr
	03/24/00	0.7	2.1	144	158
MW-5	12/27/98	1.8	1.6	189	186
	03/24/00	0.9	2.4	227	211
MW-6	03/24/00	1.2	3.8	-11	-48

Notes:
DO measurement is post-purge, downhole
nr = nor measurement
ORP = Oxygen reduction potential

APPENDIX A

WELL MONITORING FIELD DATA SHEETS

DUGAN ASSOCIATES
SAMPLING
SERVICES
Subsurface Environmental Sampling

1180 DELMAS AVE. Tel. (408) 287-2175
SAN JOSE, CA 95125 Fax (408) 287-2176

Groundwater Monitoring & Sampling Record

Site Name

Date 3-29-00 **Milage:**

Field Crew Dave Nitzberg **Well I.D.** MW-2

Task ☒ Well Gauging ☒ Well Sampling ☐ Pump Test

Wellhead Inspection

yes no
☐ ☒ Well locked?
☐ ☒ Well Cap need replacement?

Purge Method ☒ Disposable Bailer ☐ Grundfos ☐ PVC Bailer ☐ 2"-Whaler

Purge Volume Calculations

Total Depth of well 19.57 ft
Depth to water 5.44 ft
Height of Water in well 14.13 ft

14.13 ft (Height of Water in well) x (2-inch Casing = 0.16 gal/ft; 4-inch casing = 0.667 gal/ft; 5-inch casing = 1.02 gal/ft; 6-inch casing = 1.47 gal/ft) = 2.26 gal (One Well Volume)

2.26 gal (One Well Volume) x 3 (Number of Purged Well Volumes) = 6.78 gal Purge Volume

Decon Log

Pump I.D. N/A

yes no
☐ ☐ Steam-cleaned?
☐ ☐ Alconox rinse?

Bailer I.D. _____

yes no
☐ ☒ Steam-cleaned?
☒ ☐ Alconox rinse?

Drum Log

yes no
☒ ☐ 55-gallon drum

Drum I.D. 00Q1-119

Sample Containers:

☒ 40 ml VOA vials
☒ 1-liter amber glass
☐ 16-oz plastic bottle

Field Observation/Notes: Signs of greasy product. Powerful odor.

TIME	GALLONS	Purge Status	D.O. (ppm)	O.R.P. (uS)	pH	EH (uS)	TEMP. F	DTW (ft) BTOC
	0 - Initial	Pre-Purge	—	—	—	—	—	
1:15pm	0 - Static	Pre-Purge	.1	—	—	—	—	5.44
1:19pm	2.26	Purging	—	-16	7.47	998	63.8°	—
1:23pm	4.52	Purging	—	-27	7.58	867	62.9°	—
1:27pm	6.78	Purging	—	-14	7.57	890	63.5°	—
	—	Post-Purge		—	—	—	—	
1:39pm	—	Post-Purge	.7	—	—	—	—	6.39
	—	Collect Sample		—	—	—	—	

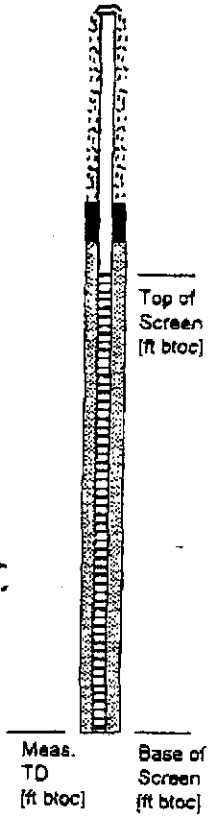
Recovery Data: Post Purge / Static x 100 = 5.44 / 6.39 = 85 %

Sample Collection: ☒ Disposable Bailer ☐ PVC Bailer ☐ Stainless-Steel Bailer ☐ No Product Odor ☒ Product Odor

Sample Depth: 6.75 feet. [ft btoc]

Sample Handing: Place in iced-storage.

Groundwater Stratigraphy [Screened Interval]:



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DUGAN ASSOCIATES
SAMPLING
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Subsurface Environmental Sampling

1180 DELMAS AVE.
SAN JOSE, CA 95125

Tel. (408) 287-2175
Fax. (408) 287-2176

Groundwater Monitoring & Sampling Record

Site Name C²C Hegenberger

Date 3.24.00 Milage:

Field Crew Dave Nitzberg Well I.D. MW-3

Task ☒ Well Gauging ☒ Well Sampling ☐ Pump Test

Wellhead Inspection

yes no
☒ ☐ Well locked?
☐ ☒ Well Cap need replacement?

Purge Method ☐ Disposable Bailer ☐ Grundfos ☒ PVC Bailer ☐ 2"-Whaler

Purge Volume Calculations

Total Depth of well 15.63 ft
Depth to water 5.81 ft
Height of Water in well 13.82 ft

13.82 ft (Height of Water in well) x 2-inch Casing = 0.16 gal/ft; 4-inch casing = 0.667 gal/ft; 5-inch casing = 1.02 gal/ft; 6-inch casing = 1.47 gal/ft = 2.21 gal (One Well Volume)

2.21 gal (One Well Volume) x 3 (Number of Purge Well Volumes) = 6.63 gal Purge Volume

Decon Log

Pump I.D. N/A

yes no
☐ ☐ Steam-cleaned?
☐ ☐ Alconox rinse?

Bailer I.D. _____

yes no
☐ ☒ Steam-cleaned?
☒ ☐ Alconox rinse?

Drum Log

yes no
☒ ☐ 55-gallon drum

Drum I.D. 00Q1-119

Sample Containers:

☒ 40 ml VOA vials 6
☒ 1-liter amber glass 1
☐ 16-oz plastic bottle

Field Observation/Notes:

TIME	GALLONS	Purge Status	D.O. (ppm)	O.R.P. (uS)	pH	EH (uS)	TEMP. F	DTW (ft) BTOC
	0 - Initial	Pre-Purge	—	—	—	—	—	
10:39	0 - Static	Pre-Purge	1.1	—	—	—	—	5.81'
10:41	2.2'	Purging	—	112	7.05	496	63.6°	—
10:42	4.42	Purging	—	67	7.13	477	62.8°	—
10:44	6.63	Purging	—	61	7.13	471	62.3°	—
	—	Post-Purge		—	—	—	—	
10:50	—	Post-Purge	3.6	—	—	—	—	5.97'
	—	Collect Sample		—	—	—	—	

Recovery Data: Post Purge / Static x 100 = 5.81 / 5.97 = 97 %

Sample Collection: ☒ Disposable Bailer ☐ PVC Bailer ☐ Stainless-Steel Bailer ☐ No Product Odor ☐ Product Odor

Sample Depth: 6.25' [ft btoc]

Sample Handing: Place in iced-storage.

Groundwater Stratigraphy [Screened Interval]:

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Subsurface Environmental Sampling

1180 DELMAS AVE. Tel. (408) 287-2175
SAN JOSE, CA 95125 Fax. (408) 287-2176

Groundwater Monitoring & Sampling Record

Site Name E & C Hegenberger
Date 3.24.00 Milage:
Field Crew Dave Nitzberg Well I.D. MW-4
Task ☒ Well Gauging ☒ Well Sampling ☐ Pump Test

Wellhead Inspection

yes no
☒ ☐ Well locked?
☐ ☒ Well Cap need replacement?

