January 21, 2000
Project Number 1124SC01
Via Facsimile & US Mail

#5814

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

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

Dear Mr. Murray:

E_2C, Inc. presents herein the results of the fourth 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-1, MW-2, MW-3, MW-4, and MW-5 (see Figure 2),
- Chemical analyses of the groundwater samples,
- Analysis of the data, and
- Preparation of this report.

In addition, this report presents the data concerning the destruction of groundwater monitoring well MW-1 and evaluates the need for a replacement well.

CURRENT GROUNDWATER MONITORING

Four shallow wells (MW-2 through MW-5) are located on the Site. One well (MW-1) was located off-site in the general groundwater upgradient direction. Figure 2 depicts the locations of the wells. These wells are used specifically for monitoring the physical and chemical conditions of groundwater in the uppermost groundwater-bearing zone beneath the Site.

On December 27, 1999, the fourth quarter monitoring round was performed. This sampling round was coordinated to take place just prior to destruction of Well MW-1. 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).

Due to receiving ACHCS' comments on the second quarter groundwater monitoring report after the third quarter's sampling and analyses were performed, dissolved oxygen and oxygen-reduction potentials were added to this sampling round and for subsequent rounds to follow.

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 slightly lower (a maximum of 0.24 foot in Well MW-4) than last quarter with the exception of Well MW-5, which increased 0.07 foot (see Table 2). Overall, groundwater levels at the Site have decreased, as seen in Figure 3, a graph depicting groundwater elevation changes from the first sampling round in December 1998 until the present. Since the initial groundwater levels were measured in December 1998, groundwater levels in all wells have mimicked each other. However, in the July 1998 sampling round, the water level in Well MW-4 decreased dramatically as compared to the groundwater levels in the other wells. The general trend of groundwater levels at Well MW-4 still mimics that of the other wells though.

As shown on Figure 3, groundwater levels in all wells mimicked each other with similar decreases. Groundwater levels at all wells, except MW-4, have acted similarly since. In the last quarterly report, it was suggested that less permeable groundwater-bearing materials might occur between MW-2 and MW-4. This supposition is still valid. In addition, the presence of a groundwater barrier cannot be precluded.

Since the dramatic decrease in the groundwater level at Well MW-4, the trend at this well has generally mimicked that of the other wells, yet groundwater levels have not risen to pre-July 1999 levels. This suggests that a boundary condition is present nearby possibly at an off-site location. This boundary condition may be the result of groundwater extraction from nearby in the downgradient direction. This will be discussed later in the recommendations section.

DISCUSSION OF GROUNDWATER GRADIENT PLOTS

The data for the fourth quarter were plotted onto a base map (Figure 2 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 2). The general slope of the groundwater gradient at the Site is relatively flat, as the highest gradient appears to be 0.0489 feet vertical per feet horizontal distance (ft/ft) with a northerly direction. This is an average between Well MW-2 and MW-4. There is also a flow component between Well MW-1 and the area encompassing Wells MW-5 and MW-3. The gradient between these wells is extremely flat, averaging 0.0010 ft/ft.

The contour interval used was 0.50 of a foot except for that area from Well MW-1 to Well MW-5, where 0.05 of a foot was used. South of Well MW-2, the gradient is flatter than it is north of that well. This condition extends generally from Well MW-1 west through the Well MW-2 area and west towards Well MW-3.

The groundwater gradient conditions are very similar to those seen in the third quarter of 1999 (E_2C, 1999). However, as groundwater elevations have only been measured four times at the Site, there are not enough data to determine 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 ranged from non-detect (Well MW-1) to a high of 170 micrograms per liter (µg/L), which is equivocal to parts per billion (ppb), at Well MW-3. The Maximum Contaminant Limit (MCL) for Benzene is 1 µg/L.

Concentrations of Benzene decreased in groundwater at all wells excluding MW-1, as it was non-detect for Benzene. The largest decrease in Benzene concentration occurred in groundwater at Well MW-4, which decreased from 320 µg/L last quarter to 5.8 µg/L this quarter (see Table 4 and Figure 5). Figure 5 depicts Benzene concentrations in groundwater since the initial sampling round. As seen on Figure 5, concentrations of Benzene in groundwater have generally mimicked each other, with small variations and the exception of the March 1999 sampling round. In March 1999, Benzene concentrations in groundwater at Wells MW-3 and MW-4 increased dramatically.

This quarter, the highest concentration of Benzene was detected in groundwater at Well MW-2, whereas last quarter the highest concentration was in groundwater at Well MW-3. Figure 4 depicts Benzene concentrations in groundwater. As seen on Figure 4, the highest concentration of Benzene was detected in the approximate center of the Site. The second highest concentration (170 µg/L) was found in the groundwater at Well MW-2. An overall trend cannot be determined at this time as more data would be required.

TPHg in Groundwater

The concentrations of TPHg decreased in all wells except MW-1 and MW-2. TPHg was not detected in the groundwater sample from Well MW-1, whereas it was detected last quarter. The TPHg concentration in groundwater at Well MW-2 remained constant, 990 µg/L last quarter and 1,000 µg/L this quarter).

An isoconcentration plot of TPHg concentrations (see Figure 6) shows the TPHg groundwater plume to be similar to the Benzene groundwater plume. The highest concentration of TPHg (1,000 µg/L) in groundwater is seen at Well MW-2, whereas the second highest concentration (560 µg/L) is seen in groundwater at Well MW-3.

Groundwater at Well MW-1 had been non-detect for the compounds tested for the first three sampling rounds since its installation, with the exception of a TPHd hit (190 µg/L) in March 1999. Last quarter, a concentration of 3,100 µg/L was detected in the groundwater at this well (with minor TEX hits). Well MW-1 has always been in the upgradient groundwater direction and groundwater gradient plots suggest that groundwater has not moved in that direction. The hits may be the result of an off-site contributor.

TPHd in Groundwater

TPHd decreased in concentration in groundwater at all wells that it was previously detected (see Table 4).

Dissolved Oxygen and Oxygen Reduction Potentials

Starting this quarter, dissolved oxygen (DO) and oxygen-reduction potentials (ORP) were measured, pre- and post-purging as requested by the ACHCS (ACHCS, 1999). These measurements are contained in the well sampling data sheets in Appendix A. An evaluation of this data would be premature as this was the first quarter that these parameters were measured,

Conclusions Regarding the Analytical Data

TPHg, TPHd, and Benzene decreased in concentrations throughout the Site for this sampling round. As only four sampling rounds have been performed at the Site, there are not enough data to determine significant concentration trends. Since DO and ORP have only been measured once, significant trends cannot be determined.

DESTRUCTION OF WELL MW-1

The 450 Hegenberger Road property, which is immediately adjacent to the Site, was sold. This property is currently undergoing construction. Well MW-1 was determined to be in the way of the construction. With the approval of Mr. Barney Chan of the ACHCS, this well was destroyed in accordance with ACHCS guidelines in December 1999. Immediately prior to the destruction, groundwater in the well was sampled (see analytical section above). Destruction of the well was predicated on performing a post-well destruction evaluation for replacement of the well. Appendix A contains the well destruction approval by the ACHCS. Appendix A also includes the destruction permit. The next section evaluates the need for replacement of this well.

Evaluation of Need for Replacement of Well MW-1

Well MW-1 has always been the upgradient well. The groundwater conditions at this well are such that this well would remain in an upgradient position.

Chemical hits in the groundwater from the well have generally been non-detect for the constituents of concern. The chemical hits (TPHd, TPHg, and low levels of TEX) that were found were possibly from an off-site source.

Of the most importance, Benzene has never been detected in this well.

Based on these data, Well MW-1 does not require replacement. The remaining four wells can adequately monitor the movement of groundwater beneath the Site.

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. qtrly Copies of this and future reports will be sent to Mr. Barney Chan of ACHCS.

Though TPHg has generally been non-detect in groundwater at Well MW-1, it was detected once at a significant concentration, 3,100 µg/L. As recommended in last quarter's report, it may be beneficial to perform a database review to assess the potential that upgradient sources may be present.

The groundwater gradient plots suggest that groundwater extraction may be underway nearby at a downgradient site. It is recommended that a database review also 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. does not recommend the replacement of Well MW-1 as the remaining wells at the Site can adequately monitor movement of groundwater and the groundwater chemical plume beneath the Site.

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, RG, CHG
Senior Hydrogeologist

WAL: 1124SC01_qmr4_99
cc: Mr. 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).

E_2C, Inc., October 20, 1999, Quarterly Groundwater Monitoring, Third 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

FIGURE 2 – SITE MAP/GROUNDWATER GRADIENT 12/99

FIGURE 3 – COMPARISON OF GROUNDWATER LEVELS

FIGURE 4 – BENZENE ISOCONCENTRATION PLOT

FIGURE 5 – GRAPH OF BENZENE IN GROUNDWATER

FIGURE 6 – TPHg ISOCONCENTRATION PLOT

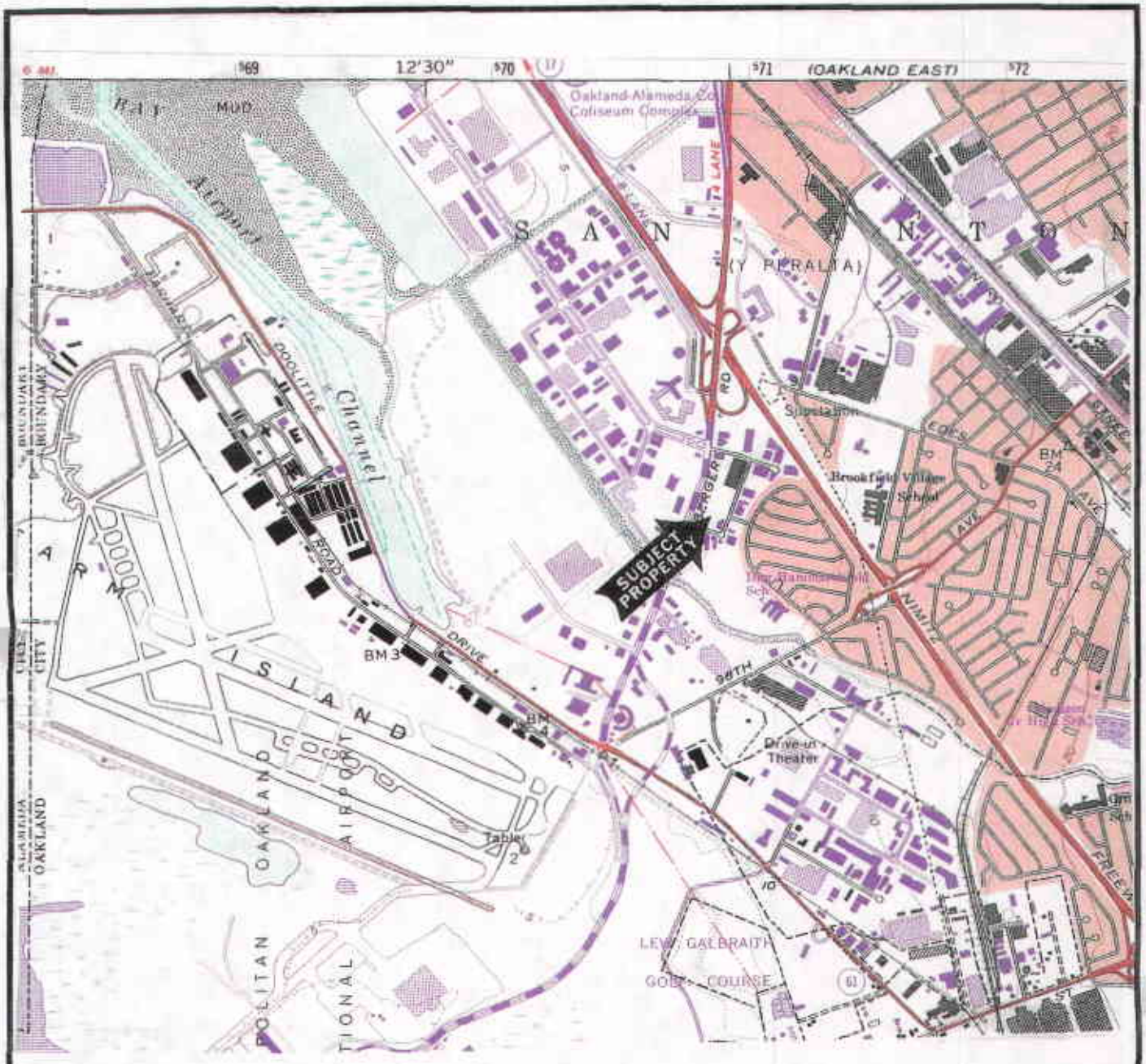

FIGURE 1 - SITE LOCATION MAP

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

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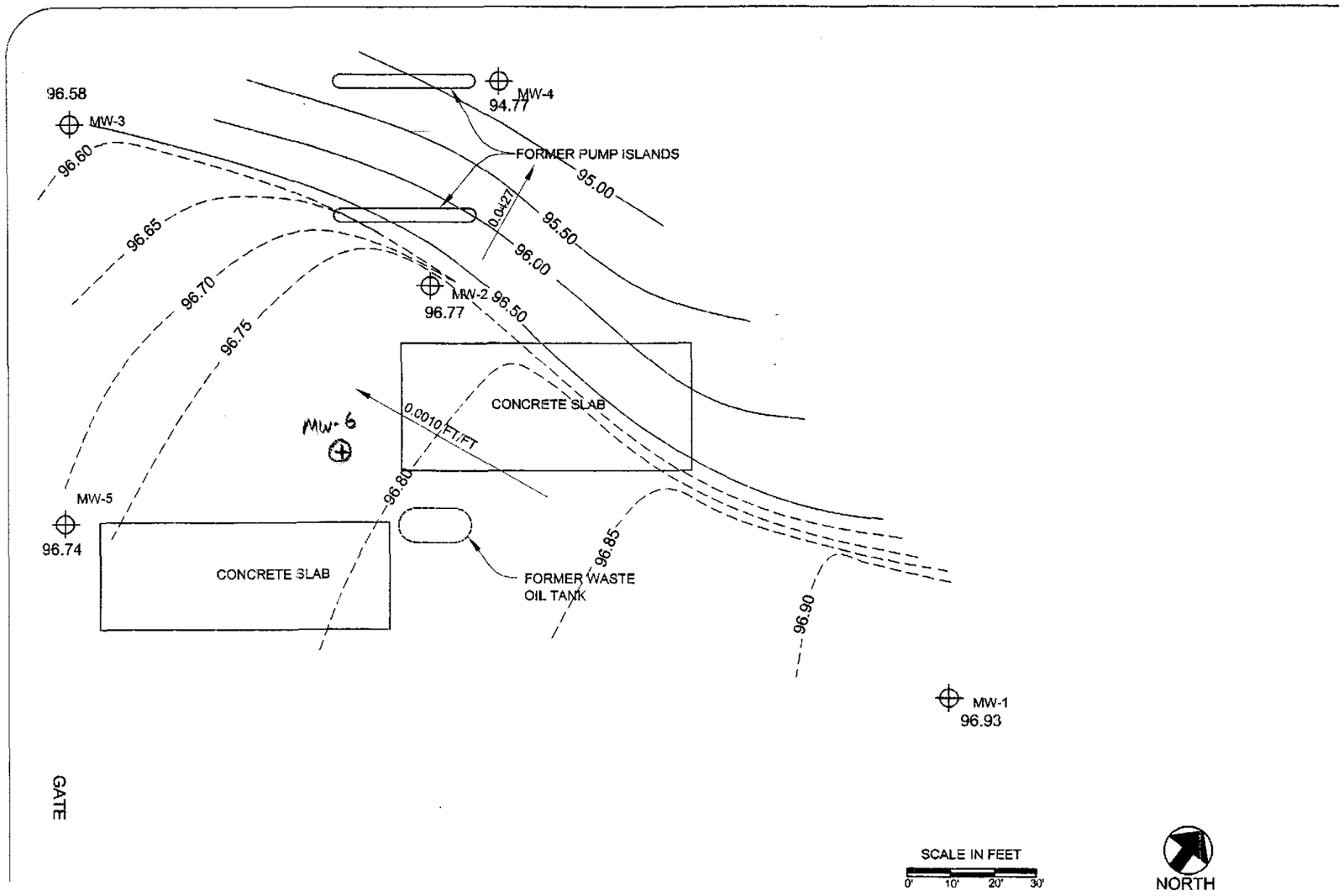
HEGENBERGER ROAD