Purge Method ☐ Disposable Bailer ☐ Grundfos ☒ PVC Bailer ☐ 2"-Whaler

Purge Volume Calculations

Total Depth of well 19.63 ft
Depth to water 5.39 ft
Height of Water in well 14.24 ft

14.24 ft (Height of Water in well) x (2-inch casing = 0.16 gal/ft; 4-inch casing = 0.667 gal/ft; 5-inch casing = 1.02 gal/ft; 6-inch casing = 1.47 gal/ft) = 2.28 gal (One Well Volume)

2.28 gal (One Well Volume) x 3 (Number of Target Well Volumes) = 6.84 gal Purge Volume

Decon Log

Pump I.D. N/A
yes no
☐ ☐ Steam-cleaned?
☐ ☐ Alconox rinse?

Bailer I.D. _____
yes no
☐ ☒ Steam-cleaned?
☒ ☐ Alconox rinse?

yes no
☒ ☐ Drum Log
55-gallon drum
Drum I.D. 0001-119

Sample Containers:

☒ 40 ml VOA vials 6
☒ 1-liter amber glass 1
☐ 16-oz plastic bottle —

Field Observation/Notes:

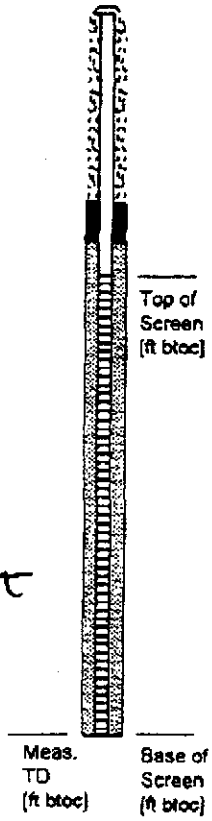
TIME	GALLONS	Purge Status	D.O. (ppm)	O.R.P. (uS)	pH	EH (uS)	TEMP. F	DTW (ft) BTOC
	0 - Initial	Pre-Purge	—	—	—	—	—	
10:55am	0 - Static	Pre-Purge	1.7	—	—	—	—	5.39
10:57am	2.28	Purging	—	144	7.16	686	65.8°	—
10:59am	4.56	Purging	—	161	7.21	670	65.1°	—
11:01am	6.84	Purging	—	158	7.09	672	65.4°	—
	—	Post-Purge	2.1	—	—	—	—	
11:07am	—	Post-Purge		—	—	—	—	5.97
	—	Collect Sample		—	—	—	—	

Recovery Data: Post Purge / Static x 100 = 5.39 / 5.97 = 90 %

Sample Collection: ☒ Disposable Bailer ☐ PVC Bailer ☐ Stainless-Steel Bailer ☐ No Product Odor ☐ Product Odor
Sample Depth: 6.25 feet (ft btoc)

Sample Handing: Place in iced-storage.

Groundwater Stratigraphy [Screened Interval]:



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1180 DELMAS AVE. Tel. (408) 287-2175
SAN JOSE, CA 95125 Fax. (408) 287-2176

Groundwater Monitoring & Sampling Record

Site Name EC Hegenberger
Date 3-29-00 Milage:
Field Crew Dave Nitzberg Well I.D. MW-5

Task ☒ Well Gauging ☒ Well Sampling ☐ Pump Test

Wellhead Inspection

yes no
☒ ☐ Well locked?
☐ ☒ Well Cap need replacement?

Purge Method ☐ Disposable Bailer ☐ Grundfos ☒ PVC Bailer ☐ 2"-Whaler

Purge Volume Calculations

Total Depth of well 19.5 ft
Depth to water 6.02 ft
Height of Water in well 13.68 ft

13.68 ft (Height of Water in well) x (2-inch Casing = 0.16 gal/ft; 4-inch casing = 0.667 gal/ft; 5-inch casing = 1.02 gal/ft; 6-inch casing = 1.47 gal/ft) = 2.19 gal (One Well Volume)

2.19 gal (One Well Volume) x 3 (Number of Target Well Volumes) = 6.57 gal Purge Volume

Decon Log

Pump I.D. N/A
yes no
☐ ☐ Steam-cleaned?
☐ ☐ Alconox rinse?

Bailer I.D. _____
yes no
☐ ☒ Steam-cleaned?
☒ ☐ Alconox rinse?

Drum Log
yes no
☒ ☐ 55-gallon drum
Drum I.D. 0001-119

Sample Containers:

☒ 40 ml VOA vials 6
☒ 1-liter amber glass 1
☐ 16-oz plastic bottle ____

Field Observation/Notes:

TIME	GALLONS	Purge Status	D.O. (ppm)	O.R.P. (uS)	pH	EH (uS)	TEMP. F	DTW (ft) BTOC
	0 - Initial	Pre-Purge	—	—	—	—	—	
10:21am	0 - Static	Pre-Purge	0.9	—	—	—	—	6.02'
10:25am	2.19	Purging	—	227	7.37	446	64.9°	—
10:27am	4.4	Purging	—	202	7.44	439	65.5°	—
10:30am	6.57	Purging	—	211	7.40	419	65.4°	—
	—	Post-Purge	2.4	—	—	—	—	6.47'
10:36am	—	Post-Purge		—	—	—	—	
	—	Collect Sample		—	—	—	—	

Recovery Data: Post Purge / Static x 100 = 6.02 / 6.47 = 93 %

Sample Collection: ☒ Disposable Bailer ☐ PVC Bailer ☐ Stainless-Steel Bailer ☐ No Product Odor ☐ Product Odor
Sample Depth: 7 feet (ft btoc)

Sample Handing: Place in iced-storage.

Groundwater Stratigraphy [Screened Interval]:

Top of Screen (ft btoc)
Meas. TD (ft btoc)
Base of Screen (ft btoc)

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SAN JOSE, CA 95125 Fax. (408) 287-2176

Groundwater Monitoring & Sampling Record

Site Name E²C Hegenberger
Date 3.24.00 Mileage:
Field Crew Dave Nitzberg Well I.D. MW-6
Task ☒ Well Gauging ☒ Well Sampling ☐ Pump Test

Wellhead Inspection

☒ Well locked?
☐ Well Cap need replacement?

Purge Method ☐ Disposable Bailer ☐ Grundfos ☒ PVC Bailer ☐ 2"-Whaler

Purge Volume Calculations

Total Depth of well 18.39 ft
Depth to water 5.49 ft
Height of Water in well 12.9 ft

12.9 ft (Height of Water in well) x (2-inch Casing = 0.16 gal/ft; 4-inch casing = 0.667 gal/ft; 5-inch casing = 1.02 gal/ft; 6-inch casing = 1.47 gal/ft) = 2.1 gal (One Well Volume)

2.1 gal (One Well Volume) x 3 (Number of Target Well Volumes) = 6.2 gal Purge Volume

Decon Log

Pump I.D. N/A
☐ Steam-cleaned?
☐ Alconox rinse?

Bailer I.D. _____
☐ Steam-cleaned?
☒ Alconox rinse?