HEGENBERGER LOOP



EXPLANATION

- MW-5 — GROUNDWATER MONITORING WELL LOCATION
- (96.93) — GROUNDWATER ELEVATION (FEET BASED ON ASSUMED DATUM)
- – – – GROUNDWATER CONTOUR (DASHED WHERE APPROXIMATE) (CONTOUR INTERVAL 0.05' AND 0.50')
- ——→ 0.0427 AND 0.0010 - GROUNDWATER FLOW DIRECTION & GRADIENT

Figure - 2 SITE PLAN & GROUNDWATER GRADIENT PLOT (12.27.1999)

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444 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

FILENAME: 1124SC01
DATE: JANUARY 2000
REVISION:
DRAWN: JUSTUS

Job Number:
1124SC01

COMPARISON OF GROUNDWATER LEVELS

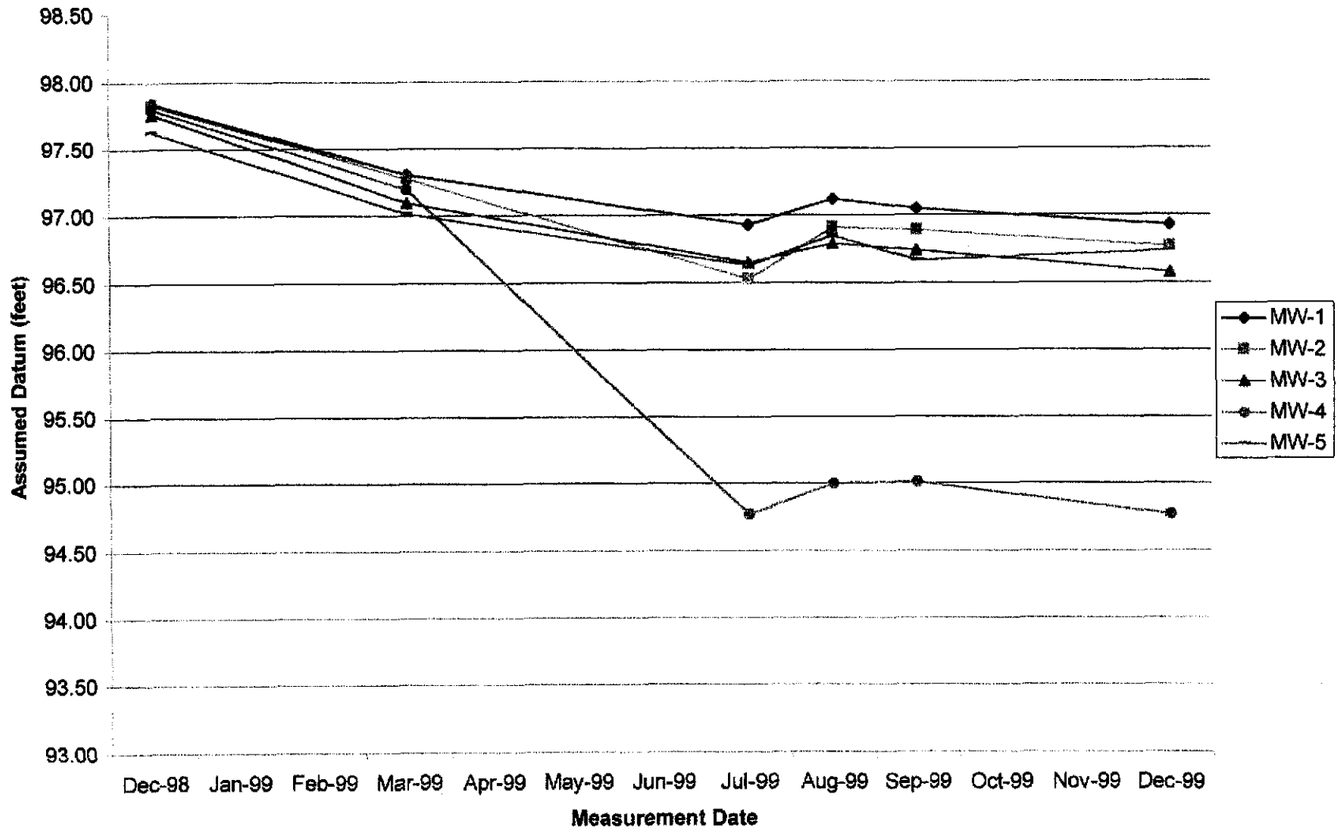

Figure - 3 COMPARISON OF GROUNDWATER ELEVATIONS

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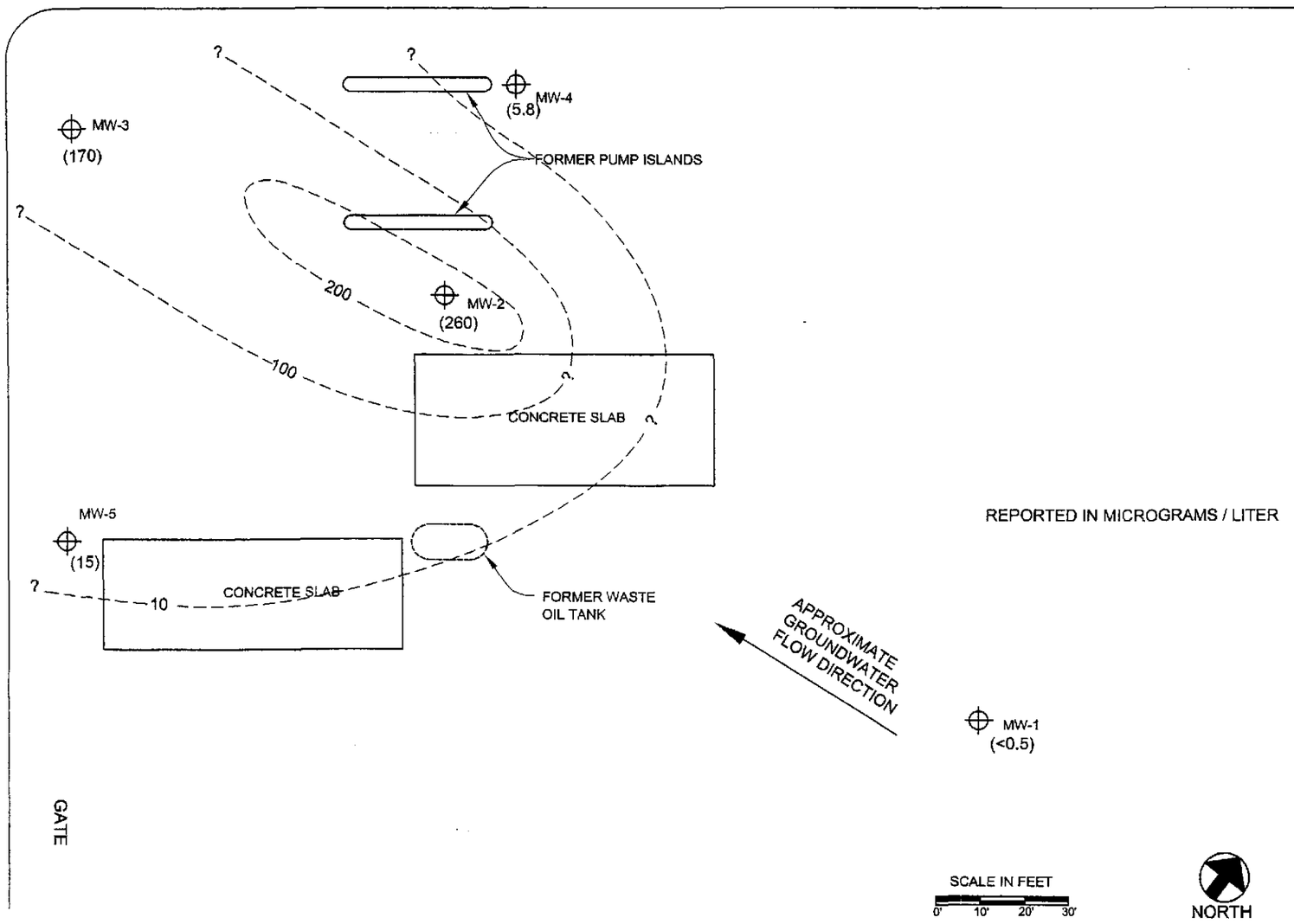
HEGENBERGER ROAD

HEGENBERGER LOOP



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EXPLANATION

- MW-5 — GROUNDWATER MONITORING WELL LOCATION
- (15) — BENZENE CONCENTRATION (mμ/L)
- —10— BENZENE ISOCONCENTRATION CONTOUR (DASHED WHERE APPROXIMATE ; QUERIED WHERE UNKNOWN)

Figure - 4 BENZENE ISOCONCENTRATION PLOT (12.27.1999)

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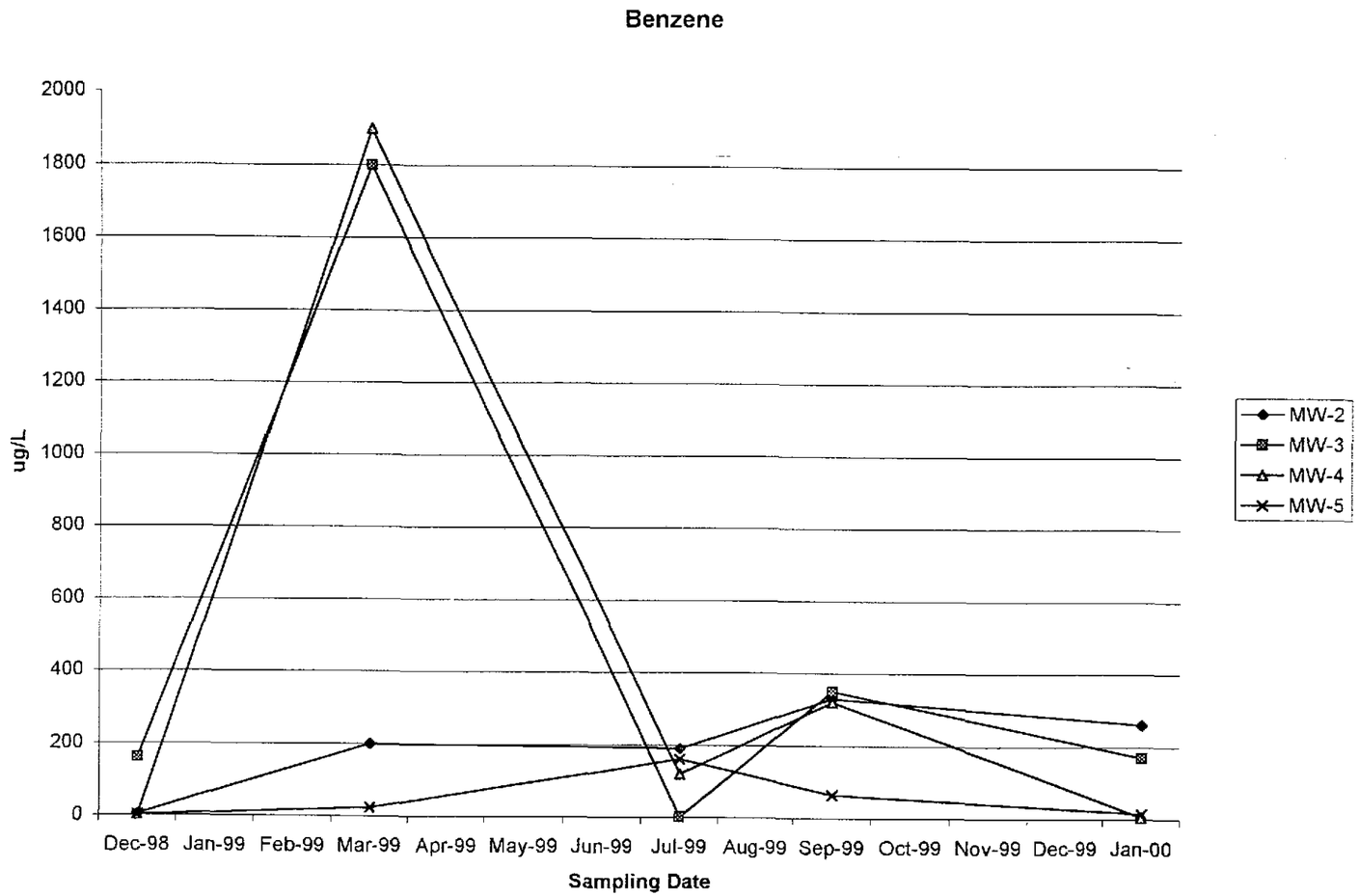

Figure - 5 BENZENE CONCENTRATIONS IN GROUNDWATER

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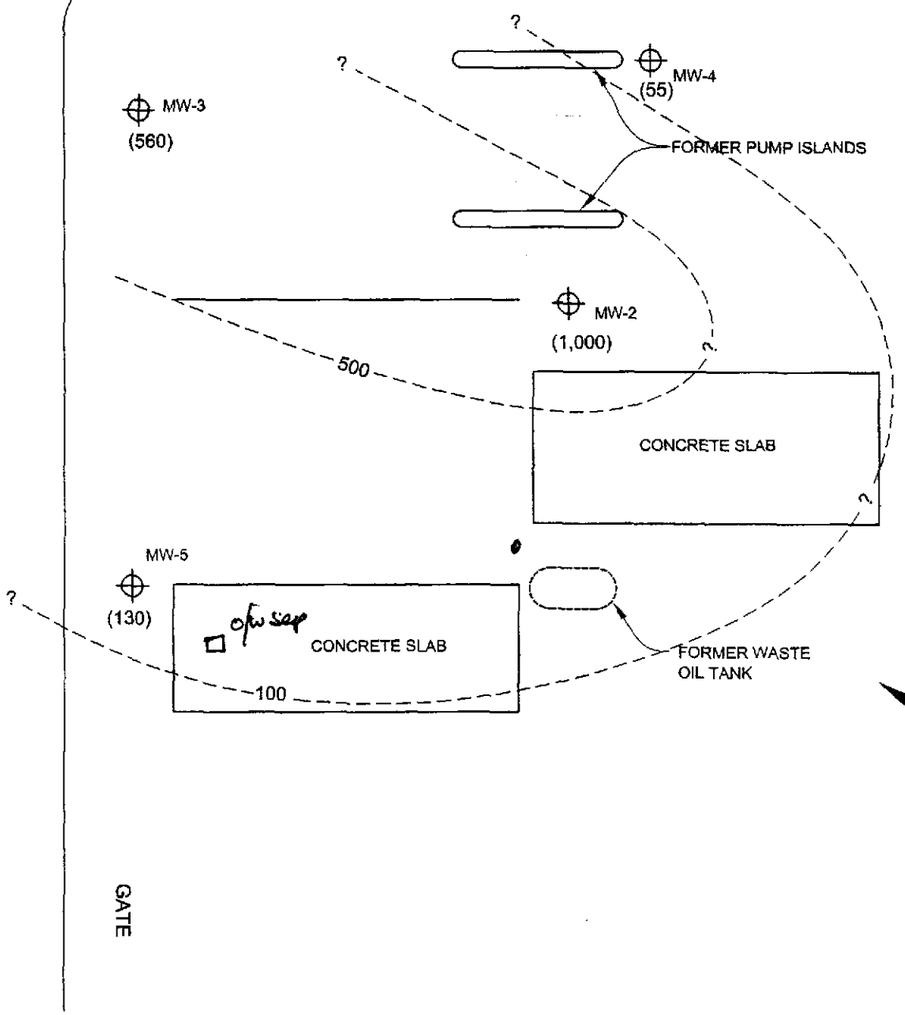
HEGENBERGER ROAD

HEGENBERGER LOOP



REPORTED IN MICROGRAMS / LITER

EXPLANATION

MW-5 GROUNDWATER MONITORING WELL LOCATION

(130) TPHg CONCENTRATION (mμ/L)

—100— TPHg ISOCONCENTRATION CONTOUR
(DASHED WHERE APPROXIMATE ; QUERIED WHERE UNKNOWN)

Figure - 6 TPHg - ISOCONCENTRATION PLOT (12.27.1999)

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1124SC01

TABLES

T-1 – PHYSICAL CHARACTERISTICS OF GROUNDWATER MONITORING WELLS

T-2 – COMPARISON OF GROUNDWATER ELEVATIONS

T-3 – SUMMARY OF HISTORICAL GROUNDWATER FLOW CONDITIONS

T-4 - SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

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	
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		5.67	96.77	
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	
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	
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	