Drum Log
☒ 55-gallon drum
Drum I.D. 0001-119

Sample Containers:

☒ 40 ml VOA vials 6
☒ 1-liter amber glass 1
☐ 16-oz plastic bottle ____

Field Observation/Notes:

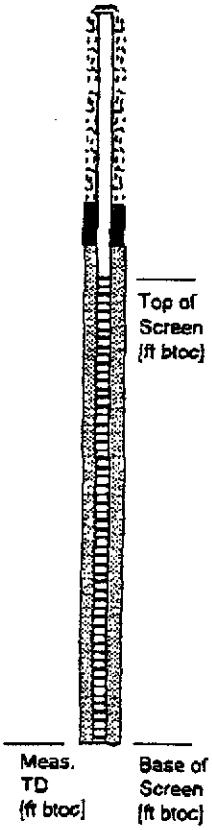
TIME	GALLONS	Purge Status	D.O. (ppm)	O.R.P. (uS)	pH	EH (uS)	TEMP. F	DTW (ft) BTOC
	0 - Initial	Pre-Purge	—	—	—	—	—	
10:02a	0 - Static	Pre-Purge	1.2	—	—	—	—	5.49
10:09a	2.1	Purging	—	-11	7.21	1104	65.9°	—
10:11a	4.35	Purging	—	-16	7.17	1091	66.2°	—
10:13a	6.2	Purging	—	-48	7.13	1098	65.7°	—
	—	Post-Purge		—	—	—	—	
10:15a	—	Post-Purge	3.8	—	—	—	—	5.77
	—	Collect Sample		—	—	—	—	

Recovery Data: Post Purge / Static x 100 = 5.49 / 5.77 = 95 %

Sample Collection: ☒ Disposable Bailer ☐ PVC Bailer ☐ Stainless-Steel Bailer ☐ No Product Odor ☐ Product Odor
Sample Depth: 6 feet [ft btoc]

Sample Handing: Place in iced-storage.

Groundwater Stratigraphy [Screened Interval]:



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APPENDIX B

QMR LABORATORY REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION

Entech Analytical Labs, Inc.

CA ELAP# 2346

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

April 06, 2000

Bill Lawson
E2C, Inc.
382 Martin Avenue
Santa Clara, CA 95050

Order: 19809
Project Name: McMorgan
Project Number: 1124SC01
Project Notes:

Date Collected: 3/24/00
Date Received: 3/30/00
P.O. Number:

On March 30, 2000, samples were received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	BTEX	EPA 8020
	TPH as Diesel	EPA 8015 MOD. (Extractable)
	TPH as Gasoline	EPA 8015 MOD. (Purgeable)

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

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

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 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: Bill Lawson

Date: 4/6/00
Date Received: 3/30/00
Project Name: McMorgan
Project Number: 1124SC01
P.O. Number:
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 19809 **Lab Sample ID:** 19809-001 **Client Sample ID:** W-MW-2

Sample Time: **Sample Date:** 3/29/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	110		5	0.5	2.5	µg/L		4/1/00	WGC4000331	EPA 8020
Toluene	4.8		5	0.5	2.5	µg/L		4/1/00	WGC4000331	EPA 8020
Ethyl Benzene	9.5		5	0.5	2.5	µg/L		4/1/00	WGC4000331	EPA 8020
Xylenes, Total	12		5	0.5	2.5	µg/L		4/1/00	WGC4000331	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	102	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	1900		5	50	250	µg/L		4/1/00	WGC4000331	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	107	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 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: Bill Lawson

Date: 4/6/00
Date Received: 3/30/00
Project Name: McMorgan
Project Number: 1124SC01
P.O. Number:
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 19809 **Lab Sample ID:** 19809-002 **Client Sample ID:** W-MW-3

Sample Time: **Sample Date:** 3/24/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	4100		20	0.5	10	µg/L		3/31/00	WGC4000331	EPA 8020
Toluene	71		20	0.5	10	µg/L		3/31/00	WGC4000331	EPA 8020
Ethyl Benzene	190		20	0.5	10	µg/L		3/31/00	WGC4000331	EPA 8020
Xylenes, Total	75		20	0.5	10	µg/L		3/31/00	WGC4000331	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	86	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	8400		20	50	1000	µg/L		3/31/00	WGC4000331	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	82	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

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E2C, Inc.
382 Martin Avenue
Santa Clara, CA 95050
Attn: Bill Lawson

Date: 4/6/00
Date Received: 3/30/00
Project Name: McMorgan
Project Number: 1124SC01
P.O. Number:
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 19809 **Lab Sample ID:** 19809-003 **Client Sample ID:** W-MW-4

Sample Time: **Sample Date:** 3/24/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	240		1	0.5	0.5	µg/L		3/31/00	WGC4000331	EPA 8020
Toluene	3.3		1	0.5	0.5	µg/L		3/31/00	WGC4000331	EPA 8020
Ethyl Benzene	0.98		1	0.5	0.5	µg/L		3/31/00	WGC4000331	EPA 8020
Xylenes, Total	1.5		1	0.5	0.5	µg/L		3/31/00	WGC4000331	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	78	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	430		1	50	50	µg/L		3/31/00	WGC4000331	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	71	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 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: Bill Lawson

Date: 4/6/00
Date Received: 3/30/00
Project Name: McMorgan
Project Number: 1124SC01
P.O. Number:
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 19809 **Lab Sample ID:** 19809-004 **Client Sample ID:** W-MW-5

Sample Time: **Sample Date:** 3/24/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	560		5	0.5	2.5	µg/L		3/31/00	WGC4000331	EPA 8020
Toluene	57		5	0.5	2.5	µg/L		3/31/00	WGC4000331	EPA 8020
Ethyl Benzene	18		5	0.5	2.5	µg/L		3/31/00	WGC4000331	EPA 8020
Xylenes, Total	87		5	0.5	2.5	µg/L		3/31/00	WGC4000331	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	74	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	2500		5	50	250	µg/L		3/31/00	WGC4000331	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	74	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

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E2C, Inc.
382 Martin Avenue
Santa Clara, CA 95050
Attn: Bill Lawson

Date: 4/6/00
Date Received: 3/30/00
Project Name: McMorgan
Project Number: 1124SC01
P.O. Number:
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 19809 **Lab Sample ID:** 19809-005 **Client Sample ID:** W-MW-6

Sample Time: **Sample Date:** 3/24/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	430		5	0.5	2.5	µg/L		3/31/00	WGC4000331	EPA 8020
Toluene	16		5	0.5	2.5	µg/L		3/31/00	WGC4000331	EPA 8020
Ethyl Benzene	340		5	0.5	2.5	µg/L		3/31/00	WGC4000331	EPA 8020
Xylenes, Total	73		5	0.5	2.5	µg/L		3/31/00	WGC4000331	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	67	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	2400		5	50	250	µg/L		3/31/00	WGC4000331	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	66	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 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: Bill Lawson

Date: 4/6/00
Date Received: 3/30/00
Project Name: McMorgan
Project Number: 1124SC01
P.O. Number:
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 19809 **Lab Sample ID:** 19809-001 **Client Sample ID:** W-MW-2
Sample Time: **Sample Date:** 3/29/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	31000		10	50	500	µg/L	3/31/00	4/3/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	111	65 - 135

Order ID: 19809 **Lab Sample ID:** 19809-002 **Client Sample ID:** W-MW-3
Sample Time: **Sample Date:** 3/24/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	1000	x	1	50	50	µg/L	3/31/00	4/3/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	110	65 - 135

Order ID: 19809 **Lab Sample ID:** 19809-003 **Client Sample ID:** W-MW-4
Sample Time: **Sample Date:** 3/24/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	77	x	1	50	50	µg/L	3/31/00	4/3/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	108	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle E. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 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: Bill Lawson

Date: 4/6/00
Date Received: 3/30/00
Project Name: McMorgan
Project Number: 1124SC01
P.O. Number:
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 19809 **Lab Sample ID:** 19809-004 **Client Sample ID:** W-MW-5

Sample Time: **Sample Date:** 3/24/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	460	x	1	50	50	µg/L	3/31/00	4/3/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	110	65 - 135

Order ID: 19809 **Lab Sample ID:** 19809-005 **Client Sample ID:** W-MW-6

Sample Time: **Sample Date:** 3/24/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	470	x	1	50	50	µg/L	3/31/00	4/3/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	105	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

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

STANDARD LAB QUALIFIERS (FLAGS)

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 (Flag)	Description
U	Compound was analyzed for but not detected
J	Estimated value 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.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: WGC4000331
Matrix: Liquid
Units: µg/Liter

Date Analyzed: 03/31/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/Liter	SA µg/Liter	SR µg/Liter	SP µg/Liter	**SP % R**	SPD µg/Liter	**SPD %R**	% RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	4.7	ND	4.8	**102**	4.5	**95**	7.3	25	70-130
Toluene	8020	<0.50	29	ND	28	**96**	29	**100**	3.8	25	70-130
Ethyl Benzene	8020	<0.50	5.5	ND	5.3	**97**	5.5	**101**	3.5	25	70-130
Xylenes	8020	<0.50	32	ND	31	**98**	32	**101**	2.3	25	70-130
Gasoline	8015	<50.0	467	ND	457	**98**	465	**99**	1.7	25	70-130
aaa-TFT(S.S.)-FID	8020			114%	106%		114%				65-135
aaa-TFT(S.S.)-PID	8015			105%	98%		102%				65-135

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 #: DW000319
Matrix: Liquid
Units: µg/L

Date analyzed: 03/30/00
Date extracted: 03/29/00
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	1000	ND	1077	**108**	1081	**108**	0.4	25	58-121
Hexocosane(S.S.)				98%	112%		112%				65-135

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

DUGAN ASSOCIATES
SAMPLING
SERVICES
Subsurface Environmental Sampling

1180 DELMAS AVE.
SAN JOSE, CA 95125

Tel. (408) 287-2175
Fax. (408) 287-2176

Chain of Custody Record

UST FUND PROJECT SITE ? yes ☒ no ☐

SUPERVISING SAMPLING PROFESSIONAL: BILL DUGAN — PROFESSIONAL REGISTRATION NO.: R.G. #6253

CERTIFIED ANALYTICAL LABORATORY: Entech — CALIFORNIA STATE-CERTIFIED LABORATORY NO.: — D.O.H.

PROJECT NAME: E2C, Inc. [Project #1124SC01]

SITE ADDRESS: 444 Hegenberger Road, Oakland, CA

TURNAROUND TIME: STANDARD

SAMPLED BY (PRINT): Dave Nitzberg

DATE (S): 03/24/00 & 03/29/00

SAMPLE I.D.#: 19809		SAMPLED DATE	SAMPLED TIME	NUMBER OF CONTAINERS	SAMPLE MATRIX (SOIL OR WATER)	TPHg (LUFT)	TPHg / BTEX	TPHd (LUFT)	EPA 8260 for MTBE/TAME/ETBE DIPE/TBA	TOTAL LEAD	5 METALS (Cd, Cr, Pb, Ni, Zn)	EPA METHOD 8270	EPA METHOD 8240	EPA METHOD 8010	T.O.G 5520 E&F	ACIDIFIED
001	W-MW-2	03/29/00		5	Water		X	X								Yes
002	W-MW-3	03/24/00		5	Water		X	X								Yes
003	W-MW-4	03/24/00		5	Water		X	X								Yes
004	W-MW-5	03/24/00		5	Water		X	X								Yes
005	W-MW-6	03/24/00		5	Water		X	X								Yes

00 MAR 30 11:39

COMMENTS / SPECIAL INSTRUCTIONS TO LABORATORY:

Invoice E2C, Inc.

COMMENTS / SPECIAL NOTATIONS BY LABORATORY:

CONDITION OF EVIDENCE TAPE (IF APPLICABLE):

RELINQUESTED BY (SIGNATURE): Dave Nitzberg — DUGAN ASSOCIATES (Dave Nitzberg)	RECEIVED BY (SIGNATURE): J. Mahan — AFFILIATION:	DATE: 3/30/00	TIME: 11:35
RELINQUESTED BY (SIGNATURE): J. Mahan — AFFILIATION:	RECEIVED BY (SIGNATURE): Leo Rabinzon 3/30/00 1225 — AFFILIATION:	DATE: 3/30/00	TIME: 11:39
RECEIVED BY (SIGNATURE): — AFFILIATION:	RECEIVED BY (SIGNATURE): — AFFILIATION:	DATE:	TIME:

Environmental Sampling Since 1986

APPENDIX C

WELL MW-6
PERMIT AND BORING LOG

Any soil samples from MW-6 ?

ENVIRONMENTAL / ENGINEERING CONSULTANTS
382 MARTIN AVENUE
SANTA CLARA, CA 95050-3112
TEL: 408.327.5700 FAX: 408.327.5707

BORING LOG

BORING / WELL NUMBER: MW-6

SHEET OF

PROJECT	PROJECT NUMBER	START DATE	COMPLETION DATE
McMorgan	11245C01	3/20/00	3/20/00

PROJECT LOCATION	BORING DEPTH	STATIC GROUNDWATER DEPTH
444 Hegenberger Rd. OAKLAND, CA	20'	8'

DRILLING CONTRACTOR	DRILLER	WELL CONSTRUCTION
WEEKS DRILLING		

DRILLING EQUIPMENT	BORING DIAMETER	TYPE AND DIAMETER OF WELL CASING	SANITARY SEAL MATERIAL AND INTERVAL
	8"	2" Sch 40 PVC	GROUT

SAMPLING METHOD	BACKFILL MATERIAL	SLOT SIZE AND INTERVAL	FILTER MATERIAL AND INTERVAL
CAL MOD SPLIT-SPOON		0.02"	Lonestar #2/12

LOGGED BY	SUPERVISED BY / RG/CEG/CHG NO.	PERFORATED INTERVAL	WELL DEPTH
W. LAWSON	D. J. Hidalgo	10'-20'	20'

DESCRIPTION	DEPTH (FEET)	USCS SOIL TYPE	BLOW COUNTS	SAMPLE INTERVAL	SAMPLE I.D.	PID/FID READINGS @VA (ppm)	WELL	REMARK
0-1' BASEROCK 1'-2' GRAVELLY CLAY (GC/CL): moist; brn; low plastic fines; probably f-U; some non-plastic fines (silt) 2'-4' GRAVELLY CLAY (GC/CL): moist; gray; fuel odor 4'-5' GRAVEL/COBBLES (GP): heavy odor 5'-8' CLAY (CH): dk. gray; damp; heavy odor 8' odor change to light gray; moist; low to medium plasticity 11' - Heavy odor (fuel?) 16'-20'(?) GRAVELLY SAND/SANDY GRAVEL (SP/GP): Wet.	5 10 15 20	GP GC/CL GC/CL GP CH CL SP/GP	2 4 6		MW-6-11			WELL CONSTRUCTION 0-12" Christy Box TOC - locking rubber plug 0-10' 2" blank Sch 40 PVC 10'-20' 0.02" slotted Sch 40 PVC bot - slip cap SAND & SEAL 0-1 Quikcrete 1-6 Grout 6-8 Bentonite Chips 8-20 Lonestar #2/12 11.5'-20' straight drill ▽ Initial Water
20'-Terminate Boring	25							

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE ~~(510) 670-5480 MARLON MADRILEJOS/CINDY HITCHINGHAM~~ (510) 670-5554
FAX ~~(510) 670-5262~~ (510) 782-1939 fax

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 444 Hegenberger Rd
Oakland, CA

CLIENT
Name Mc Morgan & Company
Address One Bush St. Ste 800 Phone 415-788-9300
City San Francisco Zip 94104

APPLICANT
Name E2C, Inc. Fax 408-327-5707
Address 382 Martin Ave Phone 408-327-5700
City Santa Clara Zip 95050

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	( )	General	( )
Water Supply	( )	Contamination	( )
Monitoring	X	Well Destruction	( )

PROPOSED WATER SUPPLY WELL USE

New Domestic	( )	Replacement Domestic	( )
Municipal	( )	Irrigation	( )
Industrial	( )	Other	( )

DRILLING METHOD:

Mud Rotary	( )	Air Rotary	( )	Auger	X
Cable	( )	Other	( )		

DRILLER'S LICENSE NO. Weeks C-17768l

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 10 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 3-20-00
ESTIMATED COMPLETION DATE Same

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Dan Hidalgo DATE 3-14-00
E2C, Inc.