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	0	0
	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
MW-2	12/02/98	97.83	0	0
	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
MW-3	12/02/98	97.76	0	0
	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
MW-4	12/02/98	97.80	0	0
	03/08/99	97.20	-0.60	-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
MW-5	12/02/98	97.63	0	0
	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

* = 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	97.12	W	0.0013
	MW-2	96.91		
	MW-3	96.79		
	MW-4	95.00		
	MW-5	96.85		
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	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		

* = 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 4 - HISTORICAL GROUNDWATER ANALYTICAL DATA

WELL I.D.	DATE	TPHd	TPHg	B	T	E	X
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	3100	<0.5	9.6	7.8	12
	12/27/99	<50	<50	< 0.5	< 0.5	< 0.5	< 0.5
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
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
MW-4	12/2/98(a)	620	<50	1.1	0.37	<0.3	2
	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
MW-5	12/2/98(a)	620	<50	1.1	0.37	<0.3	2
	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
	MCLs	NE	NE	1	100	680	1,750

Notes:

Shaded values meet or exceed their respective MCLs

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

MCLs = Maximum Contaminant Levels per State Office of Drinking Water Shaded values exceed MCLs

TPHd = Total petroleum hydrocarbons as diesel

TPHg = Total petroleum hydrocarbons as gasoline

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes (total)

* = 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

APPENDIX A

WELL MONITORING FIELD DATA SHEETS

DUGAN ASSOCIATES
SAMPLING
SERVICES
Subsurface Environmental Sampling

1180 DELMAS AVE.
SAN JOSE, CA 95125

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

Work Scope
Field Record

Site Name McMorgan & Company
444 Hegenberger Rd., Oakland, CA

Date 12/27/99 **Milage:**

Client: E2C, Inc.

Client Job#: 1124SC01

Field Crew Bill Dugan

Task ☑ Well Gauging ☑ Monitoring Well Sampling
☑ Other Pre-and Post Purge D.O. & ORP readings for all wells [#1-#5].

Field Log:

Time	Comments
	Leave Office for Site
8:00	Arrive at Site
9:25	Begin opening all wells
9:32	End opening all wells
9:33	Begin Gauging all wells

Well I.D.	DTW (ft) /Time	DTW (ft) /Time	DTW (ft) /Time	~~Sheen (Yes/No)~~ DTW/ Time	Well Order
MW-1	~NA -3.81				
MW-2	5.67				
MW-3	5.42 / 9:37	5.44 / 9:46	5.44 / 9:52		
MW-4	5.23 / 9:43	5.23 / 9:50	—		
MW-5	5.45 / 9:39	5.53 / 9:48	5.57 / 9:55	~~5.38 / 10:01~~	5.44 / 10:03
					5.44 / 10:05

	End gauging all wells
	Begin purging all wells
	End purging all wells
	Begin sampling all wells
	End sampling all wells
	Begin locking all wells
	End locking all wells
	Leave site for office
	Arrive at office

Mobilization Time: _____

Demobilization Time: _____

Chain of Custody Preparation & Final Packaging for Laboratory Courier : _____

Item	Materials
	Disposable Bailers
	Replacement 4-inch Well cap with lock
	Replacement 2-inch Well Cap with Lock

DUGAN ASSOCIATES
SAMPLING
SERVICES
Subsurface Environmental Sampling

1180 DELMAS AVE.
SAN JOSE, CA 95125

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

Groundwater Monitoring & Sampling Record

Site Name McMorgan & Company
444 Hegenberger Rd., Oakland, CA

Date 12/27/99 **Milage:**

Field Crew Bill Dugan **Well I.D.** MW-1

Wellhead Inspection

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

Task ☑ Well Gauging ☑ Monitoring Well Sampling
☑ Other Pre-and Post Purge D.O. & ORP readings for all wells [#1-#5].

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

Purge Volume Calculations

Total Depth of well	19.45 ft
Depth to water	3.81 ft
Height of Water in well	15.64 ft

15.64 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*) = 2.5 gal (*One Well Volume*)

2.5 gal (*One Well Volume*) x 4 (*Number of Target Well Volumes*) = 10 gal *Purge Volume*

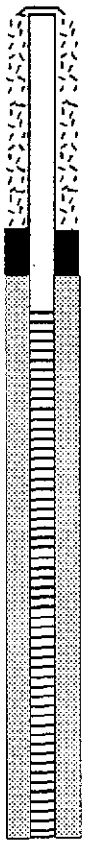
Decon Log

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. * 1



Field Observation/Notes:

TIME	GALLONS	D.O. [~~ppm~~ mg/L]	O.R.P. [uS]	TURBIDITY [NTUs]	pH	EH [~~uS~~ ppm]	TEMP. F	DTW (ft) BTOC
8:28	1st Bail	1.9	171		7.27	380	59.5	
	5	——	231		7.18	360	61.0	
	10	2.7	230		7.19	370	60.8	
8:48	10.5	2.7	239		7.12	359	63.9	
9:02	10.5	2.0*						

Recovery Data:
3.85 ft BTOC @ 8:49
* = Down hole measurement

Sample Containers:

☒ 40 ml VOA vials 3
☒ 1-liter amber glass 2
☐ 16-oz plastic bottle ——

Sample Collection: ☒ Disposable Bailer ☐ PVC Bailer ☐ Stainless-Steel Bailer
Sample Depth: 3.9 – 4.0 Ft BTOC

Sample Handing:

DUGAN ASSOCIATES
SAMPLING
SERVICES
Subsurface Environmental Sampling

1180 DELMAS AVE.
SAN JOSE, CA 95125

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

Groundwater Monitoring & Sampling Record

Site Name McMorgan & Company
444 Hegenberger Rd., Oakland, CA

Date 12/27/99 **Milage:**

Field Crew Bill Dugan **Well I.D.** MW-2

Task ☑ Well Gauging ☑ Monitoring Well Sampling
☑ Other Pre-and Post Purge D.O. & ORP readings for all wells [#1-#5].

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 19.52 ft
Depth to water 5.67 ft
Height of Water in well 13.85 ft

13.85 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*) = 2.3 gal (*One Well Volume*)

2.3 gal (*One Well Volume*) x 3 (*Number of Target Well Volumes*) = 7 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?

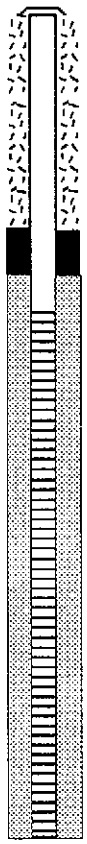
Drum Log

yes no
☐ ☐ 55-gallon drum

Drum I.D. _____

Field Observation/Notes: mild product odor. NO sheen light yellow brown sediment, clear @ ± 6 gallons

TIME	GALLONS	D.O. [ppm]	O.R.P. ~~tuSt~~ mV	TURBIDITY [NTUs]	pH	EH ~~tuSt~~ ppm	TEMP, F	DTW (ft) BTOC TD
~~1:10~~	~~0~~	~~1.2~~						
12:51								5.67 / 19.52
			221		7.12	560	68.7	
1:05	4		219		7.12	552	68.7	
	10							



Recovery Data:

Sample Containers:

☒ 40 ml VOA vials 3
☒ 1-liter amber glass 2
☐ 16-oz plastic bottle ____

Sample Collection: ☐ Disposable Bailer ☐ PVC Bailer ☐ Stainless-Steel Bailer Sample Depth: _____

Sample Handing:

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SERVICES
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SAN JOSE, CA 95125

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

Groundwater Monitoring & Sampling Record

Site Name McMorgan & Company
444 Hegenberger Rd., Oakland, CA

Date 12/27/99 **Milage:**

Field Crew Bill Dugan **Well I.D.** MW-3

Wellhead Inspection

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

Task ☑ Well Gauging ☑ Monitoring Well Sampling
☑ Other Pre-and Post Purge D.O. & ORP readings for all wells [#1-#5].