FOR OFFICE USE

PERMIT NUMBER W00-111
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with cement grout, cement/ [redacted] or [redacted] bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED Frank L Cadd DATE 3-15-00

APPENDIX D

SOIL SAMPLE ANALYTICAL DATA SHEETS

Entech Analytical Labs, Inc.

CA ELAP# 2346

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

April 03, 2000

Bill Lawson
E2C, Inc.
382 Martin Avenue
Santa Clara, CA 95050

Order:	19659	**Date Collected:**	3/20/00
Project Name:	McMorgan	**Date Received:**	3/20/00
Project Number:	1124SC01	**P.O. Number:**	
Project Notes:			

On March 20, 2000, sample was received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Solid	EPA 8270-ATL	EPA 8270

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

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

Sincerely,

Michelle L. Anderson
Lab Director

April 3, 2000 ELAP No.: 1838

Entech Analytical Labs, Inc.
525 Del Rey Avenue, Suite E,
Sunnyvale, CA 94086

ATTN: Michelle Anderson

Client's Project: E2C, Inc.
Lab No.: 42840-001

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (562) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Cheryl De Los Reyes
Technical Operations Manager
CDR/jh

Enclosures

This cover letter is an integral part of this analytical report.

Client: Entech Analytical Labs, Inc.
Attn: Michelle Anderson

Client's Project: E2C, Inc.
Date Received: 03/29/00
Matrix: Solid
Units: µg/kg
Extraction Method: 3550B

EPA Method 8270C

Lab No.:	Method Blank	42840-001										
Client Sample I.D.:	--	19659-001 MW-6-11										
Date Sampled:	--	03/20/00										
QC Batch #:	S008270S098	S008270S098										
Date Extracted:	03/30/00	03/30/00										
Date Analyzed:	03/30/00	03/30/00										
Analyst Initials:	MH	MH										
Dilution Factor:	1	1										

ANALYTE	MDL	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results
Phenol	330	330	ND	330	ND								
bis (2-Chloroethyl)ether	330	330	ND	330	ND								
2-Chlorophenol	330	330	ND	330	ND								
1,3-Dichlorobenzene	330	330	ND	330	ND								
1,4-Dichlorobenzene	330	330	ND	330	ND								
Benzyl Alcohol	660	660	ND	660	ND								
1,2-Dichlorobenzene	330	330	ND	330	ND								
2-Methylphenol	330	330	ND	330	ND								
bis(2-chloroisopropyl)ether	330	330	ND	330	ND								
n-Nitroso-di-n-propylamine	330	330	ND	330	ND								
4-Methylphenol	330	330	ND	330	ND								
Hexachloroethane	330	330	ND	330	ND								
Nitrobenzene	330	330	ND	330	ND								
Isophorone	330	330	ND	330	ND								
2-Nitrophenol	330	330	ND	330	ND								
2,4-Dimethylphenol	330	330	ND	330	ND								
bis(2-Chloroethoxy)methane	330	330	ND	330	ND								
2,4-Dichlorophenol	1700	1700	ND	1700	ND								
Benzoic Acid	1700	1700	ND	1700	ND								
1,2,4-Trichlorobenzene	330	330	ND	330	ND								
Naphthalene	330	330	ND	330	ND								
4-Chloroaniline	660	660	ND	660	ND								
Hexachlorobutadiene	330	330	ND	330	ND								
4-Chloro-3-methylphenol	660	660	ND	660	ND								
2-Methylnaphthalene	330	330	ND	330	ND								
Hexachlorocyclopentadiene	660	660	ND	660	ND								
2,4,6-Trichlorophenol	330	330	ND	330	ND								
2,4,5-Trichlorophenol	330	330	ND	330	ND								
2-Chloronaphthalene	330	330	ND	330	ND								
2-Nitroaniline	1700	1700	ND	1700	ND								
Dimethylphthalate	330	330	ND	330	ND								
Acenaphthylene	330	330	ND	330	ND								
2,6-Dinitrotoluene	330	330	ND	330	ND								
3-Nitroaniline	1700	1700	ND	1700	ND								

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

The cover letter is an integral part of this analytical report.

Client: Entech Analytical Labs, Inc.
Attn: Michelle Anderson

Client's Project: E2C, Inc.
Date Received: 03/29/00
Matrix: Solid
Units: µg/kg
Extraction Method: 3550B

EPA Method 8270C

Lab No.:		Method Blank		42840-001									
Client Sample I.D.:		--		19659-001 MW-6-11									
ANALYTE	MDL	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results
Acenaphthene	330	330	ND	330	ND								
2,4-Dinitrophenol	1700	1700	ND	1700	ND								
Dibenzofuran	330	330	ND	330	ND								
4-Nitrophenol	1700	1700	ND	1700	ND								
2,4-Dinitrotoluene	330	330	ND	330	ND								
Fluorene	330	330	ND	330	ND								
Diethylphthalate	330	330	ND	330	ND								
4-Chlorophenyl-phenyl ether	330	330	ND	330	ND								
4-Nitroaniline	1700	1700	ND	1700	ND								
4,6-Dinitro-2-methylphenol	1700	1700	ND	1700	ND								
n-Nitrosodiphenylamine	330	330	ND	330	ND								
4-Bromophenyl-phenyl ether	330	330	ND	330	ND								
Hexachlorobenzene	330	330	ND	330	ND								
Pentachlorophenol	1700	1700	ND	1700	ND								
Phenanthrene	330	330	ND	330	ND								
Anthracene	330	330	ND	330	ND								
Di-n-butylphthalate	330	330	ND	330	ND								
Fluoranthene	330	330	ND	330	ND								
Pyrene	330	330	ND	330	ND								
Butylbenzylphthalate	330	330	ND	330	ND								
Benzo[a]anthracene	330	330	ND	330	ND								
3,3'-Dichlorobenzidine	660	660	ND	660	ND								
Chrysene	330	330	ND	330	ND								
bis(2-Ethylhexyl)phthalate	330	330	ND	330	ND								
Di-n-octylphthalate	330	330	ND	330	ND								
Benzo[b]fluoranthene	330	330	ND	330	ND								
Benzo[k]fluoranthene	330	330	ND	330	ND								
Benzo[a]pyrene	330	330	ND	330	ND								
Indeno[1,2,3-cd]pyrene	330	330	ND	330	ND								
Dibenz[a,h,]anthracene	330	330	ND	330	ND								
Benzo[g,h,i]perylene	330	330	ND	330	ND								

Surrogate Recovery

Surrogate Recovery	%Rec.	Limits	%Rec.	Limits
2-Fluorophenol	61	19-114	60	19-114
Phenol-d6	67	18-116	67	18-116
2-Chlorophenol-d5	69	19-114	68	19-114
1,2-Dichlorobenzene-d4	62	17-97	60	17-97
Nitrobenzene-d5	62	20-100	61	20-100
2-Fluorobiphenyl	68	21-114	66	21-114
2,4,6-Tribromophenol	63	20-130	60	20-130
Terphenyl-d14	93	17-130	90	17-130

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By: C. Persaud
Compton Persaud
Department Supervisor

Date: 04/03/00

The cover letter is an integral part of this analytical report.

Client: Entech Analytical Labs, Inc.
Attn: Michelle Anderson

Client's Project: E2C, Inc.
Date Received: 03/29/00
Matrix: Soil
Units: µg/kg
Extraction Method: 3550B

EPA Method 8270C

Lab No.:	LCS											
Client Sample I.D.:	--											
Date Sampled:	--											
QC Batch #:	S008270S098											
Date Extracted:	03/30/00											
Date Analyzed:	03/30/00											
Analyst Initials:	MH											
Dilution Factor:	1											

ANALYTE	MDL	Limits	%Rec	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results
Phenol	330	11-182	69										
bis (2-Chloroethyl)ether	330	11-182	57										
2-Chlorophenol	330	11-182	66										
1,3-Dichlorobenzene	330	11-182	60										
1,4-Dichlorobenzene	330	11-182	60										
Benzyl Alcohol	660	11-182	59										
1,2-Dichlorobenzene	330	11-182	66										
2-Methylphenol	330	11-182	72										
bis(2-chloroisopropyl)ether	330	11-182	54										
n-Nitroso-di-n-propylamine	330	11-182	81										
4-Methylphenol	330	11-182	69										
Hexachloroethane	330	11-182	60										
Nitrobenzene	330	11-182	66										
Isophorone	330	11-182	72										
2-Nitrophenol	330	11-182	63										
2,4-Dimethylphenol	330	11-182	69										
bis(2-Chloroethoxy)methane	330	11-182	69										
2,4-Dichlorophenol	1700	11-182	63										
Benzoic Acid	1700	11-182	81										
1,2,4-Trichlorobenzene	330	11-182	66										
Naphthalene	330	11-182	66										
4-Chloroaniline	660	11-182	60										
Hexachlorobutadiene	330	11-182	69										
4-Chloro-3-methylphenol	660	11-182	63										
2-Methylnaphthalene	330	11-182	63										
Hexachlorocyclopentadiene	660	11-182	27										
2,4,6-Trichlorophenol	330	11-182	66										
2,4,5-Trichlorophenol	330	11-182	63										
2-Chloronaphthalene	330	11-182	72										
2-Nitroaniline	1700	11-182	72										
Dimethylphthalate	330	11-182	72										
Acenaphthylene	330	11-182	81										
2,6-Dinitrotoluene	330	11-182	69										
3-Nitroaniline	1700	11-182	72										

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

The cover letter is an integral part of this analytical report.

Client: Entech Analytical Labs, Inc.
Attn: Michelle Anderson

Client's Project: E2C, Inc.
Date Received: 03/29/00
Matrix: Soil
Units: µg/kg
Extraction Method: 3550B

EPA Method 8270C

Lab No.:		LCS												
Client Sample I.D.:		--												
ANALYTE	MDL	Limits	%Rec	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results
Acenaphthene	330	11-182	75										
2,4-Dinitrophenol	1700	11-182	49										
Dibenzofuran	330	11-182	75										
4-Nitrophenol	1700	11-182	93										
2,4-Dinitrotoluene	330	11-182	75										
Fluorene	330	11-182	84										
Diethylphthalate	330	11-182	78										
4-Chlorophenyl-phenyl ether	330	11-182	84										
4-Nitroaniline	1700	11-182	105										
4,6-Dinitro-2-methylphenol	1700	11-182	60										
n-Nitrosodiphenylamine	330	11-182	84										
4-Bromophenyl-phenyl ether	330	11-182	66										
Hexachlorobenzene	330	11-182	78										
Pentachlorophenol	1700	11-182	75										
Phenanthrene	330	11-182	84										
Anthracene	330	11-182	87										
Di-n-butylphthalate	330	11-182	90										
Fluoranthene	330	11-182	93										
Pyrene	330	11-182	93										
Butylbenzylphthalate	330	11-182	78										
Benzo[a]anthracene	330	11-182	87										
3,3'-Dichlorobenzidine	660	11-182	90										
Chrysene	330	11-182	93										
bis(2-Ethylhexyl)phthalate	330	11-182	90										
Di-n-octylphthalate	330	11-182	87										
Benzo[b]fluoranthene	330	11-182	87										
Benzo[k]fluoranthene	330	11-182	96										
Benzo[a]pyrene	330	11-182	54										
Indeno[1,2,3-cd]pyrene	330	11-182	81										
Dibenz[a,h,]anthracene	330	11-182	90										
Benzo[g,h,i]perylene	330	11-182	74										

Surrogate Recovery

Surrogate Recovery	%Rec.	Limits
2-Fluorophenol	54	19-114
Phenol-d6	62	18-116
2-Chlorophenol-d5	62	19-114
1,2-Dichlorobenzene-d4	56	17-97
Nitrobenzene-d5	56	20-100
2-Fluorobiphenyl	64	21-114
2,4,6-Tribromophenol	65	20-130
Terphenyl-d14	73	17-130

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By: C. Persaud Date: 04/03/00

Compton Persaud
Department Supervisor

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Spike Recovery and RPD Summary Report - SOIL (µg/Kg)

Method : D:\HPCHEM\1\METHODS\S000307.M (RTE Integrator)
Title : EPA 8270C Advanced Technology Laboratory
Last Update : Mon Mar 27 17:20:39 2000
Response via : Initial Calibration

Non-Spiked Sample: S0330012.D

	Spike Sample	Spike Duplicate Sample
File ID :	S0330013.D	S0330014.D
Sample :	MS,42844-17, S008270S098,soil	MSD,42844-17, S008270S098,soil
Acq Time:	30 Mar 2000 6:27 pm	30 Mar 2000 7:04 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Phenol	0.0	200	126	127	63	63	1	19	37- 92
2-Chlorophenol	0.0	200	155	157	77	79	1	20	33- 94
1,4-Dichlorobenzene	0.0	100	59	60	59	60	1	22	43- 91
N-Nitroso-di-n-propy	0.0	100	75	75	75	75	0	24	25-112
1,2,4-Trichlorobenze	0.0	100	60	60	60	60	0	19	47-104
4-Chloro-3-methylphe	0.0	200	137	139	69	69	1	19	33-106
Acenaphthene	0.0	100	68	68	68	68	0	19	39-103
4-Nitrophenol	0.0	200	162	169	81	85	5	21	22-117
2,4-Dinitrotoluene	0.0	100	60	61	60	61	2	21	46-106
Pentachlorophenol	0.0	200	179	182	90	91	1	24	11-120
Pyrene	0.0	100	78	78	78	78	1	17	24-124

QCBATCH#S008270S098

Reviewed / Approved by: C. Persaud Date: 04/03/00
Compton Persaud
Department Supervisor

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:	PO Number:
ATL	E2C, Inc.	3/28/00	4/3/00	19659

Sample Number:	Customer Sample Number:	Matrix:	Test:	Method:	Collect Date:	Collect Time:	Bottle Type:	Preservative:
19659-001	MW-6-11	Solid	EPA 8270-ATL	EPA 8270	3/20/00	11:15 AM	4OZ JAR	

Relinquished By:	Received By:	Date:	Time:
Marian Gruber	Golden State	3/28/00	1800
Relinquished By:	Received By:	Date:	Time:
	Diane Dalvan	3-29-00	0900
Relinquished By:	Received By:	Date:	Time:

Notes:

Entech Analytical Labs, Inc.