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

Purge Volume Calculations

Total Depth of well	19.60 ft
Depth to water	5.44 ft
Height of Water in well	14.16 ft

14.16 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*) = 2.35 gal (*One Well Volume*)

2.35 gal (*One Well Volume*) x 3 (*Number of Target Well Volumes*) = 7.05 gal *Purge Volume*

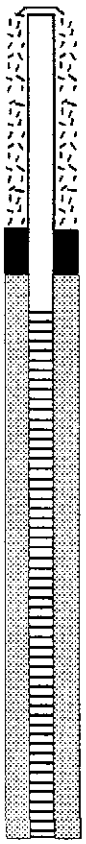
Decon Log

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. _____



Field Observation/Notes: "Corner of Hegenberg Rd / Hegenberg Lane well" water = light yellow brown, slight product odor.

TIME	GALLONS	D.O. [~~ppm~~] mg/L	O.R.P. [~~mV~~] mV	TURBIDITY [NTUs]	pH	EH [~~mV~~] PPM	TEMP. F	DTW (ft) BTOC
10:10	~~0~~	1.0						
10:22	1st Bail		162		7.16	539	62.8	
	4		-48		7.05	586	65.4	
10:38	8		-24		7.14	511	65.9	
10:44	8	1.3						

Recovery Data:
10:36 DTW = 5.50 ft BTOC
10:43 DTW = 5.47 ft BTOC

Sample Containers:

☒ 40 ml VOA vials 3
☒ 1-liter amber glass 2
☐ 16-oz plastic bottle ____

Sample Collection: ☐ Disposable Bailer ☐ PVC Bailer ☐ Stainless-Steel Bailer Sample Depth: ~ 5.5 - 6.0'

Sample Handing:

DUGAN ASSOCIATES
SAMPLING
SERVICES
Subsurface Environmental Sampling

1180 DELMAS AVE.
SAN JOSE, CA 95125

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

Groundwater Monitoring & Sampling Record

Site Name McMorgan & Company
444 Hegenberger Rd., Oakland, CA

Date 12/27/99 **Milage:**

Field Crew Bill Dugan **Well I.D.** MW-4

Task ☑ Well Gauging ☑ Monitoring Well Sampling
☑ Other Pre-and Post Purge D.O. & ORP readings for all wells [#1-#5].

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 19.58 ft
Depth to water 5.21 ft
Height of Water in well 14.37 ft

14.37 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] = 2.39 gal (One Well Volume)

2.39 gal (One Well Volume) x 3 (Number of Target Well Volumes) = 7.17 gal *Purge Volume*

Decon Log

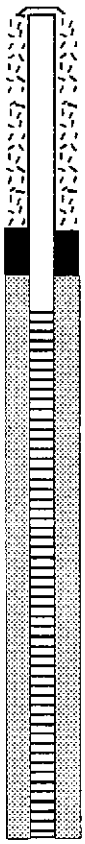
Pump I.D. N/A
yes no
☐ ☐ Steam-cleaned?
☐ ☐ Alconox rinse?

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

Drum Log

yes no
☐ ☐ 55-gallon drum

Drum I.D. _____



Field Observation/Notes: well Box flooded above TOC.

TIME	GALLONS	D.O. [ppm]	O.R.P. [uS]	TURBIDITY [NTUs]	pH	EH [uS]	TEMP. F	DTW (ft) BTOC
12:31	-0-		257		7.15	371	68.1	5.21

Recovery Data:

Sample Containers:

☒ 40 ml VOA vials 3
☒ 1-liter amber glass 2
☐ 16-oz plastic bottle ——

Sample Collection: ☐ Disposable Bailer ☐ PVC Bailer ☐ Stainless-Steel Bailer Sample Depth: _____

Sample Handing:

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SAMPLING
SERVICES
Subsurface Environmental Sampling

1180 DELMAS AVE.
SAN JOSE, CA 95125

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

Groundwater Monitoring & Sampling Record

Site Name McMorgan & Company
444 Hegenberger Rd., Oakland, CA

Date 12/27/99 **Milage:**

Field Crew Bill Dugan **Well I.D.** MW-5

Wellhead Inspection

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

Task ☑ Well Gauging ☑ Monitoring Well Sampling
☑ Other Pre-and Post Purge D.O. & ORP readings for all wells [#1-#5].

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

Purge Volume Calculations

Total Depth of well	19.54 ft
Depth to water	5.54 ft
Height of Water in well	14.0 ft

14.0 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*) = 2.32 gal (*One Well Volume*)

2.32 gal (*One Well Volume*) x 3 (*Number of Target Well Volumes*) = 7 gal *Purge Volume*

Decon Log

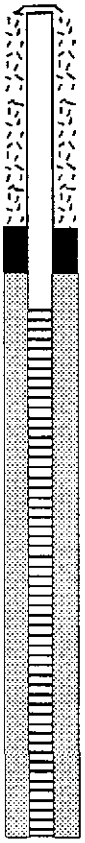
Pump I.D. N/A
yes no
☐ ☐ Steam-cleaned?
☐ ☐ Alconox rinse?

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

Drum Log

yes no
☐ ☐ 55-gallon drum

Drum I.D. _____



Field Observation/Notes: initial 4 gal. moderate sediment load (light brown) No sheen, No Product odor.

TIME	GALLONS	D.O. ~~[ppm]~~ mg/L	O.R.P. ~~[uS]~~ mV	TURBIDITY [NTUs]	pH	EH ~~[uS]~~ ?om	TEMP. F	DTW (ft) BTOC
11:39	~~0~~	1.8						
11:48	5	~~X~~	189		7.54	476	68.4	
11:52	7	~~X~~	182		7.24	433	68.4	
11:56	10	~~6.2~~	186		7.14	429	68.5	
12:05	10							5.54
12:08	10	1.6						

Recovery Data: 100% @ 12:05 pm.

Sample Containers:

☒ 40 ml VOA vials 3
☒ 1-liter amber glass 2
☐ 16-oz plastic bottle ——

Sample Collection: ☒ Disposable Bailer ☐ PVC Bailer ☐ Stainless-Steel Bailer
Sample Depth: 6.0 ft BTOC

Sample Handing:

APPENDIX B

LABORATORY REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

January 05, 2000

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

Order: 18344
Project Name:
Project Number: 1124SC01
Project Notes:

Date Collected: 12/27/99
Date Received: 12/28/99
P.O. Number: Invoice E2C

On December 28, 1999, 5 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 (#I-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# I-2346

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

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

Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-001 **Client Sample ID:** W-MW-1
Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	12/28/99	12/29/99	DW991211	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits
Hexacosane	84	65 - 135

Order ID: 18344 **Lab Sample ID:** 18344-002 **Client Sample ID:** W-MW-2
Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	12/28/99	12/29/99	DW991211	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits
Hexacosane	100	65 - 135

Order ID: 18344 **Lab Sample ID:** 18344-003 **Client Sample ID:** W-MW-3
Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	70	X	1	50	50	µg/L	12/28/99	12/29/99	DW991211	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits
Hexacosane	102	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 #I-2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

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

Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-004 **Client Sample ID:** W-MW-4
Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	12/28/99	12/29/99	DW991211	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits
Hexacosane	122	65 - 135

Order ID: 18344 **Lab Sample ID:** 18344-005 **Client Sample ID:** W-MW-5
Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	12/28/99	12/29/99	DW991211	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits
Hexacosane	119	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 #I-2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-001 **Client Sample ID:** W-MW-1

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Toluene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	100	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	50	50	µg/L		12/28/99	WGC4991228	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	114	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 #I-2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-002 **Client Sample ID:** W-MW-2

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	260		2	0.5	1	µg/L		12/29/99	WGC1991229	EPA 8020
Toluene	7.2		2	0.5	1	µg/L		12/29/99	WGC1991229	EPA 8020
Ethyl Benzene	1.3		2	0.5	1	µg/L		12/29/99	WGC1991229	EPA 8020
Xylenes, Total	10.0		2	0.5	1	µg/L		12/29/99	WGC1991229	EPA 8020

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	99	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	1000		2	50	100	µg/L		12/29/99	WGC1991229	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	90	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 #I-2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

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

Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-003 **Client Sample ID:** W-MW-3

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	170		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Toluene	2.1		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Ethyl Benzene	7.6		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Xylenes, Total	3.1		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	89	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	560		1	50	50	µg/L		12/28/99	WGC4991228	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	94	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 #I-2346)

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Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-004 **Client Sample ID:** W-MW-4

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	5.8		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Toluene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	101	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	55		1	50	50	µg/L		12/28/99	WGC4991228	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	113	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 #I-2346)

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Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-005 **Client Sample ID:** W-MW-5

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	15		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Toluene	0.73		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	96	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	130		1	50	50	µg/L		12/28/99	WGC4991228	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	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 #I-2346)

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

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
X ☐

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

CERTIFIED ANALYTICAL LABORATORY:
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): BILL DUGAN
DATE (S): 11/12/99

8344	SAMPLE I.D.#:	SAMPLED DATE	SAMPLED TIME	NUMBER OF CONTAINERS	SAMPLE MATRIX (SOIL OR WATER)	TPH@ (LUFT)	TPH@ / BTEX	TPH@ (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-1	12/27/99		5	Water		X	X								Yes
002	W-MW-2	12/27/99		5	Water		X	X								Yes
003	W-MW-3	12/27/99		5	Water		X	X								Yes
004	W-MW-4	12/27/99		5	Water		X	X								Yes
005	W-MW-5	12/27/99		5	Water		X	X								Yes

COMMENTS / SPECIAL INSTRUCTIONS TO LABORATORY:
Invoice E2C, Inc.

COMMENTS / SPECIAL NOTATIONS BY LABORATORY:

CONDITION OF EVIDENCE TAPE (IF APPLICABLE):

RELINQUESTED BY (SIGNATURE): DUGAN ASSOCIATES	RECEIVED BY (SIGNATURE):	DATE 12/24/99	TIME 8:10 am
RELINQUESTED BY (SIGNATURE): AFFILIATION: Dugan Assoc	RECEIVED BY (SIGNATURE): Arash Ceighami AFFILIATION: Entech	DATE 12/28/99	TIME 11:47
RECEIVED BY (SIGNATURE): AFFILIATION:	RECEIVED BY (SIGNATURE): AFFILIATION:	DATE	TIME

Environmental Sampling Since 1986

APPENDIX C

WELL MW-1 DESTRUCTION DATA

ACHSCA Approval Letter
Well Destruction Permit

TO: William Dawson E2C
from: Barney Chan ACEH

December 3, 1999
Project Number 1124SC01
Via Facsimile and U.S. Mail

Alameda County Health Care Services
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

ATTN: Barney M. Chan
SUBJECT: **Letter of Understanding**
Destruction of Monitoring Well MW-1
444 Hegenberger Road
Oakland, California

Dear Mr. Chan:

In reference to our telephone conversation yesterday, December 2, 1999, it is our understanding that we may destroy off-site Well MW-1. Then we can perform an evaluation to assess the need for replacement, if necessary. The off-site property owners have expressed an interest in having the abandonment done ASAP as they are developing the property.

In accordance with your concern regarding the latest TPHg hit in MW-1, we propose the following plan of action.

1) Collect Fourth Quarter groundwater samples from all wells ASAP.
2) Schedule to abandon Well MW-1.
3) Fill out necessary permits and submit them to the appropriate agencies.
4) Abandon well by overdrilling and grouting in accordance with regulatory agency guidelines.
5) Submit Fourth Quarter Monitoring report.
6) Perform evaluation as to need for a replacement well.
7) Install replacement well, if deemed necessary, in First Quarter of 2000 and add to sampling schedule. The evaluation will be reported in the First Quarter 2000 Monitoring report.

If you are in agreement with this course of action, please sign and fax a copy to us. Should you have any questions or require supplemental information, please do not hesitate to contact us.

E$_2$C INC
ENVIRONMENTAL / ENGINEERING CONSULTANTS
382 Martin Avenue, Santa Clara, CA 95050-3013 TEL: 408.327.5700 Fax: 408.327.5707

I concur with the plan of action discussed above.

Barney M. Chan Dated 12-6-99

Barney M. Chan, ACHCS

Sincerely,

William A. Lawson
Project Geologist

WAL E$_2$C: 11245C01_101399_bllett

CC: Mr. Patrick Murray
McMorgan & Co.
One Bush St., Suite 800
San Francisco, CA 94104

Mr. Brad Urie, FAX-(714) 445-3630
Marriott Architecture & Construction
3130 S. Harbor Blvd., Suite 340
Santa Ana, CA 92704

Walter Kim, E$_2$C

COUNTY OF ALAMEDA
PUBLIC WORKS AGENCY
951 Turner Court, Room 300
Hayward, CA 94545-2651

FAX TRANSMITTAL

TO: William Lawson - E2C Inc.

DATE: 12/14/99

FAX NO.: 408-327-5707

TRANSMITTING THE FOLLOWING:

TITLE/DESCRIPTION
Drilling Permit 99WR-723 and destruction requirements —

3 **TOTAL PAGES INCLUDING THIS SHEET.**

FROM WATER RESOURCES

NAME: Marlon Magallanes/Cindy Hutchinson **TEL:** (510) 670-5248 **FAX:** (510) 670-5262

E-MAIL: Wrebcc@acwpa.mail.co.alameda.ca.us-Cindyh@acwpa.mail.co.alameda.ca.us

IF YOU EXPERIENCE PROBLEMS WITH THIS TRANSMISSION, PLEASE CALL US.
REMARKS:

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5248 MARLON MAGALLANES/CINDY HUTCHINSON
FAX (510) 670-5262

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 444 Hegenberger Rd. Oakland, CA

CLIENT
Name McMorgan & Company
Address One Bush St., Suite 600 Phone (415) 788-9300
City San Francisco Zip 94104

APPLICANT
Name E, C, Inc.
Fax
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	☐	Well Destruction	☒

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C-17768/

WELL PROJECTS
Drill Hole Diameter ____ in. Maximum
Casing Diameter ____ in. Depth ____ ft.
Surface Seal Depth ____ ft. Number ____

GEOTECHNICAL PROJECTS
Number of Borings 1 Maximum
Hole Diameter 3 in. Depth 20 ft.

ESTIMATED STARTING DATE DEC 27, 99
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 W. Lawson for E, C, Inc. DATE 12/10/99

FOR OFFICE USE

PERMIT NUMBER 99WR723
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 Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
(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 compacted cuttings or heavy 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 Coelho DATE 12-14-99

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5248 MARLON MAGALLANES/CINDY HUTCHINSON
FAX (510) 670-5262

WATER RESOURCES SECTION
GROUNDWATER PROTECTION ORDINANCE
For General Destruction of Wells

Destruction Requirements:

1. Remove from the well any pump, appurtenances, debris, or other materials to a depth of 22 feet below the finished grade or original ground, whichever is the lower elevation.

2. Sound the well as deeply as practicable and record for your report.

3. Fill well below 22 feet with neat cement, cement grout or concrete.

4. Remove any casing(s) and annular seal to 2 feet below finished grade of original ground, whichever is the lower elevation.

5. Fill the remaining 20 foot length of casing with neat cement, cement grout or concrete. Allow the sealing material to spill over the top of the casing to fill any annular space between casing and soil.

6. After the seal has set, backfill the remaining hole with compacted material.

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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January 05, 2000

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

Order: 18344
Project Name:
Project Number: 1124SC01
Project Notes:

Date Collected: 12/27/99
Date Received: 12/28/99
P.O. Number: Invoice E2C

On December 28, 1999, 5 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 (#I-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# I-2346

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

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

Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-001 **Client Sample ID:** W-MW-1
Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	12/28/99	12/29/99	DW991211	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits
Hexacosane	84	65 - 135

Order ID: 18344 **Lab Sample ID:** 18344-002 **Client Sample ID:** W-MW-2
Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	12/28/99	12/29/99	DW991211	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits
Hexacosane	100	65 - 135

Order ID: 18344 **Lab Sample ID:** 18344-003 **Client Sample ID:** W-MW-3
Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	70	x	1	50	50	µg/L	12/28/99	12/29/99	DW991211	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits
Hexacosane	102	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 #I-2346)

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Attn: Ken Price

Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-004 **Client Sample ID:** W-MW-4

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	12/28/99	12/29/99	DW991211	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits
Hexacosane	122	65 - 135

Order ID: 18344 **Lab Sample ID:** 18344-005 **Client Sample ID:** W-MW-5

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	12/28/99	12/29/99	DW991211	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits
Hexacosane	119	65 - 135

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Date: 1/4/00
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Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-001 **Client Sample ID:** W-MW-1