CA ELAP# 2346

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

March 28, 2000

Bill Lawson
E2C, Inc.
382 Martin Avenue
Santa Clara, CA 95050

Order:	19659	**Date Collected:**	3/20/00
Project Name:	McMorgan	**Date Received:**	3/20/00
Project Number:	1124SC01	**P.O. Number:**	
Project Notes:			

On March 20, 2000, sample was received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Solid	EPA 8010	EPA 8010

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

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

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 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: Bill Lawson

Date: 3/28/00
Date Received: 3/20/00
Project Name: McMorgan
Project Number: 1124SC01
P.O. Number:
Sampled By: Bill Lawson

Certified Analytical Report

Order ID: 19659 **Lab Sample ID:** 19659-001 **Client Sample ID:** MW-6-11

Sample Time: 11:15 AM **Sample Date:** 3/20/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
1,1,1-Trichloroethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
1,1,2,2-Tetrachloroethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
1,1,2-Trichloroethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
1,1-Dichloroethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
1,1-Dichloroethene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
1,2-Dichlorobenzene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
1,2-Dichloroethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
1,2-Dichloropropane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
1,3-Dichlorobenzene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
1,4-Dichlorobenzene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Bromodichloromethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Bromoform	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Bromomethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Carbon Tetrachloride	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Chlorobenzene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Chloroethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Chloroform	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Chloromethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
cis-1,2-Dichloroethene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
cis-1,3-Dichloropropene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Dibromochloromethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Dichlorodifluoromethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Methylene Chloride	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Tetrachloroethene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
trans-1,2-Dichloroethene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
trans-1,3-Dichloropropene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Trichloroethene	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Trichlorofluoromethane	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010
Vinyl Chloride	ND		1	5	5	µg/Kg	3/28/00	SVOC1000327	EPA 8010

Surrogate	Surrogate Recovery	Control Limits (%)
Bromochloromethane	120	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

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

March 27, 2000

Bill Lawson
E2C, Inc.
382 Martin Avenue
Santa Clara, CA 95050

Order: 19659
Project Name: McMorgan
Project Number: 1124SC01
Project Notes:

Date Collected: 3/20/00
Date Received: 3/20/00
P.O. Number:

On March 20, 2000, sample was received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Solid	BTEX	EPA 8020
	Cadmium	EPA 6010B
	Chromium	EPA 6010B
	Lead	EPA 6010B
	Nickel	EPA 6010B
	TPH as Diesel	EPA 8015 MOD. (Extractable)
	TPH as Gasoline	EPA 8015 MOD. (Purgeable)
	TPH as Motor Oil	EPA 8015 MOD. (Extractable)
	Zinc	EPA 6010B

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

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

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 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: Bill Lawson

Date: 3/27/00
Date Received: 3/20/00
Project Name: McMorgan
Project Number: 1124SC01
P.O. Number:
Sampled By: Bill Lawson

Certified Analytical Report

Order ID: 19659 **Lab Sample ID:** 19659-001 **Client Sample ID:** MW-6-M

Sample Time: 11:15 AM **Sample Date:** 3/20/00 **Matrix:** Solid

Parameter	Result	DF	PQL	DLR	Units	PrepDate	Analysis Date	QC Batch ID	Method
Cadmium	ND	5	1	5	mg/Kg	3/22/00	3/23/00	SM000314	EPA 6010B
Chromium	54	5	1	5	mg/Kg	3/22/00	3/23/00	SM000314	EPA 6010B
Lead	13	5	1	5	mg/Kg	3/22/00	3/23/00	SM000314	EPA 6010B
Nickel	63	5	1	5	mg/Kg	3/22/00	3/23/00	SM000314	EPA 6010B
Zinc	61	5	1	5	mg/Kg	3/22/00	3/23/00	SM000314	EPA 6010B

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 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: Bill Lawson

Date: 3/27/00
Date Received: 3/20/00
Project Name: McMorgan
Project Number: 1124SC01
P.O. Number:
Sampled By: Bill Lawson

Certified Analytical Report

Order ID: 19659 **Lab Sample ID:** 19659-001 **Client Sample ID:** MW-6-11

Sample Time: 11:15 AM **Sample Date:** 3/20/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.005	0.005	mg/Kg		3/22/00	SGC4000322	EPA 8020
Toluene	ND		1	0.005	0.005	mg/Kg		3/22/00	SGC4000322	EPA 8020
Ethyl Benzene	ND		1	0.005	0.005	mg/Kg		3/22/00	SGC4000322	EPA 8020
Xylenes, Total	ND		1	0.005	0.005	mg/Kg		3/22/00	SGC4000322	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	125	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	1	1	mg/Kg	3/23/00	3/24/00	DS000311	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	77	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	1	1	mg/Kg		3/22/00	SGC4000322	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	131	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Motor Oil	ND		1	13	13	mg/Kg	3/23/00	3/24/00	DS000311	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	77	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography - Volatile Organics
Laboratory Control Spikes

QC Batch #: VOA1S000327
Matrix: Solid
Units: µg/kg

Date Analyzed: 03/27/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	SA µg/kg	SR µg/kg	SP µg/kg	**SP % R**	SPD µg/kg	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	40	ND	30	**74**	30	**76**	2.7	25	72-124
Chlorobenzene	8010	40	ND	29	**73**	31	**78**	6.6	25	69-140
1,1-Dichloroethane	8010	40	ND	29	**74**	30	**74**	1.3	25	74-112
Toluene	8020	40	ND	34	**85**	36	**90**	5.5	25	65-123
Trichloroethene	8010	40	ND	26	**65**	27	**67**	2.7	25	65-135
Bromochloromethane	8010		123%	88%		88%				65-135
Fluorobenzene	8020		100%	99%		99%				65-135

Definition of Terms:

na: Not Analyzed in QC batch
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

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: ICP
Laboratory Control Spikes

QC Batch #: WM000314
Matrix: Liquid
Units: mg/L

Date Analyzed: 03/22/00
Date Digested: 03/21/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB mg/L	SA mg/L	SR mg/L	SP mg/L	**SP %R**	SPD mg/L	**SPD % R**	RPD	QC LIMITS %R	QC LIMITS RPD
Aluminum	200.7	<0.050	5.0	ND	4.862	**97**	4.93	**99**	1.4	75- 125	25.0
Antimony	200.7	<0.005	0.50	ND	0.52	**104**	0.54	**108**	3.6	75- 125	25.0
Arsenic	200.7	<0.005	0.50	ND	0.48	**96**	0.53	**105**	9.0	75- 125	25.0
Barium	200.7	<0.005	0.50	ND	0.54	**108**	0.55	**111**	2.4	75- 125	25.0
Beryllium	200.7	<0.005	0.50	ND	0.58	**116**	0.59	**119**	2.4	75- 125	25.0
Cadmium	200.7	<0.005	0.50	ND	0.52	**105**	0.54	**108**	3.0	75- 125	25.0
Calcium	200.7	<0.050	10.0	ND	11.52	**115**	11.39	**114**	1.1	75- 125	25.0
Chromium	200.7	<0.005	0.50	ND	0.54	**107**	0.53	**107**	0.2	75- 125	25.0
Cobalt	200.7	<0.005	0.50	ND	0.55	**109**	0.56	**111**	2.2	75- 125	25.0
Copper	200.7	<0.005	0.50	ND	0.49	**97**	0.50	**100**	2.4	75- 125	25.0
Iron	200.7	<0.050	5.0	ND	6.16	**123**	6.25	**125**	1.5	75- 125	25.0
Lead	200.7	<0.005	0.50	ND	0.46	**91**	0.49	**98**	7.0	75- 125	25.0
Magnesium	200.7	<0.050	5.0	ND	5.05	**101**	5.22	**104**	3.3	75- 125	25.0
Manganese	200.7	<0.005	0.50	ND	0.56	**112**	0.58	**116**	3.3	75- 125	25.0
Molybdenum	200.7	<0.005	0.50	ND	0.56	**112**	0.57	**114**	2.3	75- 125	25.0
Nickel	200.7	<0.005	0.50	ND	0.53	**107**	0.56	**112**	4.9	75- 125	25.0
Potassium	200.7	<0.050	10.0	ND	11.44	**114**	12.32	**123**	7.4	60- 140	25.0
Selenium	200.7	<0.005	0.50	ND	0.52	**104**	0.51	**101**	2.1	75- 125	25.0
Silver	200.7	<0.005	0.50	ND	0.50	**99**	0.56	**112**	12.3	75- 125	25.0
Thallium	200.7	<0.005	0.50	ND	0.48	**96**	0.50	**100**	4.5	75- 125	25.0
Vanadium	200.7	<0.005	0.50	ND	0.54	**108**	0.56	**111**	2.7	75- 125	25.0
Zinc	200.7	<0.005	0.50	ND	0.57	**114**	0.56	**112**	1.2	75- 125	25.0