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Toluene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	100	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	50	50	µg/L		12/28/99	WGC4991228	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	114	65 - 135

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

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Date: 1/4/00
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Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-002 **Client Sample ID:** W-MW-2

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	260		2	0.5	1	µg/L		12/29/99	WGC1991229	EPA 8020
Toluene	7.2		2	0.5	1	µg/L		12/29/99	WGC1991229	EPA 8020
Ethyl Benzene	1.3		2	0.5	1	µg/L		12/29/99	WGC1991229	EPA 8020
Xylenes, Total	*10.0*		2	0.5	1	µg/L		12/29/99	WGC1991229	EPA 8020

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	99	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	1000		2	50	100	µg/L		12/29/99	WGC1991229	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	90	65 - 135

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

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Date: 1/4/00
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Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-003 **Client Sample ID:** W-MW-3

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	170		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Toluene	2.1		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Ethyl Benzene	7.6		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Xylenes, Total	3.1		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	89	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	560		1	50	50	µg/L		12/28/99	WGC4991228	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	94	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 #I-2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

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

Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-004 **Client Sample ID:** W-MW-4

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	5.8		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Toluene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	101	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	55		1	50	50	µg/L		12/28/99	WGC4991228	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	113	65 - 135

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

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

Date: 1/4/00
Date Received: 12/28/99
Project Name:
Project Number: 1124SC01
P.O. Number: Invoice E2C
Sampled By: Bill Dugan

Certified Analytical Report

Order ID: 18344 **Lab Sample ID:** 18344-005 **Client Sample ID:** W-MW-5

Sample Time: **Sample Date:** 12/27/99 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	15		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Toluene	0.73		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L		12/28/99	WGC4991228	EPA 8020

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	96	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	130		1	50	50	µg/L		12/28/99	WGC4991228	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits
aaa-Trifluorotoluene	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 #I-2346)

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

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Spikes

QC Batch #: DW991211
Matrix: Liquid
Units: µg/L

Date analyzed: 12/28/99
Date extracted: 12/27/99
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP %R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Diesel	8015M	<50.0	1000	ND	946	**95**	997	**100**	5.3	25	61-120
Hexocosane(S.S.)				117%	111%		117%				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

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 #: WGC4991228
Matrix: Liquid
Units: µg/Liter

Date Analyzed: 12/28/99
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	5.6	ND	4.8	**85**	4.7	**84**	1.7	25	70-130
Toluene	8020	<0.50	31	ND	31	**98**	29	**91**	6.6	25	70-130
Ethyl Benzene	8020	<0.50	6.1	ND	5.8	**96**	5.6	**92**	4.5	25	70-130
Xylenes	8020	<0.50	35	ND	33	**96**	31	**89**	7.6	25	70-130
Gasoline	8015	<50.0	500	ND	464	**93**	433	**87**	6.8	25	70-130
aaa-TFT(S.S.)-FID	8020			109%	110%		112%				65-135
aaa-TFT(S.S.)-PID	8015			101%	94%		94%				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 Sample

QC Batch #: GBG1991229
Matrix: Liquid
Units: µg/Liter

Date Analyzed: 12/29/99
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	6.6	ND	6.3	**95**	6.2	**95**	0.6	25	77-129
Toluene	8020	<0.50	29.0	ND	26	**89**	25	**87**	2.1	25	82-122
Ethyl Benzene	8020	<0.50	5.7	ND	5.2	**92**	5.2	**91**	0.6	25	77-114
Xylenes	8020	<0.50	30.6	ND	30	**97**	29	**95**	2.1	25	85-125
Gasoline	8015	<50.0	500	ND	444	**89**	433	**87**	2.5	25	75-125
aaa-TFT(S.S.)-PID	8020			92%	94%		93%				65-135
aaa-TFT(S.S.)-FID	8015			98%	105%		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

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: _____ — 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): BILL DUGAN — DATE (S): 11/12/99

SAMPLE I.D.#:	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
W-MW-1	12/27/99		5	Water		X	X								Yes
W-MW-2	12/27/99		5	Water		X	X								Yes
W-MW-3	12/27/99		5	Water		X	X								Yes
W-MW-4	12/27/99		5	Water		X	X								Yes
W-MW-5	12/27/99		5	Water		X	X								Yes

COMMENTS / SPECIAL INSTRUCTIONS TO LABORATORY:

Invoice E2C, Inc.

COMMENTS / SPECIAL NOTATIONS BY LABORATORY:

CONDITION OF EVIDENCE TAPE (IF APPLICABLE):

RELINQUESTED BY (SIGNATURE): DUGAN ASSOCIATES	RECEIVED BY (SIGNATURE): ~~E2C, Inc.~~	DATE: 12/24/99	TIME: 8:10 AM
RELINQUESTED BY (SIGNATURE): AFFILIATION: Dugan Assoc	RECEIVED BY (SIGNATURE): Arash AFFILIATION: Entech	DATE: 12/28/99	TIME: 11:47
RECEIVED BY (SIGNATURE): AFFILIATION:	RECEIVED BY (SIGNATURE): AFFILIATION:	DATE:	TIME:

APPENDIX C

WELL MW-1 DESTRUCTION DATA

ACHSCA Approval Letter
Well Destruction Permit

December 3, 1999
Project Number 1124SC01
Via Facsimile and U.S. Mail

TO: William Dawson E2C
from: Barney Chan ACEH

Alameda County Health Care Services
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

ATTN: Barney M. Chan
SUBJECT: **Letter of Understanding**
Destruction of Monitoring Well MW-1
444 Hegenberger Road
Oakland, California

Dear Mr. Chan:

In reference to our telephone conversation yesterday, December 2, 1999, it is our understanding that we may destroy off-site Well MW-1. Then we can perform an evaluation to assess the need for replacement, if necessary. The off-site property owners have expressed an interest in having the abandonment done ASAP as they are developing the property.

In accordance with your concern regarding the latest TPHg hit in MW-1, we propose the following plan of action.

1) Collect Fourth Quarter groundwater samples from all wells ASAP.
2) Schedule to abandon Well MW-1.
3) Fill out necessary permits and submit them to the appropriate agencies.
4) Abandon well by overdrilling and grouting in accordance with regulatory agency guidelines.
5) Submit Fourth Quarter Monitoring report.
6) Perform evaluation as to need for a replacement well.
7) Install replacement well, if deemed necessary, in First Quarter of 2000 and add to sampling schedule. The evaluation will be reported in the First Quarter 2000 Monitoring report.

If you are in agreement with this course of action, please sign and fax a copy to us. Should you have any questions or require supplemental information, please do not hesitate to contact us.

E_2C INC
ENVIRONMENTAL / ENGINEERING CONSULTANTS
382 Martin Avenue, Santa Clara, CA 95050-3113 Tel: 408.327.3700 Fax: 408.327.3707

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5248 MARLON MAGALLANES/CINDY HUTCHINSON
FAX (510) 670-5262

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 444 Hegenberger Rd. Oakland, CA

CLIENT
Name McMorgan & Company
Address One Bush St., Suite 600 Phone (415) 788-9300
City San Francisco Zip 94104

APPLICANT
Name E2C, Inc.
Fax
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	☐	Well Destruction	☒

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C-17768/

WELL PROJECTS
Drill Hole Diameter ____ in. Maximum
Casing Diameter ____ in. Depth ____ ft.
Surface Seal Depth ____ ft. Number ____

GEOTECHNICAL PROJECTS
Number of Borings 1 Maximum
Hole Diameter 8 in. Depth 20 ft.

ESTIMATED STARTING DATE DEC 27, 99
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 W.C. Hawson for E2C, Inc. DATE 12/10/99

FOR OFFICE USE

PERMIT NUMBER 99WR-723
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 Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
(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 compacted cuttings or heavy 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 Coelho DATE 12-14-9

I concur with the plan of action discussed above.

Barney M Chan Dated 12-6-99

Barney M. Chan, ACHCS

Sincerely,

William A. Lawson
Project Geologist

WAL E$_2$C: 11245C01_101399_btlett

CC: Mr. Patrick Murray
McMorgan & Co.
One Bush St., Suite 800
San Francisco, CA 94104

Mr. Brad Urie, FAX- (714) 445-3690
Marlatt Architecture & Construction
3130 S. Harbor Blvd., Suite 240
Santa Ana, CA 92704

Walter Kim, E$_2$C