Definition of Terms:

MB: Method Blank
nc: Not Calculated due to high levels of analyte found in sample
na: Not analyzed in QC batch
SA: Spike Added
SR: Sample Result
SP: Spike Result
SP (%R) Spike % Recovery
SPD Spike Duplicate Result
SPD (%R) Spike % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: SGC4000322
Matrix: Solid
Units: µg/kg

Date Analyzed: 03/22/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/kg	SA µg/kg	SR µg/kg	SP µg/kg	**SP % R**	SPD µg/kg	**SPD %R**	% RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<5.0	4.3	ND	5.0	**116**	5.0	**116**	0.0	25	80-120
Toluene	8020	<5.0	31	ND	30	**96**	31	**99**	3.3	25	80-120
Ethyl Benzene	8020	<5.0	6.1	ND	6.0	**98**	6.0	**98**	0.0	25	80-120
Xylenes	8020	<5.0	35	ND	33	**95**	34	**98**	3.0	25	80-120
Gasoline	8015	<1000	500	ND	483	**97**	465	**93**	3.8	25	75-115
aaa-TFT(S.S.)-FID	8015			102%	125%		109%				65-135
aaa-TFT(S.S.)-PID	8020			93%	112%		107%				65-135

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

Laboratory Control Spikes

QC Batch #: DS000311
Matrix: Solid
Units: mg/Kg

Date analyzed: 03/20/00
Date extracted: 03/20/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB mg/Kg	SA mg/Kg	SR mg/Kg	SP mg/Kg	**SP %R**	SPD mg/Kg	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Diesel	8015M	<1.0	25	ND	23	**93**	22	**89**	4.4	30	50-150
Hexocosane				89%	88%		92%				65-135

Calculated Recovery Outside of Control Limits:

Definition of Terms:

MB: Method Blank
na: Not Analyzed in QC batch
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

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

ENVIRONMENTAL / ENGINEERING CONSULTANTS
382 MARTIN AVENUE
SANTA CLARA, CA 95050-3112
TEL: 408.327.5700 FAX: 408.327.5707

Results to Bill Lawson DATE: 3/20/00 PAGE 1 OF 1

PROJECT NAME: McMorgan
PROJECT NUMBER: 1124SC01
SITE ADDRESS: 444 Hegenberger Rd.
Oakland, CA
PHONE: (408) 327-5700
SAMPLERS SIGNATURE: [signature]

ANALYSIS REQUESTED

SAMPLE ID	TIME	DATE	LAB ID	SAMPLE MATRIX	NUMBER OF CONTAINERS	TYPE OF CONTAINERS	8015/8020/8012 TPH GAS/BTEX	DIESEL ☒ FC ☐ GASOLINE ☐ TPH/8015 MODIFIED	602/8020 BTEX	EPA 418.1 TRPH	601/8010 HALOGENATED VOLATILES	[redacted]	CAM METALS 6010/7000	MTBE	Methyl Et, Cd, Cr-(tot), Pb, Ni, Zn	TPHmo	REMARKS
MW-6-11	1115	3/20/00		Soil	1	BL	X	X			X	X			X	X	

TURNAROUND REQUIREMENTS
- ___ 24 hr
- ___ 48 hr
- X 5 day
- Standard
- ___ Other (Specify)
- ___ Provide Verbal Preliminary Results

Requested Report Date: ___

REPORT REQUIREMENTS
- X I. Routine Report
- ___ II. Report (Includes DUP, MB, MSD, as required, may be charged as samples)
- ___ III. Data Validation Report (Includes All Raw Data)
- ___ RWQCB

RELINQUISHED BY (SIGN)	PRINT NAME/COMPANY	DATE/TIME	RECEIVED BY (SIGN)	PRINT NAME/COMPANY
[signature]	Ed C, Inc.	3/20/00 1459	T.O.	Tim Oni Entech

RECEIVED AT LAB BY: | DATE/TIME | CONDITIONS/COMMENTS:

SHIPPED VIA ☐ FED X ☐ UPS ☐ OTHER _____ AIR BILL #

Mar-27-00 12:30

P.02

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

E2C
ENVIRONMENTAL / ENGINEERING CONSULTANTS
382 MARTIN AVENUE
SANTA CLARA, CA 95050-3112
TEL: 408.327.5700 FAX: 408.327.5707

Results to Bill Lawson DATE: 3/20/00 PAGE 1 OF 1

PROJECT NAME: McMorgan
PROJECT NUMBER: 1124SC01
SITE ADDRESS: 444 Hegenberger Rd. Oakland, CA
PHONE: (408) 327-5700
SAMPLERS SIGNATURE: [signature] Lawson

ANALYSIS REQUESTED

SAMPLE ID	TIME	DATE	LAB ID	SAMPLE MATRIX	NUMBER OF CONTAINERS	TYPE OF CONTAINERS	8015/8020/602 TPH GAS/BTEX	DIESEL ☒ FC ☐ GASOLINE ☐ TPH/8015 MODIFIED	602/8020 BTEX	EPA 418.1 TRPH	601/8010 HALOGENATED VOLATIES	GC/MS 624/8240/8260 VOLATILE ORGANICS	CAM METALS 6010/7000	MTBE	Metals Cd, Cr (tot), Pb, Ni, Zn	TPHmo	REMARKS
MW-6-11	1115	3/20/00		Soil	1	BL	X	X			X	X			X	X	19659 001

TURNAROUND REQUIREMENTS
- ___ 24 hr
- ___ 48 hr
- X 5 day
- X Standard
- ___ Other (Specify)
- ___ Provide Verbal
- ___ Preliminary Results

Requested Report Date ___

REPORT REQUIREMENTS
- X I. Routine Report
- ___ II. Report (Includes DUP, MS, MSD, as required, may be changed as samples)
- ___ III. Data Validation Report (Includes All Raw Data)
- ___ RWOCB

00 MAR 20 16:47

RELINQUISHED BY (SIGN)	PRINT NAME/COMPANY	DATE/TIME	RECEIVED BY (SIGN)	PRINT NAME/COMPANY
[signature] Lawson	E2C Inc.	3/20/00 1459	[signature]	Tim Oni Entech
[signature]	Tim Oni Entech	3/20/00 15:07	[signature]	

RECEIVED AT LAB BY:	DATE/TIME	CONDITIONS/COMMENTS:

00 MAR 20 15:07

SHIPPED VIA ☐ FED X ☐ UPS ☐ OTHER ______ AIR BILL #